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LSU Health Shreveport School of Graduate Studies

2021 - 2022 STUDENT HANDBOOK

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July 2021

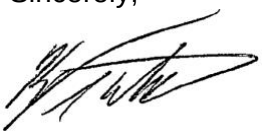
Dear Students:

Welcome to the Louisiana State University Health Sciences Center-Shreveport, School of Graduate Studies. I am delighted that you have chosen to join the program here, to pursue the highest degree awarded by this School, the PhD, or the MS degree in Biomedical Sciences. Each of the Basic Sciences Departments has designed a curriculum that will provide you with the background and skills required for a successful career. Some courses are part of a core curriculum for all graduate students, and others are specific for the individual departments. Your training at our institution will prepare you to achieve successful careers in academia, research, industry or numerous other professions.

This handbook is meant to be a reference for your graduate studies and will be updated annually. A description of the program of study designed by each of the Basic Science Departments is included in this Handbook. Also included is general information about LSU Health Sciences Center School of Graduate Studies Policies and specific information about the LSU Health Shreveport Campus. Please do not hesitate to contact me or your departmental program directors if you need more information.

I wish the best to all of you during your studies here!

Sincerely,



Kelly Tatchell, PhD
Associate Dean, School of Graduate Studies
Professor, Biochemistry and Molecular Biology

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LSUHSC-SHREVEPORT SCHOOL OF GRADUATE STUDIES

MISSION

The mission of the School of Graduate Studies at LSU Health Sciences Center in Shreveport (LSUHSC-S) is to educate and train students in programs leading to the Master of Science and Doctor of Philosophy Degrees in the Biomedical Sciences. Graduates of these programs are qualified for positions in academic, industrial, government and health care environments.

Graduate education in academic health centers is changing dynamically due in part to rapid advances in the basic sciences and biotechnology. The School of Graduate Studies is constantly developing and refining its programs so that graduates are trained to contribute to and compete in a changing world environment. Goals of the School of Graduate Studies in support of its mission are:

- To provide a strong program of instruction and research experience by providing high quality faculty, modern equipment and research facilities and a comprehensive approach to education.
- To train biomedical scientists who can contribute to advances in health care and biotechnology.
- To develop educators who will contribute to the graduate education of basic scientists, physicians and other health care professionals.

HISTORY

The Louisiana State University Health Sciences Center in Shreveport (LSUHSC-S) consists of the School of Graduate Studies, School of Medicine and the School of Allied Health Professions. All are part of the statewide Louisiana State University System. Prior to October 1, 2013, the university hospital was part of LSUHSC-S. The hospital is now Ochsner-LSU, a partnership between Ochsner Health System and LSU Health Shreveport.

The School of Graduate Studies at LSUHSC-Shreveport was originally part of the LSU A&M Graduate School in Baton Rouge. When the School of Medicine in Shreveport was authorized by an act of the Louisiana Legislature in 1965 as part of the Louisiana State University Medical Center, the School of Graduate Studies continued in the LSU Medical Center Campuses in Shreveport and New Orleans. The first class of graduate students on the Shreveport Campus was accepted in 1974. In 1978, the first PhD degree was awarded from the Shreveport Campus. The LSU Medical Center was renamed the LSU Health Sciences Center in 1999, and the first Chancellor, Dr. John McDonald was appointed on November 3, 2000 for the Shreveport Campus. On March 25, 2004, the Louisiana Board of Regents approved the Administrative Separation of the School of Graduate Studies in Shreveport from the School of Graduate Studies in New Orleans. The School of Graduate Studies in Shreveport was placed under the leadership of the Shreveport Chancellor. The first Dean of the Graduate School was appointed on April 1, 2004. The Louisiana Legislature approved the official separation of the Schools in June 2005 and Governor Blanco signed the bill in July 2005. Thus, the Louisiana State University Health Sciences Center in Shreveport is now a separate, independent institution. In June 2009, LSUHSC-S achieved independent accreditation through the Southern Association for Colleges and Schools (SACS). Reaccreditation for 10 years was achieved in December 2014.

Shreveport campus program directors:

1974-1982	R. Don Brown, PhD, Coordinator of Graduate Studies
1982-1984	Harry Gilleland, PhD, Coordinator of Graduate Studies

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1984-1992	Joseph Manno, PhD, Assistant Dean for Graduate Studies
1992-1996	Ronald Korthuis, PhD, Assistant Dean for Graduate Studies
1996-1999	Robert Chervenak, PhD, Assistant Dean for Graduate Studies
1999-2000	Leonard Seelig, PhD, Assistant Dean for Graduate Studies
2000-2004	Sandra C. Roerig, PhD, Assistant Dean for Graduate Studies
2004-2019	Sandra C. Roerig, PhD, Dean, Graduate Studies
2019–present	Christopher Kevil, PhD, Dean, School of Graduate Studies
2019–present	Kelly Tatchell, PhD, Associate Dean School of Graduate Studies

The School of Graduate Studies is comprised of five Basic Science Departments: the Department of Biochemistry and Molecular Biology, the Department of Cellular Biology and Anatomy, the Department of Microbiology and Immunology, the Department of Molecular and Cellular Physiology, and the Department of Pharmacology, Toxicology and Neuroscience. Each department offers a Doctor of Philosophy (PhD) Degree in their respective discipline.

From the beginning of the School, the Masters of Science (M.S.) degree was also offered in each department. Beginning on July 1, 2011, the Louisiana Board of Regents approved combining these five degree programs into a single M.S. degree program in Biomedical Sciences. Students in this program are recruited into one department and complete the requirements in that department. They are awarded the M.S. degree in Biomedical Sciences. Within the Department of Cellular Biology and Anatomy, a M.S. Clinical Track for training students as instructors of human anatomy is also available.

Graduate Faculty offices and laboratories were originally established at the VA Medical Center and later moved to the new Medical School (Building B) in 1976. The Biomedical Research Institute (BRI) building was dedicated in February 1994 and currently houses many Graduate Faculty offices and laboratories as well as the Research Core Facility. The BRI also houses some staff of the Biomedical Research Foundation of Northwest Louisiana (BRF), who operate its Positron Emission Tomography (PET) facility.

LOCATION

The Office of the School of Graduate Studies is located on the first floor of the BRI F1-32A.

Ms. Lisa LaChance, School of Graduate Studies Project Coordinator, is available to address questions regarding registration, financial aid, visa and other issues for international students. other issues that pertain to your education while at LSU. This includes Postdoctoral Fellows. You may contact Ms. LaChance at:

318-675-7674 (phone)
lisa.lachance@lsuhs.edu

Ms. Chanda Maguigan, School of Graduate Studies Coordinator, is available to address question regarding courses, scheduling, Moodle, the Graduate Student Council and social events in the school. You may contact Ms. Maguigan at:

318-675-4704
chanda.maguigan@lsuhs.edu

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ADMISSION AND REGULATIONS

Admission Requirements

The School of Graduate Studies is dedicated to developing a culture that fosters the recruitment, nurturing, and retention of a diverse student body that is reflective of our larger community. Students of all racial and ethnic backgrounds are encouraged to apply to our programs. Applications are considered without regard to race, color, religion, sex, national origin, political affiliation, sexual orientation, gender identity, marital status, veteran's status, disability, genetic information, age, membership in an employee organization, or other non-merit factor.

Unconditional Admission
The requirements for unconditional admission to the School of Graduate Studies are:

1) A baccalaureate degree from a college or university approved by a regional accrediting agency
2) Grade point average of at least 2.5 for undergraduate work, and 3.0 grade point average for graduate work, on a 4.0 scale and based upon all work for which a grade is given
3) Satisfactory scores on the Graduate Record Examination (varies by program)
4) Satisfactory standing at the most recent educational institution attended. Transcripts from all international applicants must be evaluated by a global credentialing service (such as World Education Services or Educational Credential Evaluators) at the expense of the applicant.
5) International applicants must present acceptable scores on the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS)
6) Acceptance to a Departmental or IGP program. It should be noted that individual departments may establish higher requirements than the minimum standards of the School of Graduate Studies. Thus, a student meeting minimum Graduate School requirements may not meet the requirements of a particular department.
7) International applicants who are accepted must provide a copy of their passport page that includes the student photograph to the department application. This document will be included with the visa application form.

Provisional Admission: Applicants who satisfy most requirements of the School and are accepted by the department of choice but who are unable, for good reason, to supply all required credentials prior to the stated deadline may request provisional admission. In these instances, complete credentials must be received no later than sixty days after the first day of classes (forty-five days in the summer term).

Probationary Admission: Applicants who fail to meet all qualifications but who are nevertheless judged by the departments concerned and by the Dean to show promise for successful graduate work may be considered for probationary admission on the merits of their individual cases. These applicants will be required to meet specific Departmental or Graduate School requirements prior to admission.

Regulations

Experiential Credit:

- The School of Graduate Studies does not award credit or advanced placement for any previous work experience or professional work certificate obtained by a student prior to admission. At the recommendation of a Department, and with approval by the Associate Dean of the Graduate School, some coursework may be waived for students who enter a PhD program after having completed an advanced degree program such as M.S., MD or DVM.

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Registration:

- Annual registration dates are listed in the Academic Calendar on the Registrar's page on our website. An invoice outlining all university charges is issued to the student's LSUHSC-Shreveport email account each academic term for which the student is enrolled.
- Fees charged by the university are due by the date indicated on the invoice. This date is the first day of classes as designated in the Academic Calendar. Accounts will be considered delinquent on the 15th day of a Fall/Spring semester or the 8th day of the summer semester. All inquiries regarding invoices of university charges should be directed to the Bursar's Office. Students must be prepared to begin their studies at the beginning of the semester in which they first registered.
- Registration is accomplished electronically through the Student Self-Service Portal. In addition, registration information must be submitted online via FormStack. Full-time students must register for at least 9 credit hours in the fall and spring semesters and 6 credit hours in the summer term. Permission to exceed the 15 hour credit limit may be granted by the Dean. All students engaged in research should register for the appropriate research category in the department of residence as required by the Department. Students should continue to register for research as appropriate during the majority of their enrollment.
- Students should register for Exam Only (see below) for the semester in which they expect to present their thesis/dissertation defense. Students should register for Diploma Only (see below) if they completed all their degree requirements in the semester before the defense but missed the Academic Calendar deadlines.

Fee Payment Options:

- Website Portal - the fee bill can be paid with a credit card or bank account in the self-service portal available on the Bursar's Website. Please note there is a 2.5% fee applied to all credit card and debit card payments.
- Mail - students can print and return the invoice and payment to the LSUHSC-Shreveport Bursar's Office, PO Box 3332, Shreveport, LA 71130-3932
- In person – Pay by cash, check or money order at the Bursar's Office window located on the first floor of the Medical School, Building B, Room 1-218

Special Status Students:

- An applicant may seek to enroll in Graduate School courses as a non-matriculating Special Status student. The applicant must have earned a baccalaureate degree from an accredited college or university. A minimum undergraduate GPA of 2.5 and 3.0 for graduate work is required. An official transcript must be sent from the college or university to the School of Graduate Studies.
- The applicant must submit to the School of Graduate Studies a letter signed by the director of the course in which the applicant wishes to enroll. The letter must state the course number, title and number of credit hours, as listed in the LSUHSC-S catalog. The applicant letter must arrive in the Graduate School Dean's office for approval at least two weeks before registration. If approved, the applicant must fill out an application form at least one week before registration. This procedure applies for each term in which the student wishes to enroll in a course.
- At registration, the student will pay the registration fees according to the Graduate School fee schedule. A maximum of 12 credit hours of graduate credit earned as a Special Status student will be considered for meeting a graduate degree requirement in the School of Graduate Studies. Credit hours earned as a Special Status student may not be used to meet degree requirements in the School of Medicine or the School of Allied Health Professions.

Reapplication:

- Former students in the School of Graduate Studies who wish to resume work after an absence of more than one semester will be required to submit an application for re-admission at least ten

days before registration. Supplementary transcripts must be submitted if any work has been performed at another institution during the interim. Exceptions to this requirement will be only by successful petition of the Dean.

Students applying to medical school

- Graduate students who apply for admission to the LSUHSC School of Medicine, or any other LSU professional school, shall not be enrolled in the professional school until they have completed the graduate program or formally withdrawn.

Adding and Withdrawing Courses:

- Print the Add/Drop Form from the Registrar web page
- Complete the form, sign it, and obtain signatures from advisor, Department Head and Associate Dean before submitting the form to the Registrar.
- A copy of the form must be submitted to the Graduate Studies Office.
    - For courses of 1 credit hour, the final date for adding the course is 5 class days after the beginning of the course. The final date for dropping or withdrawing from the course and receiving a grade of "W" is 5 class days from the last day of the course. If withdrawal is requested with less than 5 days remaining in the class, a grade of "F" will be assigned.
    - For all other courses, 10 class days will be allowed as described above.
    - **If a student discontinues a course without completing the required withdrawal form, a grade of "F" will be assigned for that course**.

Grading System and Requirements:

- Courses are in either a graded system in which a grade of A has the value of 4 quality points per semester hour, a grade of B has 3 points/ semester hour, C has 2 points/ semester hour, and a D has only one point value. F grades carry no points; "I" grades indicate unfinished work. The other grading system is Satisfactory (S) /Unsatisfactory (U).
- Research, seminar and journal club courses will be graded only using the S/U system. Methods courses given for letter grades must be approved in advance by the Graduate Advisory Council and by the Dean. In some Departments, a course with a C grade or less may not be accepted for credit toward a degree and must be remediated. Students in serious scholastic difficulties (C grades or lower) may be dropped from the rolls at the end of any semester if the Department and Dean feel that the student is not qualified to continue.
- **Academic Probation:** To receive a graduate degree, a student must maintain an average grade of at least a B (3.0) on all work completed as a graduate student. Credits from S/U courses are not used in computing the grade point average. A student will be placed on academic probation if his/her grade point average (GPA) drops below a 3.0 in any semester. The student will then be allowed one calendar year (three consecutive semesters) to raise the GPA to 3.0 or above. The student will be dropped from the rolls of the School of Graduate Studies if at least a 3.0 GPA is not achieved in this time period.
- **Incomplete Grades:** An incomplete (I) grade is given for work that is of passing quality but, which because of circumstances beyond the student's control, is not complete. An instructor may assign an "I" only with the written authorization from the Associate Dean. It is the responsibility of the student to request and justify the "I" grade.
  All course requirements must be completed by the 7th day of the summer semester or 14th day of the Fall/Spring semester. If the requirements are not met by this deadline, the "I" will convert to a failing (F) grade or Unsatisfactory (U) grade. If the student's circumstances preclude removal of the "I" by the deadline, the student or instructor may, before the deadline, petition the Dean for an extension.
- **Examination Only status:** Students who have successfully completed all the degree requirements except for the final dissertation/thesis defense and submission of the final

dissertation/thesis, may register "for examination only" (X999). A student is only eligible for this status if they will be defending their dissertation/thesis in the semester in which they have registered. Exam only status students are enrolled for zero credit hours and their enrollment status is reported as less than half time. Students will be assessed a graduation fee. Students enrolled in "Exam only" may contact the Student Financial Aid Office for information regarding their eligibility for federal student financial aid.

- **Diploma Only status** – A student is only eligible for this status if they have successfully defended their dissertation/thesis, resolved any "I" Incomplete grades in their final semester, and met all degree requirements prior to the last day to add classes (14th day of classes during Fall/Spring semesters; 7th day of classes during a Summer term) for the semester of graduation. Diploma Only status students are enrolled for zero hours and their enrollment status is reported as less than half time. Students may be assessed a graduation fee. Students enrolled in "Diploma only" may contact the Student Financial Aid Office for information regarding their eligibility for federal student financial aid.

Statement of Satisfactory Academic Progress: A student who is permitted continuous enrollment is considered to be making satisfactory progress. The Departments and the Dean review the qualitative and quantitative academic progress of each student. A student may be permitted to remediate upon the recommendation of the student's Department and concurrence by the Dean. Such a student is considered to be making satisfactory academic progress during the period of remediation.

Time Limit for Earning Degrees: The School of Graduate Studies requires that all work towards a PhD degree be completed in no more than eight calendar years and all work towards a M.S. degree must be completed in no more than four years. A student who changes from the PhD program to the M.S. program must complete his/her degree requirements within four years of admission or one year after the switch is made from the PhD program, whichever is longer. Any requests for deviation from this policy are subject to approval by the student's Graduate Research Committee and the Dean.

Degrees for Full-Time Faculty and Staff: The School of Graduate Studies will not award graduate degrees to full-time faculty of the Health Sciences Center above the rank of Instructor, or to other employees of equivalent status.

Full-Time Employees: LSUHSC-S employees may register for up to six (6) hours of credit per semester and three (3) hours in the summer term if the following terms or requirements are met:

- Course registration requires written approval of the employee's immediate supervisor and Department Head. The employee must deliver the letters to the School of Graduate Studies at least two weeks before registration.
- Completion of a Graduate School application form.
- At registration, the employee will pay for the course according to the Health Sciences Center Fee Schedule, but employees may qualify for tuition and fee exemption. Criteria include:
    - at least one year of 100% service prior to class registration
    - non-academic or other academic employment (faculty are excluded)
    - only 3 hours per week of educational leave may be taken during work time. Additional time for coursework must be recorded as Annual Leave or Leave Without Pay
    - good academic standing is required for continuing use of the program.
- If approval is granted, the student must submit the original request form and two copies to the Office of Graduate Studies on or before the registration date for the relevant semester.
- Full-time employees who are accepted into the M.S. program as part-time students may qualify for tuition exemption as described above. After being accepted into the program, the student may register using the student portal system.

- All employees must comply with LSUHSC-S Student Health requirements and also must maintain health insurance. A Course Schedule Form must be completed, signed by employee's supervisor and submitted at Registration.

Course Audits: Enrolled students may audit courses without credit. To audit an entire course, the student must request permission from the course director. If the course director informs the Registrar at the that a student is auditing, the course audit will appear on the student's transcript. Persons not enrolled in the Graduate School will not be permitted to audit graduate courses.

Graduate Student Leave

- **Annual leave** All full-time graduate students are entitled to 10 working days of annual leave per academic year during which the stipend will be continued. Unused leave does not accumulate (i.e., it does not carry over to the next year). The academic year starts on July 1 and ends on June 30 of the following year. The student is expected to prepare written requests for leave indicating the desired dates for annual leave. The request for annual leave must be submitted at least two weeks prior to the desired dates for annual leave to the student's Dissertation Advisor (or Departmental Program Director for those students who have not yet selected a Dissertation Advisor) and Department Head. Maternity/paternity leave is considered annual leave, so leave beyond 10 days in one academic year will be considered leave without pay.
- **Leave of Absence** Students wishing to take a temporary break in enrollment, for reasons other than academic, must apply for a leave of absence from the institution. Leave of absence is defined as any time period longer than the 10 days that students are allowed for annual leave, and is considered leave without pay. Leave of absence may be granted for extended illness, disability or personal reasons. Stipend support for the student may not be extended during the leave of absence period. The student is expected to prepare a written request that fully outlines the reason for the request and indicates the dates on which the leave of absence will begin and end. As much notice as possible should be given to the student's Dissertation Advisor (or Departmental Program Director for those students who have not yet selected a Dissertation Advisor), Department Head and Dean of Graduate Studies prior to the beginning of the leave, and at least two weeks written notice prior to returning to school. The Graduate School office is required to notify the Office of the Registrar whenever a student requests a leave of absence. If the leave of absence extends beyond one year, the student must reapply to the program and will be considered in the applicant pool for that department.
- **Funeral leave** Students are permitted 2 days of funeral leave to attend services or burial rites for immediate family members (father, mother, sibling, spouse, child, in-laws, grandparents, grandchild, and stepfather, stepmother, and step-siblings). The student should submit a leave request indicating the desired dates for funeral leave to the Dissertation Advisor (or Departmental Graduate Program Director for those students who have not yet selected a Dissertation Advisor) and the Department Head. If not requested prior to the absence, appropriate forms must be completed and submitted immediately after funeral leave has been taken.
- **Pregnancy or other medical condition leave** A full-time graduate student who has been in the program for at least one year is eligible for FMLA (Family Medical Leave Act) leave for pregnancy or chronic medical condition. FMLA leave extends up to 12 weeks and a physician's release is required to return to school. An additional 4 weeks can be allowed if there are complications. If the father of a newborn works for LSUHSC-S, the father and mother are limited to sharing a combined total of 12 weeks. Because circumstances may require that FMLA leave begins before the actual date of birth of a child, FMLA paperwork should be completed as soon as pregnancy is diagnosed and returned to Human Resources (HR). HR should be notified when the physician certifies that the student is unable to continue working, and a medical release should be provided to HR when the student returns to school after the birth of the baby. The student's (both mother and father) stipend will be paid for any available unused annual leave of

up to 10 days during the FMLA period. For full-time students who have been in the program for less than one year, 6 weeks is allowed for pregnancy leave. This leave is not covered by FMLA.

- **Exceptions** In exceptional cases, extended leave with pay may be granted. Approval of the Dissertation Advisor (or Departmental Program Director for those students who have not yet selected a Dissertation Advisor), Department Head and Dean of Graduate Studies must be obtained in such cases. All hours of annual leave must be used before a student will be granted a request for extended illness, disability or personal leave with pay.

Withdrawing from the LSU Health Shreveport

- All students admitted to a School of Graduate Studies program are expected to continue enrollment until completion of the program. Students who cease enrollment in ALL classes for a given term will be considered **withdrawn**, unless the student has received an approved Leave of Absence. For clarification, a student who remains enrolled in one class is still considered enrolled.
- A student who wishes to withdraw from the University, for any reason, must submit a signed resignation letter to their Program/Department Chair. They must also meet with the Associate Dean, who will submit a completed Withdrawal Notification Form to the Office of the Registrar within two business days of the date they were notified that a student provided official notice of withdrawal. The Office of the Registrar will report change in enrollment status and the date the status change occurred to the Offices of Student Financial Aid and the Bursar. Some academic programs may require additional clearance actions for students leaving the institution.

Program Transfers

Transfer between Departments Graduate students wishing to transfer from the graduate program in one Department (Department A) to that offered in another (Department B) must:

- Resign from Department A by directing letters of resignation to the Department Head and Dean of Graduate Studies.
- Submit an application for admission into Department B. This application will be placed into consideration with the pool of applicants in Department B. The previous acceptance into Department A does not guarantee admission into Department B. Department B will provide a letter of acceptance into that program to the Graduate School Office. Only one transfer per student is permitted.

Transfer from the PhD program into the M.S. program Students enrolled in a PhD program may choose to transfer to the M.S. in Biomedical Science program. The reason for the transfer may be personal, based on Departmental evaluation/recommendation, or because the student was unsuccessful in passing the preliminary/qualifying exam process. Students must be in good academic standing at the time of transfer. For transfer, the student must submit to the Graduate School Office:

- a completed application form for the M.S. program (forms available in the Graduate School Office)
- a letter of acceptance into the M.S. program from the Department, signed by the Department Head

Transfer from the M.S. program into the PhD program Students enrolled in the M.S. in Biomedical Science program who are in good academic standing have the opportunity to apply for transfer into a Department PhD program. The student must submit a completed application to the PhD program to the Department and the Graduate School. Upon acceptance into the program, the student must provide the letter of acceptance, signed by the Department Head, to the Graduate School Office.

Individual Development Plan (IDP)

Each student is required to complete and submit an IDP form for each year of enrollment in the program. The IDP policy, described later in this handbook, is meant to assist students in achieving their career

goals. The IDP form includes an annual report of the student's activities as well as defined plans for the following year. Signed, completed forms must be submitted to the Office of Graduate Studies by July 31 of each year, to include information from the previous academic year (July 1 through June 30).

Financial Support

Stipends: Students enrolled full-time in the PhD program are eligible for stipend support. Students in the PhD program who transfer to the M.S. program are eligible for stipend support for up to six months following enrollment in the M.S. program, provided that the funding for the support is derived from either the student's mentor's account or departmental accounts. These stipends range from $24,000 to $26,000 per year, depending on the Department and the status of the individual student. For example, in some Departments, the stipend is increased by $1,000 per year when the student has passed the qualifying exam. Students who have passed their qualifying examinations are encouraged to apply for predoctoral fellowship awards through external granting agencies or intramural support (see below). Maintenance of eligibility for stipend support is determined on an annual basis by the Departmental evaluation of the individual student's performance during the previous academic year.

Other Support - Extramural: Students are encouraged to apply to granting agencies such as the National Science Foundation (NSF), National Institutes of Health (NIH), American Heart Association, Department of Defense, Pharmaceutical Research and Manufacturers of America Foundation, Howard Hughes Medical Institute etc., to obtain individual predoctoral fellowships. Applicants should consult the Department Graduate Program Director and the Office of Sponsored Programs and Technology Transfer regarding the possibilities. Students are encouraged to submit their dissertation proposals to NIH as individual National Research Service Awards (NRSA). Students who receive competitive fellowships that pay for their stipend are eligible to receive a yearly stipend up to $28,000, with any supplement to be provided by the Department or their advisor.

Other Support - Intramural: Competitive predoctoral fellowships are offered through the LSUHSC-S intramural grants program. These fellowships are available to PhD students who have successfully passed their preliminary and qualifying exams. Students may apply for one of three different fellowship awards. The Malcolm Feist Predoctoral Awards are available to students who are involved in cardiovascular research. The Carroll Feist Predoctoral Awards are available for students whose dissertation project is an area of cancer research. The Ike Muslow Predoctoral Fellowships are available to students involved in areas of research that are not cardiovascular or cancer-related. These fellowships are $28,000 per year, initially awarded for one year, and renewable for up to two additional years, depending on the progress of the project. Additional information is available on the Office of Research website. Applications are accepted at both April and October submission deadlines, as described on the Office of Research website.

Expectations of Support: Full-time students who are receiving stipends or fellowships are expected to devote their full efforts toward their academic studies and research projects. These students are not eligible to receive additional funds from employment at LSUHSC-S, and should not seek outside jobs and/or part-time employment. Students in financial difficulty should discuss this matter with their mentor, the Department Graduate Program Director, the Head of the Department, the Dean of the School of Graduate Studies and/or the Office of Student Financial Aid. Temporary (emergency) loans are available through the School of Graduate Studies (see below).

Tuition Waivers: Students enrolled full-time in the PhD and M.S. programs are eligible for full tuition and non-resident fee waivers. Maintenance of eligibility for these waivers is determined on an annual basis by the Departmental evaluation of the individual student's performance during the previous academic year. Students enrolled in Examination Only or Diploma Only (see above, under Regulations) are enrolled for zero hours and the tuition of $100 is waived. Part-time students enrolled in the M.S. program may be eligible for tuition waiver depending on availability of funds. Priority for tuition waivers is as follows: PhD students, followed by full-time M.S. students, followed by part-time M.S. students, depending on availability of funds.

Student Fees: Student fees are determined each year by a vote of the LSU Board of Supervisors and consist of student union, health, yearbook, activity and operational fees. These fees must be paid by

each student, including those who have tuition waivers. Fee amounts are based on the number of hours for which a student is registered and must be paid in full each semester/term. Students will receive an invoice by e-mail from the Bursar. For details, see earlier sections under Regulations, under Registration.

Graduation Fee: There is a one-time graduation fee for graduating students. This fee is charged for the semester in which the student intends to complete the degree requirements by the deadlines described in this handbook. When registering for the semester that the student pays the Graduation Fee, (s)he also pays the required student fees. Graduation fees are $107 for the PhD candidate and $32 for the M.S. candidate. This fee pays for the diploma, dissertation/thesis binding (2 copies) and a microfilming fee (for PhD students only). If the student does not graduate at the end of the semester in which (s)he pays the Graduation Fee, (s)he is charged a $5 diploma reorder fee for each following semester that (s)he is enrolled past the planned graduation semester.

DEGREE PROGRAM REQUIREMENTS

Master of Science Degree in Biomedical Science

The Master of Science (M.S.) degree in Biomedical Science is offered in the five basic science departments.

Residence (time enrolled as a full-time student): Both full-time and part-time options are available.

- Full-Time: One academic year, two semesters, or four summer terms represents the minimum requirement for full-time students.
- Part-Time: Students who wish to pursue the M.S. degree on a part-time basis must submit a written request, signed by the Department Head and the Department Graduate Program Director, to the Graduate School Dean for approval. This request must be submitted each semester in which the student wishes to enroll and must state the number of credit hours in which he/she will enroll.

Semester Hours: The minimum requirement is 30 semester hours of graduate work, at least 17 of which must be taken in courses that require a letter grade for evaluation, and not more than two credit hours of seminar credit. At least six research hours must be completed. Departmental requirements may exceed these minimum requirements.

Transfer of Credit: Candidates for the Master of Science degree may receive up to five hours of transfer credit from another graduate level accredited institution at the discretion of the Department involved, providing the students have completed courses which are comparable to LSUHSC-S School of Graduate Studies' courses, and satisfy the subject matter requirements. No transfer credit is permitted for course work receiving a grade below B. Written notification clearly listing the courses to be transferred must be sent to the Associate Dean, who will notify the Registrar. Credits may also be transferred to the M.S. program from the PhD program for students who desire to switch from the PhD program at LSUHSC-S to the M.S. program. There is no limit on the number of transfer credits from the PhD program at LSUHSC-S to the M.S. program at LSUHSC-S.

Candidacy: A student becomes a candidate when s/he has completed 12 semester hours of work with a B average and has received Departmental approval.

Thesis Instructions: When the thesis research is complete, the candidate will be required to write and to successfully defend the thesis in an oral exam. Detailed INSTRUCTIONS for writing and formatting the thesis are available on Moodle. The final dates for submitting the thesis, completing the thesis

defense, and submitting the approved thesis to the Graduate School can be found on the Academic Calendar.

Thesis Defense and Degree requirements: The student must be enrolled in the School of Graduate Studies in the semester in which the oral defense is scheduled and maintained at least a 3.0 GPA . Application for the oral thesis defense must be made at least two weeks prior to the defense date. The completed request form, along with an abstract of the thesis must be received by the Graduate School office two weeks prior to the thesis defense date. In addition, copies of the thesis must also be circulated to the examining committee and a public announcement of the thesis defense must be made two weeks prior to the defense. Final approval of the thesis rests with a committee of no less than three graduate faculty members, one of whom must be from a Department other than the Student's Department, nominated by the Chair of the Department, and appointed by the Associate Dean. The Associate Dean may serve as a member or may appoint members to the Committee. After the oral defense, the Committee votes, in the absence of the student, whether to pass the examinee. There may be no more than one negative vote. The Major Professor must be present on site for the thesis defense. Voting is made when the student is not in the room. The student passes the exam if there is no more than one negative vote. The submission of the signed Final Dissertation Report and final copies of the accepted thesis to the Graduate School Office constitutes fulfillment of the degree requirements. Deadlines for completion of these requirements are in the Academic Calendar See **Instructions for Completing Graduation Requirements for details.**

The Doctor of Philosophy Degree

The Doctor of Philosophy (PhD) degree is the highest degree offered by universities. It is conferred only for work of distinction in which the student displays original scholarship.

Residence (time enrolled as a full-time student): Three years (9 semesters) of residence in the program are required, although in most programs more time is needed. Exceptions may be made by petition to the Graduate Dean and the Graduate Advisory Council. One year (three consecutive semesters/term) must be taken in residence at LSUHSC-S following completion of the preliminary examination.

Course Requirements: Specific course requirements are dependent upon individual Departmental policy. However, in general, a minimum of 32 credit hours is required and at least 20 of those hours must be taken in courses that require a letter grade for evaluation. Some of the credit may be earned in one or more minor fields. No more than fifteen credits may be counted for research and dissertation and no more than four credits for seminar, even though both may be carried throughout the program. Departmental requirements may exceed these minimum requirements.

Transfer of Credit: Candidates for the PhD degree may receive up to fifteen hours of graduate level transfer credit from another accredited institution at the discretion of the Department (with approval of the Department Head) involved, providing the students have completed courses that are comparable to LSUHSC-S School of Graduate Studies' courses, and satisfy the subject matter requirements. Written notification clearly listing the courses to be transferred must be sent to the Associate Dean, who will notify the Registrar. Credits earned in the M.S. program at LSUHSC-S (up to fifteen hours) may be transferred to the PhD program at LSUHSC-S. No transfer credit is permitted for course work receiving a grade below B, and transfer of credit does not reduce the residency requirement.

Qualifying Process: Each Department will be responsible for the qualifying process and will develop appropriate policies that will be on file in the Associate Dean's Office. Departmental qualifying processes are described in detail in the Departmental policies.

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Preliminary Examination: The applicant becomes eligible for the Preliminary Examination at a time chosen by the Department but not less than one academic year (three consecutive semesters) before graduation. The student and his/her major professor, with the approval of the Department Head and the Associate Dean, will recommend a research committee and petition the Associate Dean to appoint the committee and allow the student to schedule the examination. The student must complete and submit the Request for Preliminary Exam form to the Office of Graduate Studies two weeks prior to the scheduled exam.

The research committee will ordinarily consist of the student's major professor and at least four other Graduate Faculty members representing major and minor disciplines. At least one member must be from another Department and one member may be from outside the Health Sciences Center. Substitution or addition of committee members may be made by the Associate Dean after consultation with the major professor and Department Head, but continuity of membership is sought to provide consistent guidance of the student through the program.

The preliminary examination is the most thorough in the doctorate program. It will require the candidate to demonstrate competence in a broad segment of the major and minor fields. Although the examination may be oral, written or both, a written section is strongly recommended. A completed Report of Preliminary Exam form, including all committee signatures, must be submitted to the Office of Graduate Studies for approval by the Associate Dean of Graduate Studies. If there is no more than one negative ballot out of a minimum of five, the student becomes an official candidate for the PhD degree.

Grant proposal: Each PhD student is required to write a grant application in National Institutes of Health format. This proposal generally contains the elements of the dissertation project. The student may also be required to provide an oral defense of the application to his/her research advisory committee. Successful defense of the application may serve as completion of the preliminary examination and advance the student to PhD candidacy.

Dissertation: The dissertation must be an original and significant contribution to the field, suitable for publication in a refereed journal of international repute. Detailed instructions for writing and formatting the dissertation are available on Moodle. For the planned graduation date, the student should check the school calendar for the final date for submission of the dissertation to the School of Graduate Studies.

Dissertation Defense: The student must be enrolled in the School of Graduate Studies in the semester in which the defense is scheduled. The defense can be scheduled if the student has completed all the course requirements, and passed the qualifying and preliminary exams. The examining committee consists of:

- At least five graduate faculty members, one of whom must be from a Department other than the Student's Department, nominated by the Major Professor, Head of the Department and approved by the Associate Dean.
- At least four graduate faculty members, one of whom must be from a Department other than the Student's Department, and one prominent scientific expert in the student's research area from another research institution. This expert is selected by the mentor and approved by the Department Head and Associate Dean.

The Associate Dean may serve as a member or may appoint members to the Committee. Traditionally, this examination is a test of the student's intimate knowledge of the area of the field of the dissertation research. However, at the discretion of the Committee or the Dean, the examination may include questions from the major or minor fields in general. The Major Professor must be present on site for the dissertation defense. Voting is made when the student is not in the room. The student passes the exam if there is no more than one negative vote. The student also must present a seminar, either immediately before the oral defense or after the defense. The submission of the signed Final Dissertation Report and final copies of the accepted dissertation to the Graduate School Office

constitutes fulfillment of the degree requirements. Deadlines for completion of these requirements are in the academic calendar.

Instructions for Completing Graduation Requirements

Semester before you anticipate graduating

- You must be enrolled as a student in the semester/term in which you defend your thesis/dissertation. During registration for the semester you anticipate graduating, inform the Graduate School Office that you intend to graduate in that semester/term and pay the appropriate graduation fees. These fees cover a microfilming fee, a diploma fee and binding of 2 copies of the thesis/dissertation. If you do not complete the degree requirements by the designated deadlines in that semester, you may register again for Exam Only in the following semester/term. If you do not complete the degree requirements by the designated deadlines, but do complete them before the end of the semester, you may register for "**Diploma Only"** for the following semester/term.

Semester you plan to graduate

- Read the instructions in the Dissertation Instructions manual for writing and formatting your dissertation.
- Obtain approval from your committee prior to scheduling your defense date. Two weeks before your final oral defense date, submit the signed Dissertation Defense Request form to the School of Graduate Studies Office.
- Post public announcements of your public oral defense/seminar around campus two weeks before the defense date.
- Following a successful oral defense and approval of your dissertation/thesis, obtain signatures of your committee members on the final dissertation/thesis Final Examination form and submit to the School of Graduate Studies Office on or before the deadline for submission as defined in the Academic Calendar.
- Register with ProQuest and submit your dissertation/thesis in PDF format through the ProQuest publishing portal .Before submission, you should meet with your advisor to decide:
    - whether you want to use the traditional publication method or the open source method ($55 additional fee for open source (?)).
    - whether you should have your dissertation held for 6-24 months prior to release (embargo). This might be important if your dissertation is part of a pending patent application or disclosure.
    - whether you want to submit your dissertation for copyright. This is not normally done, because often all or portions of dissertations are published in journals that maintain the copyright or because a portion of the data in your thesis was carried out by another individual.
    - whether you want to order additional bound copies of your thesis through ProQuest. More formats are available than through the Graduate School, including both soft and hard cover binding and a smaller 6 x9 in size, but the cost for such copies is significantly higher than for those provided by the Graduate School bindery.
- When you have submitted your dissertation though ProQuest, it will be reviewed by the Graduate School for proper formatting. If errors are found, you will be required to modify the dissertation.
- Submit at least two copies of your final dissertation/thesis (one on bond paper) after your ProQuest submisson has been accepted by the Graduate School. The copies must be in the Graduate School office **BEFORE** the submission deadline (Graduate School Academic Calendar). The library keeps the bond copy, you are given one copy and you may want to

provide additional copies for yourself, your department, your mentor, and/or your committee members.
- Complete and submit the graduation documents provided by the Graduate School, including the Survey Earned Doctorate (SED) exit survey, clearance form and thesis/dissertation distribution list. Final approval requires return of the Survey Earned Doctorate (SED) survey form to the Graduate School office. You must provide a forwarding address and permanent email address
- Schedule an appointment for an exit interview with the Associate Dean, School of Graduate Studies.

Instructions for Participating in Commencement Ceremonies

- Notify the Graduate School Office that you will be participating in the commencement ceremonies at least one month prior to the ceremonies.
- Order your cap and gown through the LSUHSC-S bookstore well before the commencement date. The bookstore will need information from you such as height and hat size. There will be no charge to you for cap and gown rental.
- Pick up your cap and gown from the bookstore **BEFORE** it closes on the Friday before commencement.
- Pick up your PhD hood from the Graduate School Office **BEFORE** it closes on the Friday before commencement. Graduates who participate in the May commencement may obtain their hoods at the awards breakfast on the morning of commencement.
- Commencement is held once a year, in May . We hope that you will participate.
- Leave your cap and gown at the commencement location after the ceremony, but PhD graduates keep their hoods.

Dual Degree MD-PhD Program

PURPOSE

The MD-PhD Program promotes the education of physician scientists through dual enrollment in the School of Graduate Studies and the School of Medicine in Shreveport in a more efficient and productive sequence than could be accomplished otherwise. The integration of clinical studies and research throughout the program is designed to encourage graduates to apply for Physician Scientist Training Programs (PSTP) residencies programs and to pursue research and education in a clinical setting throughout their careers.

ADMINISTRATION

- Co-Directors from the School of Graduate Studies and the School of Medicine will be appointed by the Deans of the Medical School and Graduate School, respectively.

- A Project Coordinator will directly administer the program.

- An MD-PhD Supervisory Committee, consisting of administrators and faculty from both schools, will be responsible for approving the admission of applicants to the program, ongoing development of integrated courses and procedures within the program, and facilitating the progress of students through the program. The Supervisory Committee consists of six members, three appointed by the Dean of Graduate Studies and three appointed by the Dean of the School of Medicine. Ex officio members will include the Provost, Registrar, and the Associate Deans of Admissions, Academic Affairs, and Student Affairs in the School of Medicine, or their designees.

- An Admissions Committee consisting of four faculty and one MD-PhD student will interview applicants and make admission recommendations to the Supervisory Committee. Membership will consist of two PhD research scientists and two physician scientists who will be appointed by the Co-Directors.

The term of appointed members is indefinite. At least semi-annually, the Supervisory Committee will meet to review and approve applications, to monitor and facilitate student progress through the program, and to resolve potential conflicts. Special meetings may be called at the request of the Directors or by request of any two members with the approval of a majority of the members. Minutes of all meetings will be recorded and maintained by the School of Graduate Studies. All meetings will be conducted in accordance with Robert's Rules of Order (Revised).

Application and Admissions Process

Applicants to the MD-PhD program will apply to medical school and select the option for the MD-PhD program. Applicants selected for an interview by the Medical School Admissions Committee will also interview with the MD-PhD Admissions Committee. Admission to the MD-PhD program requires acceptance by both the MD and MD-PhD Admissions Committees. Students who have matriculated into medical school also may apply for admission to the MD-PhD program, but no later than the end of the fourth semester of Medical School.

Matriculation

MD-PhD student records will be maintained by the Registrar and in the School of Graduate Studies and the School of Medicine. Registration will proceed in a manner determined by the LSUHSC-Shreveport Registrar. Fees to be paid to either or both schools will be determined by the School of Graduate Studies and the Registrar.

Students who apply to the program will be eligible for loans, grants, scholarships, tuition waivers, stipends, and/or or other financial aid from the respective schools. Students enrolled in the MD-PhD program will register in the Graduate and/or or Medical School as appropriate. If at any time a student is registered in both schools and it is necessary that they be considered to be enrolled in one school for specific purposes, such as loans, scholarship eligibility grants, etc., they will be considered to be enrolled in the School of Medicine for the first three years of the program. Further, they will be enrolled in the School of Graduate Studies commencing with the fourth year of the program through the completion of the requirements of the PhD degree, and in the School of Medicine thereafter. Other appropriate enrollment designations may be made by the MD-PhD Supervisory Committee as needed, and in the best interests of the student and the University.

Program Structure Overview

The overall structure is outline in the figure below. Students enter the MD-PhD program in June with a week-long orientation followed by a month-long lab rotation. In August, they enter medical school and complete 18 months of preclinical course work ending in April of their second year in medical school (see figure below). The USMLE STEP1 Exam is taken in May or June, followed by the third year of medical school (clinical rotations). After completion of the USMLE STEP 2 Exam, students matriculate into the School of Graduate students to conduct their PhD research. Following a successful defense of their PhD dissertation, students return to the clinic to complete their final year of medical school.

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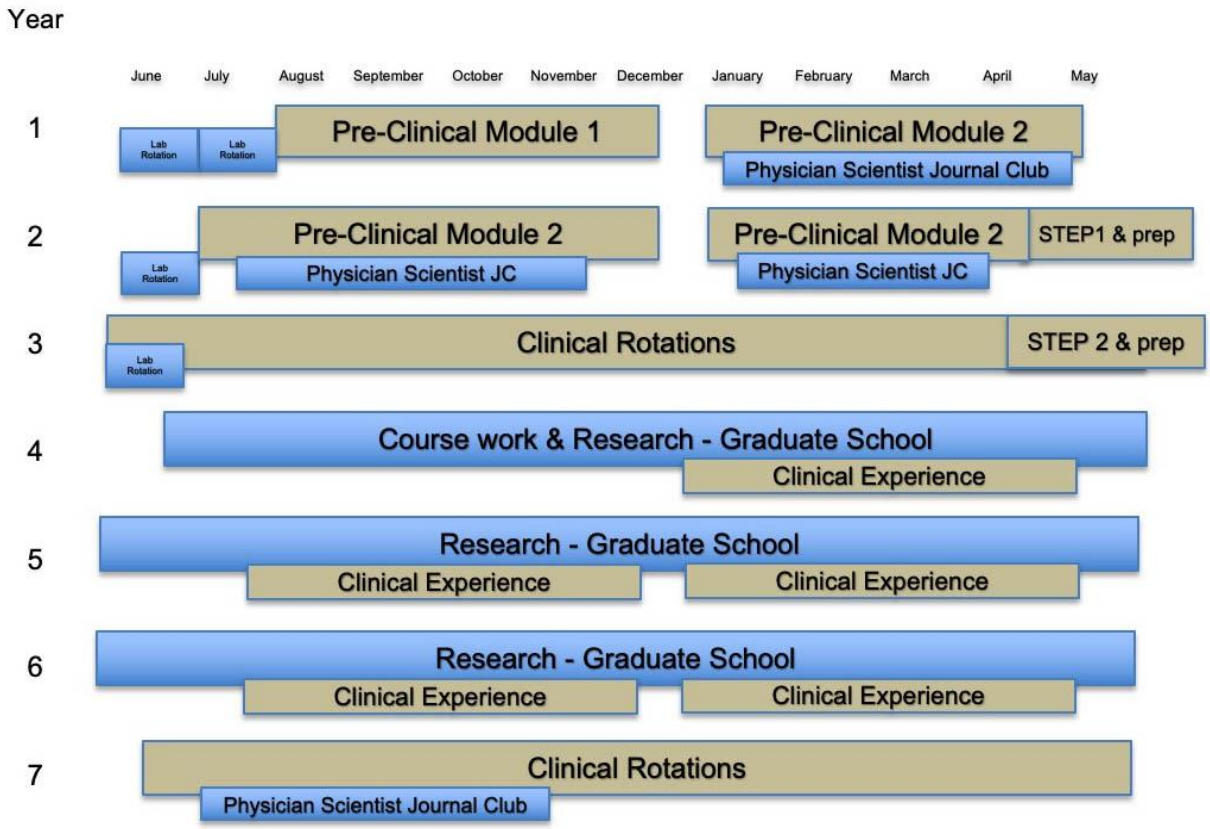

Medical School – Years 1- 3

The first three years in medical school are critical in directing students toward a physician scientist career. In addition to fully participating in the medical school curriculum, students must choose a research area and select a medical specialty for residency. To help guide their decision making, students in the third year of medical school choose a physician scientist clinical advisor. This advisor also serves as part of the student's PhD Dissertation Committee. Two additional programs are unique to the MD-PhD program:

- **Physician Scientists Seminar and Journal Club**
  - The bimonthly seminars introduce students to the scientific literature and recent developments in different medical specialties. Participation includes physician scientists throughout the campus, thus providing a greater sense of community to a relatively small cohort of MD-PhD students.

- **Research Lab Rotation Program**
  - To inform students of campus research opportunities, students complete at least 3, four week lab rotations in their first three years. It is recommended that one or two of these rotations are taken in the summer prior to matriculation into medical school. Other opportunities are available during the one month break between the first and second years, after completing STEP 1, and if necessary, after the STEP 2 before entering graduate school.
  - Rotations in two different labs are mandatory; however, repeating a rotation in the same lab is encouraged after a decision has been made about a research project. Students write a F30 Fellowship Proposal by the end of their first year in graduate school (year four in the program). Of importance is the selection of a research mentor before the end of year three to assist with completion of the fellowship application.

- **Clinical Mentor**
  - in addition to selecting a research lab, students will select a clinical mentor. This is a member of the Medical School Faculty in the students chosen specialty. Ideally, this would occur concurrently with choosing a research mentor, but could occur during the first year of the PhD program.

PhD Program – years 4-6 (7)

After completing the USMLE STEP 2 Exam, students select a research mentor and then enter the graduate program of that mentor's department. Mostly, students follow the requirements of the PhD program; however, the following features distinguish the MD-PhD from the PhD program:

- **Reduced Graduate School Didactic Course Requirements**
  - 20 credit hours are required for graduation instead of 32, and only five of these must be taken for a letter grade. Also, passing the USMLE STEP 1 Exam substitutes for passing the departmental qualifying exam.

- **MD-PhD Advisory Committee**
  - After choosing a mentor, the student and their mentor will select at least four additional Thesis Advisory Committee Members. One member of the committee should be from outside LSUHSC-Shreveport. If the mentor is a basic science researcher, at least one member of the committee should be the student's physician-scientist clinical advisor. The thesis advisory committee meets semi-annually to track student progress and additionally to judge the student's preliminary exam and final dissertation defense. Following completion of the PhD, the student continues to meet with the advisory committee for advice on selecting clinical rotations and for selecting a residency program.

- **Clinical Experience in Graduate School**
  - To obtain clinical competencies during their research years and to ease the transition into the clinic following the completion of the PhD, students will take a patient centered medical course (Clinical Experience in Graduate School) for at least three semesters during graduate school. Students will work one-on-one with their clinical mentor for at least 40 hours/semester (10 half day sessions or the equivalent). Additional mechanisms for experience may be possible, with guidance from the MD-PhD Supervisory Committee.

- **Preliminary Exam and Fellowship Proposal**
  - Students will submit a F30 NSRA Fellowship proposal before the end of their eligibility (first year of Graduate School). Applications may also be submitted to private, non-federal programs, depending on the research topic (see Appendix for list of foundations that support MD-PhD programs). To prepare for the F30 submission, students will take a grant writing course in the fall of their first year in Graduate School. The written and oral defense of a research proposal in the spring of their first year will constitute the Preliminary Exam. The F30 fellowship application will be submitted following the successful defense of the proposal.

- **Annual MD-PhD Student Conference**
  - Students are encouraged to participate in the The annual National MD-PhD Student Conference every year of Graduate School.

Medical School – Year 7 (8)

Following successful defense of their PhD Dissertation, students return to the clinic to complete optional clinical rotations. If time permits, students are encouraged to continue to participate in their research by attending scientific meetings and to complete studies or manuscripts.

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Academic Progress

At least quarterly, students in all stages of the program will meet as a group with the MD-PhD directors and the project coordinator to discuss programmatic or administrative issues. This meeting also provides a venue for senior students to advise and informally mentor junior students. MD-PhD directors will meet with the Medical Curriculum Council and Graduate Advisory Council following the quarterly review to inform the schools on student progress, issues, and achievements.

Students are expected to remain in good standing throughout their enrollment in medical and graduate school. A failing grade in any course in medical school or a "C" in any graduate school course will place the student in academic probation. Upon review by the MD-PhD Supervisory Committee, the student may be dismissed from the MD-PhD program.

Students will be continuously enrolled in the MD-PhD program until the requirements for both degrees are completed or until withdrawal or dismissal from the program.

The program should be completed within 7-8 years. Only under special circumstances, and with the approval of the MD-PhD Supervisory Committee with conditions stipulated, may students be allowed more than 8 years to complete the program. Degrees will be awarded by the respective schools upon completion of both program's degree requirements.

Students seeking to withdraw from the program will petition the MD-PhD Supervisory Committee. After consideration of the student's request and other relevant information, the committee will make recommendations to the respective schools. Further action will be taken by the appropriate school.

Financial Support

- Students who apply to and are accepted directly into the MD-PhD program will be provided with tuition waivers throughout their training.
    - During the first three years and the last year of the program, an in-state tuition and fee waiver will be provided by the School of Medicine.
    - During the period that students are in graduate school, a waiver will be provided by the School of Graduate Studies.

- In addition, students will receive a scholarship while in medical school and a stipend in graduate school. The current annual stipend amount is $26,000.

- Medical students accepted into the program after matriculating into medical school will receive a tuition waiver and scholarship the semester after their acceptance.

- Students who leave the dual degree program but remain in medical school are expected to repay the tuition remission.

- All forms of institutional support may be terminated for any student who does not maintain acceptable grade point averages in the respective schools or who otherwise does not perform in a satisfactory manner in the schools or the program. Any instance wherein support could be terminated will be reviewed and approved by the MD-PhD Supervisory Committee prior to notification to the student.

- All support provided for this program will be contingent on the availability of funds.

Students seeking to withdraw from the Medical School portion of the program, but to continue in the PhD program, must reapply to the PhD program through the Department admissions process and must be accepted by the Department and the School of Graduate Studies. Medical School courses in which the student has received a passing grade may be transferred to the Graduate School curriculum at the discretion of the Departmental Admissions Committee.

Students who choose to not complete the program will reimburse the institution for funds expended on their behalf, as shown in the MD-PhD Schedule of Fees and Tuition.

Approval and Modification

Approval of and modifications to the program description may be made upon recommendation of the MD-PhD Supervisory Committee and with approval of the Deans of the School of Medicine, the School of Graduate Studies, the Provost and the Chancellor of the Health Sciences Center. After acceptance of any modifications to the program description, this document will be changed appropriately and distributed to the faculty of both schools.

Clinical and Translational Distinction Track (CTDT)

All instructions and required forms can be found on the CTDT Graduate School Moodle page.

Goals:

Graduate students participating in the CTDT Program will:

1. Gain exposure to, and experience in, clinical research environments that will enhance their awareness of
    a. Unique challenges faced by clinical research physicians
    b. The need for clinical and basic science collaboration in successful clinical and translational research
2. Gain an appreciation for how recent/relevant basic research findings are disseminated and implemented within the clinical environment
3. Improve communication skills through designing and implementing informational presentations to professional colleagues or the general public.

Declaration of Participation

- A letter of nomination must be submitted to the CTDT Coordinator or Advisor and the School of Graduate Studies at any time after the graduate student has been approved as a PhD candidate.
    - The student must obtain this letter of nomination from his/her Dissertation Research mentor, indicating permission from the mentor as well as the Department Head.
    - The student will be notified of acceptance into the program in writing by the CTDT coordinator.

Clinical Research Mentor

- The student will be responsible for identifying a clinical faculty member actively engaged in clinical research who will agree to act as the student's clinical research mentor. The CTDT coordinator and advisor may provide assistance in identifying the clinical mentor.
- The clinical mentor will be responsible for providing the student with opportunities for participation in the clinical research environment.

- A letter of agreement between the student and the clinical research mentor that includes a defined plan and timeline will be submitted to the CTDT Coordinator, the Graduate School, the student's dissertation mentor and the student's Department Head.

Student Commitments and Responsibilities

I. Seminar

- During their time in the program, all students will be required to attend a monthly clinically oriented seminar (for example, Grand Rounds, or clinical seminars sponsored by the Feist-Weiller Cancer Center or The Center for Cardiovascular Diseases and Sciences)
- A total of approximately 2 hours of dedicated time per month is required for the seminar aspect of this program, and attendance must be documented on the appropriate form.

II. Clinical Experience

- Students are required to spend 15-20 hours of one semester in the clinical research environment, in a capacity determined by their clinical research mentor.

III. Collaboration Experience

- The student is required (once) to partner with a medical student who has done a basic science research project (e.g., summer research or RDT student) to help them prepare a poster for presentation. Ideally, this medical student will have engaged in research related to the CTDT participant's dissertation research.

IV. Capstone Project

- CTDT students will complete one of the following Capstone Projects:
  1. Create and present a seminar, Grand Rounds presentation, or other presentation in a professional setting that addresses an aspect of clinical/translational research (ongoing clinical trials, drug discovery, human research, etc.)
  2. Create an informative/educational presentation on a medical condition, medical screening or research opportunity, to be presented in at least one public setting (health fair, disease-specific support group or class, community meeting, etc.).

Completion of Program

- Completion of all requirements must be documented by completing the appropriate forms and submitting these to the CTDT Coordinator or Advisor, the Department Head and the Graduate School.
- The clinical research mentor must complete the form certifying the student's completion of CTDT program requirements.
- Copies of this letter must be submitted to the student's department head, the student's dissertation mentor, the Graduate School and the CTDT Coordinator or Advisor, who will notify the Registrar of program completion.

Clinical and Translational Distinction Award

- Following verification of program requirement fulfillments, recognition of completion will be noted on the student's transcript.

Withdrawal from the CTDT

- Students who wish to withdraw from the CTDT Program may do so at any time without penalty by notifying their clinical research mentor, their Department Head, their dissertation mentor, the Graduate School and the CTDT Coordinator or Advisor in writing.
- Students who do not-complete all program requirements will not be awarded CTDT recognition, but no penalty will be administered.

Dissertation Awards

These awards are presented annually at the time of the spring commencement. Selection of the awardees is based upon research performance, as judged by the quality of the dissertation and related research accomplishments while a student. Selection of award recipients is made by a committee of faculty members appointed by the Associate Dean of the Graduate School.

- **The Chancellor's Award**—A cash award of $500 and an inscribed plaque. This award was established on the Shreveport campus by the Chancellor of the Health Sciences Center - Shreveport in 2001.
- **The Dean's Award**—A cash award of $400 and an inscribed plaque. This award was established by the School of Graduate Studies in Shreveport in 2001.

GOVERNANCE

GRADUATE ADVISORY COUNCIL

The Graduate Advisory Council (GAC) consists of the Dean, School of Graduate Studies, the Heads of the five Basic Science Departments, the Graduate Program Director of each Department and two faculty members elected at-large from the Graduate Faculty. Also included are a PhD and MD-PhD student representatives. The GAC determines policies for the Shreveport campus, School of Graduate Studies and oversees membership in the Graduate Faculty. The 2020-2021 members are listed in Appendix A.

GRADUATE FACULTY

The LCME and SACS accrediting boards mandate that membership in the Graduate Faculty be overseen by the Graduate Advisory Council. Membership in the Graduate Faculty is required to be the major advisor to a graduate student and to serve on graduate student dissertation advisory committees. Full members have served as the major advisor for a PhD graduate. Associate Members have not graduated a PhD student. Faculty who are not members of one of the Basic Science Departments are Affiliate members. The 2020-2021 members of the Graduate Faculty are listed in Appendix B.

GRADUATE STUDENT COUNCIL

The Graduate Student Council consists of one representative from each of the Basic Science Departments. These representatives are elected by the students in their respective Departments and may serve for 1-2 year terms. The Graduate Student Council meets regularly with the Associate Dean of the School of Graduate Studies to discuss issues related to graduate education and policies of the School, plan events such as Graduate Research Day and perform other business. The Council elects a representative to be a member of the Graduate Advisory Council. The 2020-2021 members of the Graduate Student Council are listed in Appendix C.

STUDENT EXECUTIVE COUNCIL

Both graduate students and medical students are members of the LSUHSC-Shreveport Student Executive Council. This council meets to discuss student concerns and to organize and plan social events. The Executive Council is responsible for upkeep of the student lounge, exercise room, and the Student Union. The Council receives its operating funds from a portion of the university fees designated for student activities. The members of the council are elected by students for one year terms in their respective schools and serve as liaisons to those students. The Executive Council meetings are held monthly. Students are encouraged to become involved with the council and all suggestions and recommendations are welcomed. Ms. Laura Mackowiak in the Office of Medical Student Affairs (B1-204) is the contact person.

LIBRARY COMMITTEE

The institutional Library Committee meets on a regular basis to address issues relating to selection of books and journals, computer resources and other library functions. Two graduate students serve on this committee.

PARKING COMMITTEE

The institutional Parking Committee meets monthly to address issues related to campus parking of faculty, staff and students. One graduate student serves on this committee.

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Student Services

LSUHSC-S STUDENT HEALTH PROGRAM

Medical Care and Health Insurance:
All students are required to maintain comprehensive health insurance while enrolled in a graduate program. The Office of the Registrar coordinates the Student Health Program for graduate students and will answer questions about the Student Health Program. Insurance must cover the student for the entire semester for which the student is registered. Non-compliance at any time during a student's enrollment may result in suspension and/or dismissal. Options include:

Option 1. LSUHSC-S employee health insurance plans (in these plans, insurance premiums are automatically deducted from the monthly stipend). **These plans are the most comprehensive and are recommended for most students.** Information is available in the Benefits Office (675-5632).

- **LSUHSC-S employee and Option 2 require the completion of an online waiver form** (available from the Registrar) that states that student's health insurance will be maintained for the semester through either the employee plan or another outside plan. All outside plans must meet the Patient Protection and Affordable Health Care Act guidelines. An e-mail message with instructions will be sent to the students from the Office of the Registrar

Option 2. Outside plans, such as those from a spouse or family member though which you would be covered, or those covering specific groups of students.

Option 3. The United Health Care plan, coordinated by Gallagher Health, does not require a waiver.

Student Health Services
The Student Health Program provides limited primary care and counseling services to all LSUHSC students. For anything beyond the listed services, students should check with their individual insurance company and make an appointment with an approved provider.

- Eligible students or dependents in need of acute medical care during routine work hours (7:00 am – 4:30 pm, Monday - Friday) can go to the Occupational Health Clinic on the third floor in the Comp Care building (Ph. 675-6281). A designated Student Health Nurse in the Occupational Health Clinic will see students and evaluate them first and then contact the Chief Internal Medicine Resident to see the student, as necessary.
- Emergency care is available 24 hours a day at the Ochsner LSU Health Shreveport Emergency-Trauma Center at the corner of Kings Highway and Linwood.
- Immunizations: Student/Employee health will handle student immunization records, updating of student immunizations, post-exposure chemoprophylaxis (needle-stick), TB testing, on the job injuries etc. The Student Health Clinic will also provide flu immunizations for students, free of charge, at the appropriate time of year.

Student Mental Health Services
Mental health and Counseling services are available at the LSU Health Shreveport Student Success Center, located at 820 Jordan Street, Shreveport. Mental Health Counseling is provided to all students,

free of charge. A strict confidentiality policy is upheld by all parties. Visits with professional staff can be scheduled at (318) 676-5002. Staff can also be reached in an emergency at (903) 407-2000.

Graduate School Office

- Provides information and assistance to all graduate students and faculty.
- Forms for Graduate School requirements are available on the Graduate School Moodle page

Associate Dean: Kelly Tatchell, PhD (318) 675-7572 kelly.tatchell@lsuhs.edu
Project Coordinator: Ms. Lisa LaChance, MBA (318) 675-7674 lisa.lachance@lsuhs.edu
Coordinator: Ms. Chanda Maguigan, (MS) (318) 675-4704 chanda.maguigan@lsuhs.edu
Location: Room F1-32A/B BRI
Hours: 8:00 a.m. to 5:00 p.m., Monday through Friday
E-mail: shvgraduatestudies@lsuhsc.edu

Student Access Cards: Each student must have an ID/ACCESS card to enter the Health Sciences Center after hours. Cards are issued in the Parking Office on the first floor of the Administration building, Room 123. Access to individual floors in the Biomedical Research Institute (BRI) can be obtained through Ms. Sha Williams (675-7580, Room F1-50) on the first floor of the BRI building. **All persons associated with LSUHSC-S must wear their ID/ACCESS cards when on LSUHSC-S property.**

- **Annual Graduate Student Events**
  - **Fall Welcome** is held in mid-August to welcome new students. Short research presentations are given by students. These are followed by an invited talk by an alumnus of the Graduate School. Pizza and beer in the Student Union follows that talks.
  - **Graduate Research Day** is an annual event held near the end of the spring semester. Activities include research talks by senior students and a postdoctoral fellow, and poster presentations by students and postdoctoral fellows. There is a competition for best poster in several categories and winners are awarded cash prizes. The highlight of the day is a presentation by the keynote speaker (chosen by the students), who addresses potential career opportunities for graduates. Following the scientific sessions, a Louisiana crawfish boil is held at the Student Union. The event is organized and produced by the graduate students, who are led by Graduate Student Council Members.

- **Travel**
  - **Travel Awards** Full-time students enrolled in the PhD program are eligible to receive travel awards to attend scientific meetings. Each student is eligible to receive one award per academic year. Prior to making travel arrangements, the student must submit a Request for Student Travel Funds form,a signed Prior Approval Request for Travel Form and a copy of the abstract they will be presenting at the meeting. The student must be the first author and the presenter of the abstract. The Graduate School will match up to $500 for a student's travel expenses. Additional funds must be provided from other sources and the sources must be indicated on the form. Only students who attend and participate in Graduate Research Day activities are eligible for travel awards.
  - For official in-state business travel by automobile of less than 99 miles round trip, a personal vehicle may be used, with mileage reimbursed at $ 0.51 per mile. For automobile travel greater than 99 miles round trip, arrangements must be made to

rent a car through Enterprise Rent-A-Car's State Motor Pool Rental Contract. All commercial airline tickets must be purchased through Short's Travel Management (phone: 888-846-6810; fax: 319-433-0847; www.shortstravel.com/la). All travel policies are available on the LSUHSC-S website.

- After returning from the meeting, a completed Travel Expense Voucher form (available on the LSUHSC-S web site provide link?) must be returned to the individual Departmental Offices within 10 working days.

- **Procurement Card usage**
  On occasion, graduate students may need to purchase items for their research projects or for student activities from local vendors. Such items may be purchased using the procurement card for the School of Graduate Studies. The student should consult with staff in the Office of Graduate Studies to obtain use of this card.

- **Short-term emergency loans** are available to graduate students through the Office of Graduate Studies, Yang Fang Memorial Fund. Up to $500 may be borrowed with no interest for up to 90 days. After 90 days, a 10% penalty is charged. Loans to students enrolled for the first time for the fall or spring semester may be considered by petition to the Dean. Loans MUST be repaid in full prior to registration for the subsequent semester in the program. **No loans will be given during the final semester of enrollment in the program.** Lisa LaChance, Coordinator for the Office of Graduate Studies, has information on these funds.

Registrar

- Official transcripts and enrollment verification
- Transcript request forms, course add/drop forms
- Academic Calendar and student catalogs
- Student Health Insurance Information
- Student Self-Service Portal
- Louisiana Voter Registration

Registrar: Kimberly Carmen, MBA (318) 675-5205
Location: 1-212 (First floor, "B" Building)
Hours: 8:00 a.m. to 4:30 p.m., Monday - Friday
E-mail: Registrar@lsuhs.edu

Medical Library

The primary mission of the LSU Health Shreveport Health Sciences Library is to educate users to employ the skills and knowledge needed to effectively utilize biomedical information resources in support of the institution's mission to teach, heal, and discover. Services include:

- Inter-library Loan
- Writing consultants
- Classes and Searching Guides
- Off-Campus access (VPN)
- Statistics Software (SPSS)

Will Olmstadt, MSLS, MPH, AHIP; Executive Director will.olmstadt@lsuhs.edu
Julia Esparza, MLS, AHIP; Associate Director Julia.Esparza@lsuhs.edu
Phone (318) 675-5445
Location: 1st Floor C building- Across from Auditorium
Covid-19 Phase II Hours: 9:00am-5:00am, Monday - Friday
E-mail shlibref@lsuhsc.edu

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Student Financial Services

Office of the Bursar

- Processes excess Financial Aid
- Receives all payments
- Administers tuition and fee payments

Office of the Bursar (318 675-5224)
Location: B1-218
Email: shvbursar@lsuhsc.edu

Office of Financial Aid

- Verification of academic and financial eligibility for loans and tuition waivers
- Authorize the release of funds

Office of Financial Aid (318 675-5561)
Location: Administration Building 4th Floor, Room 405
Email: shvfinaid@lsuhsc.edu

Diversity Affairs

- The Office of Diversity Affairs is dedicated to providing equal opportunity and assisting those who have traditionally been on the outside looking in.
- The Office of Diversity enhances the diversity of the health sciences center by assisting in the recruitment and retention of underrepresented minority students into the schools of medicine, graduate studies, and allied health professions.
- The office provides services and programs to students including academic and/or personal counseling

Toni Thibeaux, ABD, MPH (318) 675-5050
Assistant Vice Chancellor for Diversity Affairs
Email:toni.thibeaux@lsuhs.edu

Gwendolyn R. Miller, MA, MBA(318) 675-5049
Coordinator for Diversity Affairs
Email: Gwendolyn.royalmiller@lsuhs.edu

The Public Safety Department and University Police

The Public Safety Department provides police, security guards and communications officers for the Health Sciences Center. The safety and security of all students, faculty, employees, patients and visitors at LSUHSC-S are of utmost importance. The Public Safety Department, in conjunction with the other LSUHSC-S departments, strives to provide a safe campus. However, a truly safe campus can only be achieved through the cooperation of all persons who use, visit and work on the campus. You can contribute to a safe environment by supporting your University Police Department in its efforts and by utilizing preventative measures to reduce the opportunity for criminal acts.

- LSU Shield mobile app is available for all students
  - summon emergency services by mobile phone with a single button
  - submit non-emergency reports, including photos and video
  - two-way chat with LSU Police
  - submit information anonymously
- Escort service from campus to a parking lot by calling (318) 675-6165
- Lost and Found collection point (318) 675-6165

- Motorist assistance, including jump-starting vehicles and contacting emergency road service

Director:	Vaughn Burris E-mail Vaughn.Burris@lsuhs.edu
Location:	Room 1-129 Administrative Building
On campus emergency calls:	(318) 675-6165
	(318) 675-6233
CRIME HOTLINE:	(318) 675-3873 (53-UPD)
Hours:	24 hours a day, seven days a week

The Campus Sex Crimes Prevention Act

Prompt reporting of sex offenses to the University Police is encouraged. While some may not think of forced sexual relations as rape, such action constitutes a serious crime and is a felony under LA Law. University Police will vigorously investigate all reports of sexual assault occurring within their jurisdiction and will help victims of sex assault off campus to contact the appropriate law enforcement authorities. Further assistance is available from the Dean of Students or the YWCA crisis line (318) 425-3628. Each institution must inform members of the campus community where they may obtain information concerning registered sex offenders who may be present on campus. The Louisiana State Police Sex Offender and Child Predator Registry may be found at: http://lsp.org/socpr/disclaimer.html or by calling (800) 858-0551.

SAVE (Sexual Assault and Violence Education Program)

LSU Health Shreveport recognizes the need for improved safety measures for our students. The SAVE Program is a Sexual Assault and Violence Education Program that provides resources to all students, faculty and staff on campus. This education and prevention program provides an avenue to increase the level of awareness of our students and provide them with the tools and resources needed in the event of a crisis. More specifically, the goal is to increase awareness and reduce the risk of faculty, students, staff or visitors from becoming a victim of sexual assault, domestic or dating violence and stalking.

SAVE Program Office

Location:	School of Allied Health Professions
	1450 Claiborne Avenue
	Room 3-344
Phone	(318) 813-SAVE (7283)
Email	shvSAVE@lsuhsc.edu
Office hours	8:00AM-4:30PM, Monday-Friday

Staff are available before and after hours upon request and can meet at other locations by request. All services are CONFIDENTIAL.

Office of Student Activities:

The Office of Student Activities operates under the supervision of the Assistant Dean for Student Affairs for the Medical School. The primary function of this office is to coordinate extracurricular activities for all medical students and some activities for graduate students. Major annual events in the Medical School include a Halloween Costume Party, the Christmas Party, and the Crawfish Boil. The office of Student Activities also works closely with such medical student organizations as the Executive Council and the Pulse (the LSUHSC-S yearbook), and it supervises the election of all Medical School class and Executive Council officers.

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Print Shop

Full-service printing and copying needs

- dissertations and theses (will print on Bond paper required by the Grad School
- posters and flyers
- announcements

Manager: Mr. Kevin Hayes
Location: Southwest of K Wing, near Physical Plant
Telephone: (318) 675-5040
Hours: 8:00 am to 4:30 pm
E-mail: shvprintshop@lsuhsc.edu

Medical Communication

Offers art production services including

- large format poster printing
- portraits and application photographs
- Booklets & Brochures
- Business cards
- Scanning of photographs and slides
- LSUHS logos

Director: Lisa Babin
Administrative Assistant Ginger Savage E-mail: gsavag@lsuhsc.edu
Location: Building C, Room 2-424
Telephone: (318) 675-5260
Hours: 8:00 am to 4:30 pm

Student Union

The LSUHSC-S Student Union contains kitchen facilities, entertainment center (television, VCR and DVD) and space for students to study and relax. The student access card for the Medical School building will also access the Student Union. Union reservations can be made through School of Medicine, Student Affairs - Ms. Laura Mackowiak (318) 675-5341. The regulations required for the use of the Union for student events are listed in appendix D

Campus Bookstore

- textbooks
- supplies
- greeting cards
- apparel
- graduation cap and gown rental

Location: G-209 (Ground Floor, "B" Building)
Telephone: 318-675-5020
Hours: 7:45 a.m. to 4:30 p.m., Monday - Friday
Email: mjohns@lsuhsc.edu

Post Office/Mailroom

- letter and package mailing

Location: G-314 (Ground floor, "B" Building)
Telephone: 318-675-5045
Hours: 9:00 a.m. to 4:30 p.m., Monday – Friday

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Campus Federal Credit Union

- Full-Service Banking
- Safe Deposit Boxes
- ATM

Location: Ground floor of Hospital Complex (318) 415-2430 toll free (888) 769-8841
Hours: 8:00 a.m. to 4:30 p.m., Monday through Friday

RESEARCH

Research Core Facility (RCF):

The Research Core Facility at LSU Health Shreveport provides investigators, post-doctoral fellows, and graduate and undergraduate students with access to a wide variety of research services, educational/training opportunities and state-of-the-art biomedical technologies. Located on the 6th floor of the Biomedical Research Institute, each technology is staffed by a trained research specialist. These technologies include cellular metabolism analysis, flow cytometry, laser capture microdissection, mass spectrometry, microarray, fluorescence, confocal, super resolution and spinning disk confocal microscopy, next generation sequencing, and real-time PCR. The Research Core Facility provides assistance with all aspects of these technologies, including experimental design, protocol optimization, instrument operation and data analysis.

Each instrument in the RCF is supported by a Research Specialist and is overseen by an LSU Health Shreveport Scientific Advisor. Individuals wishing to access these services are encouraged to contact us.

Research Core Facility Staff:

Kelly Tatchell, PhD	*Director*	kelly.tatchell@lsuhs.edu	(318) 675-7572
Paula Polk, MS	*Assistant Director*	paula.polk@lsuhsc.edu	(318) 675-4939
Camille Abshire, MS,CLS	*Research Specialist*	camille.abshire@lsuhs.edu	(318) 675-4174
David Custis, MS	*Research Specialist*	david.custis@lsuhs.edu	(318) 675-4174
Chaowei Shang, PhD	*Research Specialist*	chaowei.shang@lsuhs.edu	(318) 675-8537
Xinggui Shen, PhD	Mass Spec Specialist	xinggui.shen@lsuhs.edu	(318) 675-3371

Technologies available in the RCF

CELLULAR METABOLISM

Research Specialist: David Custis, MS
Scientific Advisor: Dr. Sumitra Miriyala
Location: BRI F6-14

FLOW CYTOMETRY

Research Specialist: David Custis, MS
Scientific Advisor: Dr. Matthew Woolard
Location: BRI F6-14

LASER CAPTURE MICRODISSECTION

Research Specialist: Camille Abshire, MS, MDXT-(AAB), CLS (LSBME)
Scientific Advisor: Dr. Rona Scott
Location: BRI F6-13

MASS SPECTROMETRY

Technical Staff: Dr. Xinggui Shen
Scientific Advisor: Dr. Chris Kevil
Location: BRI F6-12

MICROARRAY

Research Specialist: Camille Abshire, MS, MDXT-(AAB), CLS (LSBME)

Scientific Advisor: Dr. Rona Scott
Location: BRI F6-15

MICROSCOPY
Research Specialist: Dr. Chaowei Shang
Scientific Advisor*:* Dr. Kevin Lin
Location: BRI F6-13 and F6-50

NEXT-GENERATION SEQUENCING
Research Specialist: Camille Abshire, MS, MDXT-(AAB), CLS (LSBME)
Scientific Advisor: Dr. Rona Scott
Location: BRI F6-48

REAL-TIME QUANTITATIVE PCR
Research Specialist: Camille Abshire, MS, MDXT-(AAB), CLS (LSBME)
Scientific Advisor: Dr. Rona Scott
Location: BRI F6-51

Innovative North Louisiana Experimental Therapeutics (INLET)

The **Feist-Weiller Cancer Center's (FWCC)** INLET facility is a high-throughput high-content screening (HTS) facility focused on the discovery and development of drugs targeting cancer and other diseases. We provide expertise and protocol design for a variety of assays for biological research, including: Cell proliferation, Cell viability, Phagocytosis, Chemotaxis, Cell migration/invasion, 3D spheroid growth. INLET Core provides cutting edge, multiplexed functional imaging platforms to perform multi-well high-throughput live-cell imaging and analysis assays.

Ana-Maria Dragoi, MD,PhD Associate Director anamaria.dragoi@lsuhs.edu (318) 675-4216

Automated fluorescence microscopy imaging systems

Cellomics ArrayScan V IncuCyte Zoom

Research Centers

A select number of academic programs earn the designation as a Center of Excellence by the Louisiana Board of Regents. Centers of Excellence must demonstrate statewide leadership in their area of designation and be a hallmark for the institution. The selected centers share a strong performance record, concentration on an area relevant to the state's needs, a range of academic, training and research opportunities, engagement with the greater community, and a focus on issues and opportunities that improve the quality of life of Louisiana citizens. Three LSU Health Shreveport centers have earned this distinction: **Feist-Weiller Cancer Center of Excellence**, the **Center of Excellence for Arthritis and Rheumatology**, and the **Center for Cardiovascular Diseases and Sciences.**

Centers of Excellence:
- Feist-Weiller Cancer Center
- Center for Excellence in Arthritis and Rheuamatology
- Center for Cardiovascular Diseases and Sciences

Other Centers:
- Center for Brain Health
- Louisiana Addiction Research Center

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ACADEMICS AND CURRICULUM

Interdisciplinary Courses

IDSP107 Seminar in Biomedical Sciences (1 Credit S/U)

A weekly seminar program for IGP students. Students will attend the weekly seminar offered in one of the basic science departments each week of the fall and spring seminar. During the course of the semester, the specific seminar series attended generally will correspond to the program of the student's lab rotation mentor. Students are expected to participate in the discussions both semesters and to present a fifty-minute seminar during the spring semester. If no seminar is offered by the rotating department during a given week, the student is expected to attend a seminar in another department.

IDSP 108 Current Topics in Biomedical Sciences (1 Credit S/U)

A weekly journal club focused on current topics in Biomedical Sciences for students participating in the IGP program. Students will attend a journal club offered in one of the five basic science departments each week of the fall and spring semesters. During the course of the semester, the weekly journal club attended will correspond to the department/program of their current lab rotation mentor. Students are expected to participate in the discussions both semesters and to present a 30-45 minute journal club during the spring semester. If no seminar is offered by the rotating department during a given week, the student is expected to attend a journal club from another department.

IDSP 109 Research Rotations in Biomedical Sciences. (1 Credit S/U)

This course provides students in the IGP program credit for their efforts in laboratory rotations. To help identify a mentor and dissertation project, each matriculating student in the IGP program will rotate through up to five laboratories during the course of the first two semesters. Each rotation will be six weeks long. Once a mentor is identified during the second semester, the student will remain in the lab for the rest of the semester.

IDSP 110 Basic Biochemistry, Molecular and Cellular Biology I (3 credits, letter grade)

Course Director: Lucy Robinson, PhD (Dept.of Biochemistry and Molecular Biology)
When course is offered: Fall, Annually
Prerequisites: None
Textbook: *Biochemistry*, Voet and Voet, 4th Edition

Course Description: This course provides an introduction to the basic biochemical properties of amino acids and proteins, a discussion of protein assembly and folding into the three-dimensional structures required for function and an introduction to basic principles of enzyme kinetics, examples of enzyme active site structure and mechanism of action. Topics on membrane transport, carbohydrates and the important biochemical processes and enzymes that cells utilize to generate metabolic energy are also included in this section. The course concludes with a basic introduction to nucleic acids structure and function: replication, transcription, RNA processing and protein synthesis

IDSP 113 Genetics (1 credit, letter grade)

Course Director: Kenneth Peterson, PhD (Dept.of Microbiology and Immunology)
When course is offered: Spring, Annually
Prerequisite: IDSP 110
Textbook: *Molecular Biology of the Cell*, Alberts et al, 5th Edition

Course Description: This course will provide the student with an overview of classical genetics as well as an in-depth consideration of several fundamental processes involving DNA, including its recombination and repair. The course will also explore the emerging areas of genomics and proteomics. Lectures and discussions of the current literature will comprise the course.

IDSP 116 Methods in Biomedical Sciences: Biochemical & Molecular Methods (1 credit, letter credit)
Course Director: Donard Dwyer, PhD (Dept of Pharmacology, Toxicology and Neuroscience)
When course is offered: Fall, Annually
Prerequisites: none

Textbook: *Principles and Techniques of Practical Biochemistry*, Wilson & Walker, 5th Edition
Course Description: Methods in Biomedical Sciences is a discussion of principles and application of common methods used for detection and analysis of macromolecules and their structure, function, and interaction. This course covers biochemical methods of separation and detection of macromolecules as well as structural analysis. There will be some form of out-of-class work for many lecture topics, including problems, literature reviews and visits to core facilities and major equipment. The goals of the course are: to develop an understanding of basic methods applied to the study of proteins and nucleic acids; to become familiar with the instrumentation used for these methods (students should be aware of what instrumentation is required to use a particular method and have a basic idea how it is used), and to become aware of the ways that these methods and techniques are applied to biomedical study, i.e., understand what methods could/should be used to study a particular scientific problem. There will be one exam at the end of the course.

IDSP 117 Methods in Biomedical Sciences: Recombinant DNA & Cell Biology (1 credit, letter grade)
Course Director: Rona Scott, PhD (Dept.of Microbiology and Immunology)
When course is offered: Fall, Annually
Prerequisites: none

Course Description: Goals are the same as for IDSP 116. This course covers recombinant DNA methods, including cloning and gene expression, DNA sequencing, PCR, and mutagenesis. The course also covers analysis of nucleic acids and proteins, including interaction detection methods, genomics and proteomics and also covers direct observation methods of analysis and immunological methods. There will be one exam at the end of the course.

IDSP 118 Cell and Signaling (3 credits, letter grade)
Course Directors: Christopher Schmoutz, PhD (Dept. of Pharmacology, Toxicology and Neuroscience; Shile Huang, PhD (Dept. of Biochemistry and Molecular Biology)
When course is offered: Fall, Annually
Prerequisits: none
Textbook: *Molecular Biology of the Cell*, Alberts et al, 6th Edition

Course Description: An introduction to cellular signaling processes in eukaryotic cells, cell structure and the mechanisms underlying cell division and protein trafficking. The course will focus on the cell biology of the nucleus, regulation of the cytoskeleton, secretory pathways, endocytosis, protein targeting, ubiquitin-mediated proteolysis, apoptotic mechanisms, mechanisms of cell division and cell cycle control, the mechanisms involved in protein and membrane trafficking, and adhesion-mediated biology. Lectures and discussions of the current literature will comprise the course.

IDSP 119 Gene Expression (1 credit, letter grade)
Course Director: David Gross, PhD (Dept.of Biochemistry and Molecular Biology)
When course is offered: Spring, Annually
Prerequisites: IDSP 111, 112, 113, 114, 115

Textbook: *Molecular Biology of the Cell*, Alberts et al, 5th Edition

IDSP 123 Animal Models in Translational Research (1.5 credits, letter grade)
Course Directors: Christopher Schmoutz, PhD (Dept of Pharmacology, Toxicology & Neuroscience). Xiuping Yu, PhD (Dept. of Biochemistry and Molecular Biology)
When course is offered: Spring, Annually

Course Description: This course will discuss the theories and applications of laboratory animal models to study human diseases. The goal of this course is to give students a working knowledge of the use of animal models in research, types of models and how to choose for translational relevance.

IDSP 201 Introduction to Human Cancer-Research, Treatment & Prevention (2 credits, letter grade)
Course Director: Jason Bodily, PhD (Dept. of Microbiology and Immunology)
When course is offered: As needed
Prerequisites: Permission of course director.

Course Description: This is a two credit introductory course team-taught by basic scientists and clinical scientists. Four topics will be covered: 1) An introduction and overview of cancer; 2) cancer cell biology; 3) the diagnosis, treatment and prevention of cancer; and 4) the molecular pathogenesis and treatment of specific cancers. The focus of this course will be to provide information concerning what is currently understood about the biochemical mechanisms operating during development of neoplasia and will include up-to-date information about oncogenes, tumor suppresser genes, metastasis, angiogenesis, tumor immunology, diagnostic approaches (conventional and molecular) and treatment modalities. The course will consist of lectures that stress the research approaches and finding that currently form the basis for our understanding of how neoplastic cells arise and form cancers. This course will form the basis for more advanced courses in the cell and molecular biology of cancer.

IDSP 202 Mechanisms of Cancer Invasion and Metastasis (1 credit, letter grade)
Course Director: Shile Huang, PhD (Dept.of Biochemistry and Molecular Biology)
When course is offered: As needed
Prerequisites: IDSP 201, Approval by Course Director

Course Description: An advanced course, involving lecture and discussion, to study the processes involved in the development of metastatic disease. Students will learn the fundamentals, including the key molecules, events and signaling pathways that are directly involved in the invasive/metastatic processes. Important seminal papers as well as current literature will form the basis of student discussion.

IDSP 203 Discussions in Cancer Biology (0.5 credit, S/U)
Course Director: Jason Bodily, PhD (Dept.of Microbiology and Immunology)
When course is offered: Fall and Spring semesters
Prerequisites: none

Course Description: A journal club/research in progress format is used for the discussion of published and unpublished findings in cancer biology. Emphasis is on critical evaluation of experimental design and interpretation. Students will present and also participate in overall discussions. Grading will be based on participation and attendance. The class will meet once a week for 1 hr.

IDSP 204A & B Practical Bioinformatics – A survey (A offered for 3 letter grade credits, B offered S/U)
Course Director: Nancy Leidenheimer, PhD (Dept of Biochemistry and Molecular Biology)
When course is offered: Fall semester

Prerequisites: none

Description of course: An overview of bioinformatics and computational biology in the context of biomedical research. This course will enable students to integrate bioinformatics into their research projects by providing an understanding of the computational resources, tools, interfaces, and databases that are useful to the non-bioinformatician. Basic skills such as sequence alignments, “omics” analysis, and pathway construction will be taught with relevance to cancer, microbiology, neuroscience, and biochemistry. Students will also be introduced to translational/medical bioinformatics, as well as the power of programming for mining databases. Programming skills are not required.

IDSP 212 Foundations of Biomedical Sciences I - Cardiovascular System (1.5 credits, letter grade)
Course Director: Steven Alexander, PhD (Dept.of Molecular and Cellular Physiology)
When course is offered: Fall, Annually
Prerequisites for course: None

Course Description: An integrative approach to the physiology, anatomy, histology and pharmacology of the cardiovascular system.

IDSP 213 Foundations of Biomedical Sciences I - Renal System (1 credit, letter grade)
Course Director: Karen Stokes, PhD (Dept.of Molecular and Cellular Physiology)
When course is offered: Spring, Annually
Prerequisites for course: None

Course Description: An integrative approach to understanding the kidney's role in maintaining homeostasis. Emphasis will be on global regulation of salt, water and acid/base balance seen from a traditional as well as molecular perspective. Where available, "knockout" animals and functional expression analyses are incorporated.

IDSP 214 Foundations of Biomedical Sciences I - Respiratory System (1 credit, letter grade)
Course Director: Christopher Pattillo, PhD (Dept.of Molecular and Cellular Physiology)
When course is offered: Spring, Annually
Prerequisites for course: None

Course Description: An integrative course covering the physiology, anatomy/histology and pharmacology of the respiratory system.

IDSP 216 Foundations of Biomedical Sciences II - Gastrointestinal System (1 credit, letter grade)
Course Director: Norman Harris, PhD (Dept.of Molecular and Cellular Physiology)
When course is offered: Fall, Annually
Prerequisites for course: None

Course Description: Integrative course covering the anatomy, physiology and pharmacology of the gastrointestinal tract.

IDSP 217 Foundations of Biomedical Sciences II - Endocrine System (1 credit, letter grade)
Course Director: Diana Cruze-Topete, PhD (Dept of Molecular and Cellular Physiology)
When course is offered: Spring, Annually
Prerequisites for course: None

Course Description: An integrative course covering the physiology, anatomy, histology and pharmacology of the endocrine system.

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IDSP 218 Foundations of Biomedical Sciences II - Nervous System (1.5 credits, letter grade)
Course Director: Elizabeth Disbrow, PhD (Dept. of Pharmacology, Toxicology & Neuroscience)
When course is offered: Spring, Annually
Prerequisites for course: None

Course Description: Integrative anatomical, physiological and pharmacological examination of the nervous system.

IDSP 226 Basic Biostatistics (1 credit, letter grade)
Course Director: Elizabeth Disbrow, PhD (Dept of Pharmacology, Toxicology & Neuroscience)
When course is offered: annually, spring semester
Prerequisites for course: none
Textbook: *Understanding Statistics in the Behavioral Sciences*, R. Pagano, 10th edition

Course Description: This course is designed for graduate students who have little background in statistics. The lectures and associated homework assignments will provide working knowledge of basic statistical methods and their applications. Lectures will be based on chapters from the textbook. Topics will include frequency distribution, correlations, regression analysis, probability, distributions and hypothesis testing. Examples of use of these methods, descriptions of experimental design incorporating these methods and ethical treatment of data will be considered in all aspects of the course.

IDSP 227 Advanced Biostatistics (1 credit, letter grade)
Course Director: Clif Frilot, PhD (School of Allied Health Professions)
When course is offered: annually, spring semester, after IDSP 226
Prerequisites for course: none
Textbook: *Understanding Statistics in the Behavioral Sciences*, R. Pagano, 10th edition

Course Description: This course is designed for a graduate student who has knowledge of basic statistics. The lectures and homework assignments will provide working knowledge of more advanced statistical methods/concepts and their applications. Lectures will be based on chapters from the textbook. Additional material will supplement this text. Topics will include power analysis, parametric and non-parametric analysis, analysis of variance and components and factor analyses. Examples of use of these methods, descriptions of experimental design incorporating these methods and ethical treatment of data will be considered in all aspects of the course.

IDSP 230 Advances in Gene Therapy (1.5 credit, letter grade)
Course Directors: Xiaohong Lu, PhD (Dept. of Pharmacology, Toxicology & Neuroscience) and Dr. Shile Huang (Dept of Biochemistry and Molecular Biology)
When course is offered: As needed
Prerequisites for course: none

Course Description: An overview of gene therapy emphasizing the clinical history, the types of diseases that could benefit the most and ethical issues. Some of the major gene transfer vector systems will be covered in detail, highlighting advances in this rapidly developing field. Student's grades will be based on participation in discussion of current research and review articles, as well as exams.

IDSP 235 A and B Grant Writing (A offered for 1 letter grade credit, B offered for S/U)
Course Director: Andrew Yurochko, PhD (Dept.of Microbiology and Immunology)
When course is offered: Annually, fall semester
Prerequisites for course: None

Course Description: This IDSP235 Grant Writing course will provide a broad overview of the principles of grantsmanship, and the multiple steps involved in grant writing and submission and review of a grant application. Elements of the class will include how to write a competitive grant,

grant submission, the role of the Office of Sponsored Programs in grant submissions, the review process, and the submission of revised applications. The overall goal of the course is to provide the student with a basic understanding of the entire grant process, along with an education about the specifics of grant writing and how to try to secure funding as an academic scientist.
The ability to successfully compete in academic science (and other scientific arenas) is largely dependent on one's communication and grant writing skills. Thus, it is important that recent graduates have the critical skills to present significant, innovative, and testable research problems in a competitive grant format. This course will attempt to improve a student's grant writing skills by educating the student about the grant process and then providing them with a chance to complete each grant element in the submission of a scientific research grant. Twelve lectures over successive Fridays are designed to cover the various points of a successful grant application. The students will receive both an understanding of the grant process in a lecture format and a hands-on format that will allow the student to understand the importance of each element within a grant. Students will also watch a grant review take place and participate themselves in a mock grant review with the goal of gaining an appreciation for how a grant is reviewed and the significance of each element of a grant to the final outcome of that submission.
This IDSP235 Grant Writing class can either be taken for a letter grade (IDSP235A) or for a pass/fail (IDSP235B) option. For students participating in the graded format, attendance at all of the lectures is required and they will be expected to turn in for a grade, mock aspects of a grant, as well as a written review critique of a grant that is presented during the mock study section, which together will be graded in a letter grade format (A, B, C, D, and F). For those students taking the pass/fail (S/U) option, attendance at all of the lectures is required and they will be expected to turn in for a grade, mock aspects of a grant, as well as a written review critique of a grant that is presented during the mock study section, which together will be graded in P/F or S/U format (A, B, and C = S (P); and D and F = U (F)).

IDSP 240A Philosophical and Ethical Issues in Science (0.5 credit, S/U)
Course Director: Kelly Tatchell, PhD (Dept. of Biochemistry and Molecular Biology)
When course is offered: Fall, annually
Prerequisites for course: None
Textbook: *Scientific Integrity*, Francis L. Macrina, 4th edition

Course Description: The objective of this course is to provide an understanding of the underlying philosophy in scientific endeavors and the ethical issues that face scientists. The course will involve detailed discussions about the history of scientific thought, the scientific method, experimentation and data collection, mentoring and current ethical issues. Sessions will include lectures and discussions by faculty and students.

IDSP 240B Philosophical and Ethical Issues in Science (0.5 credit, S/U)
Course Director: Kelly Tatchell, PhD (Dept. of Biochemistry and Molecular Biology)
When course is offered: Summer, annually
Prerequisites for course: None
Textbook: *Scientific Integrity*, Francis L. Macrina, 4th edition

Course Description: This course is a continuation of IDSP240A. The objective of this course is to provide an understanding of the underlying philosophy in scientific endeavors and the ethical issues that face scientists. The course will involve detailed discussions about scientific collaborations, ethical issues of human clinical trials, experimentation and data collection, mentoring and current ethical issues. Sessions will include lectures and discussions by faculty and students.

IDSP 250 A & B Current Trends in Toxicology (1 credit, S/U)

Course Director: Kenneth McMartin, PhD (Dept of Pharmacology, Toxicology & Neuroscience)
When course is offered: Every semester
Prerequisites for course: None

Course Description: A discussion format in which students, postdoctoral fellows, research personnel and faculty from the Health Sciences Center with a common interest in Toxicology and Environmental Health meet to present emerging concepts, research data and hypothesis-driven research proposals in all toxicological sub-specialties. Topics will be selected from peer-reviewed Toxicology-based literature, from research findings from the participant's own laboratories, or from proposals in preparation for external funding. Class sessions will include occasional, scheduled meetings with Toxicologists from nearby institutions in the tri-state area. Students will be taught oral presentation skills, methods of evaluating current trends in Toxicology literature and research, and fundamentals of the grant-writing and review process. Grading will be based on student presentations and participation in class discussion. Section A is offered in the fall semester for 0.5 credit and Section B is offered in the spring semester for 0.5 credit.

Interdisciplinary Graduate Program

Overview. The interdisciplinary Graduate Program (IGP) is a two-semester PhD portal that allows students to matriculate into the PhD program prior to choosing a Departmental program. Students will take a common set of classes in the fall semester, as background to a more specialized course of study beginning in the spring semester. In addition to coursework, seminars and journal clubs, IGP students will participate in up to five lab rotations (three in the fall and two in the spring). Upon completion of the lab rotations, students will choose a research mentor and matriculate into the department of the chosen mentor. By the summer term, each IGP student will be a full member of one the five basic science departments.

IGP Administration. The IGP graduate program is administered by the Program Director (Kelly Tatchell) and Coordinator (Chanda Maguigan) in the School of Graduate Studies. A five-member admissions/advisory committee, made up of one member from each basic science department, will act as voting members for admissions and other advisory roles. The Program Director will not have voting privileges with respect to admissions. The Program Director and Project Coordinator will oversee student affairs until IGP students enter departments.

IGP academic policies. The IGP accepts students for matriculation in the fall term. All IGP students will take the following courses in the fall term:

IDSP110, Biochemistry and Molecular Biology, 3 credits
IDSP118, Cells and Signaling, 3 credits
IDSP116, 117. Research Methods, two 1 credit courses
IDSP226, IDSP227, Biostatistics, two 1 credit courses
IDSP240A, Ethics and Professional Development 0.5 credit S/U
Journal Club 1 credit S/U
Seminar 1 credit unit S/U

To introduce IGP students to the different research programs and scientific disciplines at LSUHSC-Shreveport, IGP students will attend afternoon seminars by graduate faculty during the first week of the term. After this orientation period, students will choose lab rotations and submit their requests to the advisory committee. The advisory committee is responsible for all rotation assignments. Each rotation is ~six weeks long. IGP students will participate in the Journal Club and Seminar of the department of the rotation lab. If scheduled courses preclude attending seminars in the Department

of the rotation lab, IGP students are required to attend at least one weekly seminar in another Department.

IGP students will meet with the advisory committee in November to discuss spring rotations and their spring term curriculum. This is an important meeting, because course selection will greatly influence the departmental options open to a student. The lab rotations in the spring are not mandatory, as students may join a laboratory after the third rotation if this is agreed upon by the advisory committee and the faculty member. Following the fifth rotation, all students must have identified a lab and joined a department.

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Department of Biochemistry and Molecular Biology

https://www.lsuhs.edu/departments/school-of-graduate-studies/biochemistry-and-molecular-biology

Stephan N. Witt, PhD, Professor and Head
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The Doctor of Philosophy degree is conferred for work of distinction in which the student displays original scholarship. The Graduate School of LSUHSC-S and the faculty of the Department of Biochemistry and Molecular Biology maintain a program that provides students the opportunity to distinguish themselves within a chosen field of study. Students are trained to recognize significant biomedical problems, to design experimental approaches to solving these problems, and to communicate their results to the scientific community.

I. Course Requirements

All students are required to complete **20 credit hours** in courses for which a letter grade is assigned. These 20 credit hours will consist of 14 hours derived from the **core curriculum** and 6 **elective credits** chosen from other letter-graded graduate courses. In addition to the elective courses offered by the Department of Biochemistry and Molecular Biology, students may choose as electives any of the interdisciplinary (IDSP) courses, or those offered by other basic science departments of the School of Graduate Studies that assign a letter grade upon completion of the course. Taking courses outside of the Department of Biochemistry and Molecular Biology is optional unless mandated by a student's advisory committee. Decisions regarding electives should be made upon discussion with the faculty mentor.

Descriptions of interdisciplinary (IDSP) courses are found on previous pages of this handbook. Courses offered by other departments are described within the specific sections in the handbook for those departments.

A. Core Courses (Required)

IDSP 110 Biochemistry and Molecular Biology, 3 credits, letter grade
IDSP 113 Genetics, 1 credit, letter grade
IDSP 116 Methods in Biomedical Sciences I, 1 credit, letter grade
IDSP 117 Methods in Biomedical Sciences II, 1 credit, letter grade
IDSP 118 Cells and Signaling, 3 credits, letter grade
IDSP 119 Gene Expression, 1 credit, letter grade
IDSP 226 Basic Biostatistics, 1 credit, letter grade
IDSP 227 Advanced Biostatistics, 1 credit, letter grade

BIOCH 288 Scientific Writing. (1 credit, letter grade) A course designed to teach fundamentals of writing a scientific paper, writing a grant proposal, and identifying topics and approaches suitable for grant proposals. Course offered spring semester of every year. Course Director: Dr. Lucy C. Robinson

BIOCH 124 Metabolism, (1 credit, letter grade) A lecture course presenting selected features of the metabolism of carbohydrates, lipids, amino acids, and nucleotides accompanied by discussions of important mechanisms cells utilize to regulate these processes. Discussions of the consequences of faulty regulation of pathways in some metabolic diseases are included. Course Director: Dr. Lucy C. Robinson

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B. Departmental Elective Courses

BIOCH 223. Physical Biochemistry. (2 credits, letter grade) A lecture course taught in the spring semester of odd numbered years. Discussions of physical and chemical techniques used in biochemistry to study macromolecular architecture and interactions. Course Director: Dr. Eric First.

BIOCH 271 Topics in Biochemistry and Molecular Biology: Cell Signaling. (1 credit, letter grade) A seminar/discussion course based on current literature that is offered in the spring semester. The theme (signaling pathway(s)) covered by the course changes with each offering. The introduction of a topic by the instructor is followed by literature discussions led by students. Past examples of course themes include MAPK signaling in yeast, *Drosophila* and vertebrates, and two-component regulatory systems in prokaryotes and eukaryotes. Course Director: Dr. Lucy C. Robinson.

BIOCH 281 Topics in Biochemistry and Molecular Biology: Molecular Mechanisms of Post-transcriptional Control. (1 credit, letter grade) A literature-based course dealing with post-transcriptional control of gene expression in eukaryotic cells and their viruses, offered in the spring semester of even-numbered years. Topics include mRNA splicing, mRNA stability, translational control, and protein targeting. Course Director: Dr. Ricky De Benedetti.

BIOCH 282 Topics in Biochemistry and Molecular Biology: Protein Structure/Function. (1 credit, letter grade) A series of lectures focused on the use of state-of-the-art approaches to study protein structure, protein folding and protein-ligand interactions. Taught in the fall semester of even-numbered years. Course Director: Dr. Eric First

BIOCH 283 Topics in Biochemistry and Molecular Biology: Molecular Mechanisms of Transcriptional Control. (1 credit, letter grade) A literature-based course offered in the fall semester of odd-numbered years that covers the roles of gene-specific activators and repressors, the nature and role of the general transcriptional machinery, and the role of nucleosomes, non-coding RNAs and higher-order chromatin structures in regulating transcription. Course Director: Dr. David S. Gross.

BIOCH 286 Topics in Biochemistry and Molecular Biology: Classical and Molecular Genetics. (1 credit, letter grade) This course emphasizes classical genetic methods as they apply to modern molecular biology. The course content will rely on yeast as an experimental organism, although the intent is to teach genetic principles as they apply to eukaryotic organisms in general. Offered in the fall semester of odd-numbered years. Course Director: Dr. Kelly Tatchell.

BIOCH 287 Topics in Biochemistry and Molecular Biology: Applications of Spectroscopic Techniques to Biochemical Problems. (1 credit, letter grade) This course emphasizes the principles of well-established methods, such as fluorescence spectroscopy, and new methods, such as surface plasmon resonance spectroscopy, and their applications to biochemical problems. Offered in the spring semester of odd-numbered years. Course Director: Dr. Stephan Witt.

BIOCH 290 Introduction to Bioinformatics. (3 credits, letter grade) This course introduces the computational and biological concepts and skills required for the field of bioinformatics. It is intended to provide an overview of the field of bioinformatics and train both life and computer science students to use commonly used bioinformatics programs. Offered in the spring semester of even-numbered years. Course Directors: Drs. Eric First and Marjan Trutschl.

C. Non-Departmental Electives

Interdepartmental

IDSP 201 Introduction to the Cell Biology of Cancer. 2 credits, fall, letter grade

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IDSP 202 Mechanisms of Cancer Invasion and Metastasis, 1 credit, spring, letter grade
IDSP 204 Practical Bioinformatics: A Survey, 3 credits, fall, letter grade (A) or P/F (B)

Selected courses from Foundations of Biomedical Sciences I and II

IDSP 212 Cardiovascular System	1.5 credits, letter grade
IDSP 213 Renal System	1 credit, letter grade
IDSP 214 Respiratory System	1 credit, letter grade
IDSP 216 Gastrointestinal System	1 credit, letter grade
IDSP 217 Endocrine Systems	1 credit, letter grade
IDSP 218 Nervous System	1.5 credits, letter grade
IDSP 219 Immunology/Inflammation	1 credit, letter grade
IDSP 235A Grant Writing	1 credit, letter grade
IDSP 123 Animal Models,	2 credit hours, letter grade

Other Courses for Consideration

Micro 297 Immunology	2 credits, spring, letter grade
Micro 291 Bacteriology	2 credits, spring, letter grade

D. Additional Course Requirements

In addition to the formal courses described above, students are required to register for several courses for which a satisfactory/unsatisfactory grade rather than letter grade is assigned. These courses include the following:

IDSP 240a Ethics and Professionalism I (0.5 credit, S/U). Course offered fall semester of each year. Course Director: Dr. Kelly Tatchell
IDSP 240b Ethics and Professionalism II (0.5 credit, S/U). Course offered summer semester of each year. Course Director: Dr. Kelly Tatchell

BIOCH 207 Introduction to Special Methods of Research (1-6 credits, S/U). This course provides first-year students credit for their efforts in laboratory rotation. Each new student is expected to participate in three separate rotations, each of two to three months duration.

BIOCH 208 Biochemistry and Molecular Biology Research (1-9 credits, S/U). This course is designed to provide a laboratory setting in which the student can develop the skills needed for independent research in the area of focus of the laboratory (mentor) chosen by the student. The research pursued during this course is expected to provide the scientific foundation and preliminary data necessary for passing the Preliminary Examination required for admission to candidacy for the PhD degree.

BIOCH 298 a and b Journal Club (0.5 credit, S/U). Each student is expected to present and discuss the content of a research article taken from the current literature and to participate in all journal club meetings scheduled in the fall and spring semesters. First and second year students should choose a faculty advisor who is not their dissertation or rotation director to advise in choice of topic and to critique the journal club both prior to and after the presentation, fall and spring.

BIOCH 299 a and b Research Seminar (0.5 credit, S/U). This course offers credit for participation in the departmental seminar program and student seminar program. Each student is expected to present a formal research seminar on their research project at least once during his/her degree candidacy and to participate in all departmental seminars scheduled in the fall and spring semesters, fall and spring.

BIOCH 300. Thesis Research. (1-6 credits, S/U. This course consists of conducting research to fulfill the requirements for the Master of Biomedical Science degree. The research is conducted under the direction and guidance of the student's approved faculty research advisor and research advisory committee members. Initially, the students learn about a specific thesis research topic, then generate a hypothesis and master the techniques required to test that hypothesis. As the project develops, students continue to collect data, acquire new techniques and learn the literature relevant to their research project. Consequently, as the research advances students are exposed to new methods and new information each semester as they develop their research skills. The students meet regularly with their advisors and committees and provide oral and written updates of their research progress. Because each student is responsible for a different project, the length of time required to complete each project varies as does the number of times the student registers for this course. Amount of credit for each semester is determined at the time of registration.

BIOCH 400. Dissertation Research. (1-9 credits S/U) This course consists of conducting research to fulfill the requirements for the Doctor of Philosophy degree. The research is conducted under the direction and guidance of the student's approved faculty research advisor and research advisory committee members. Initially, the students learn about a specific dissertation research topic, then generate a hypothesis and master the techniques required to test that hypothesis. As the project develops, students continue to collect data, acquire new techniques and learn the literature relevant to their research project. Consequently, as the research advances students are exposed to new methods and new information each semester as they develop their research skills. The students meet regularly with their advisors and committees and provide oral and written updates of their research progress. Because each student is responsible for a different project, the length of time required to complete each project varies as does the number of times the student registers for this course. Amount of credit for each semester is determined at the time of registration. Students are eligible to register for this course ONLY after they have been accepted for PhD candidacy (i.e., after successful completion of the Preliminary Exam).

Full-time students who have not yet completed the coursework requirement must register for a minimum of 9 credit hours (letter grade or S/U) in both fall and spring semesters, and 6 credit hours in summer semester. Students who have completed all coursework should register for 9 dissertation research credit hours per semester until their final semester of the program.

E. Course Requirement Summary

	COURSE	CREDITS
Core Courses *(14 credit hours required)*		
	IDSP 110	3
	IDSP 113	1
	IDSP 116	1
	IDSP 117	1
	IDSP 118	3
	IDSP 119	1
	IDSP 226	1
	IDSP 227	1
	BIOCH 288	1
	BIOCH 224	1

Elective Courses (6 credit hours required)

Suggested Courses

Departmental Elective Courses

BIOCH 223	1
BIOCH 271	1
BIOCH 281	1
BIOCH 282	1
BIOCH 283	1
BIOCH 286	1
BIOCH 287	1
BIOCH 290	1

Non-Departmental Elective Courses

IDSP 201	2
IDSP 202	1
IDSP 204A/B	
IDSP 212	3
IDSP 213	1
IDSP 214	1
IDSP 216	1
IDSP 217	1
IDSP 218	2
IDSP 219	1
IDSP 235A	1
IDSP 123	1
Micro 297	2
Micro 291	2

II. Journal Club (BIOCH 298 A and B)

The Biochemistry and Molecular Biology Journal Club is held on Wednesday of each week at 12:00 noon in the Biochemistry Conference room (7-201). All graduate students are required to present one article in the Journal Club per year, and students planning to graduate during the academic year must present a journal club before their scheduled defense date. Also, it is a requirement for first-year students and recommended for second-year students to select a faculty member for guidance in selecting and presenting their journal club topic. First-year students should present in the spring semester. Faculty and post-doctoral fellows are strongly encouraged to participate in the Journal Club. Following the Journal Club presentation, students meet with one or more faculty members of the Journal Club Evaluation Committee, who evaluate their presentation and provide constructive criticism.

III. Seminar (BIOCH 299 A and B)

The Department of Biology and Molecular Biology requires students to participate annually in the Department's seminar series (BIOCH 299). Each semester is a course taken for 0.5 credit hours. The seminar series consists of weekly seminars given by invited speakers from universities throughout the country, as well as regional and local experts in their field, and the students themselves. The invited speakers present seminars on a variety of topics ranging from traditional biochemical investigation to cutting-edge genetic technologies. Attendance is mandatory and students are encouraged to ask thoughtful scientific questions at the seminar for the purpose of developing processing and critical thinking skills. The seminar director monitors student participation and may, at his/her discretion, require students to provide a written synopsis of seminars to help improve participation of those students needing more experience. In addition to the above participation, graduate students are required, starting in their second year, to present a seminar each year except for the years of the preliminary exam and thesis defense. The first seminar is topical in nature, to be focused on a subject

of the student's choosing with approval of the mentor. Subsequent annual seminars will be focused on the student's research. The student's committee will evaluate the presentation. This evaluation assesses the use of the scientific method, clarity of presentation, organization, public speaking skills, ability to answer audience questions and other parameters relevant to a seminar presentation.

IV. Laboratory Rotations

During the first year of study, all students are required to rotate through a minimum of three laboratories. Rotation periods for the 2021 – 2022 academic year will begin the week of 9 August. The student is expected to choose a permanent laboratory following the third rotation. Students will receive, in addition to a S/U grade, a narrative evaluation of each of their rotations. These evaluations, along with a student's performance in courses and on the Qualifying Examination, will be used in a year-end evaluation of his or her status in the PhD program.

V. Advisory Committees

Each student is required to select a graduate advisory committee that will meet approximately every 6 months. This committee will consist of the student's dissertation advisor (major professor), three additional members of the Department of Biochemistry and Molecular Biology, and one faculty member whose primary appointment is outside of Biochemistry and Molecular Biology (Note that adjunct Biochemistry faculty are considered to be within the department). Faculty who have joint appointments in the Department of Biochemistry and Molecular Biology and another department may serve on advisory committees as an inside member. All committee members must hold appointments within the LSUHSC-S Graduate School, i.e., faculty from clinical departments may serve on graduate advisory committees if they hold appointments in the Graduate School.

The advisory committee should be chosen by the student and the dissertation advisor as soon as possible after the student has been matched with a dissertation advisor and has successfully completed the Qualifying Examination.

In addition to the permanent advisory committee, the student must select an ad hoc committee member (outside of this institution) who will serve during the evaluation of the Preliminary Examination. This member is to be chosen by the student, with the advice and consent of the dissertation advisor. The outside member will read the Preliminary Examination proposal, attend the Preliminary Examination and contribute to the discussion and decision regarding the outcome of the examination.

VI. Qualifying Examination

All PhD students are required to pass the Qualifying Examination administered in June at the end of the first year, after successfully completing IDSP courses 110, 113, 116, 117, 118, 119, and Metabolism (BIOCH 224). The Qualifying Examination is a two-day written examination designed to test basic knowledge (Day 1) as well as analytical skills in biochemistry and molecular biology (Day 2). Students will be informed in writing whether they passed or failed the examination. If given permission by the faculty, a student who fails the exam on the first try may take it again in January of year two. Students who are not given permission will be dismissed. A student who fails the Qualifying Examination twice will be dismissed from the PhD program. The student may seek a Master's degree in Biomedical Science, at the discretion of a majority of the Departmental faculty. All students must pass the Qualifying Examination before attempting the Preliminary Examination.

VII. Preliminary Examination

As a condition for admission to candidacy for the PhD degree, all students must pass a Preliminary Examination (Prelim). The Prelim consists of a written research proposal on the student's PhD thesis

work in the format of an NIH RO1 grant application (using current application forms) and a public presentation of a seminar describing the proposal. At the discretion of the student's mentor or advisory committee, a comprehensive review of the pertinent scientific literature also may be required, as an addendum to the research proposal. Students are required to take the Preliminary Examination prior to September 1 at the beginning of the fourth year. Intent to take the Preliminary Examination later than September 1 must be approved by the Advisory Committee with the consent of the departmental Director of Graduate Studies.

The rationale and major objectives to be accomplished in writing the grant proposal include the following: (1) The student gains the experience of writing a complete research proposal within their research area. (2) The proposal serves as a "working document" for the student and mentor in the final stages of the student's research program. Much of the proposal may be used in the student's final dissertation. (3) The proposal requires that the student focus on current accomplishments and the work that remains to be accomplished for the research project. (4) Successful preparation of the proposal demonstrates understanding of the concepts inherent in the research problem, of the methods employed in the research, and of the basic concepts of biochemistry and molecular biology.

One important aspect of the Preliminary Examination format is that each PhD student is required to choose a visiting scientist (ad hoc committee member) to participate in the evaluation of the research proposal. The visiting scientist is chosen by the student in consultation with his/her dissertation director and with the approval of the dissertation committee. The visiting scientist should be a nationally recognized authority within the student's research area. The visiting scientist receives a copy of the research proposal and participates as a voting member of the committee in the examination. The visiting scientist is also expected to present a departmental seminar during his/her visit.

The proposal must be prepared on current NIH R01 grant application forms (link to forms and instructions available from the Department Director of Graduate Studies) and must conform to all page limitations. The student should have approximately 25% of the dissertation research completed before attempting the Preliminary Examination. This provides an opportunity for the visiting scientist to have substantial input into the development of the student's project. The Advisory Committee, including the visiting scientist, will make a judgment of pass, fail, or conditional pass. In the latter case, some revision of the research proposal is required.

A student who fails the Preliminary Examination may retake it, at the discretion of a majority of the Departmental faculty, up to 12 months after the original exam. A student who fails the Preliminary Examination twice will be dismissed from the PhD program. The student may remain in the graduate program, seeking a Master's Degree in Biomedical Science, at the discretion of the student's committee.

VIII. Dissertation

A written PhD dissertation must be submitted to the advisory committee and defended according to the guidelines established by the LSUHSC Graduate School.

IX. Expectations of students awarded the PhD degree

Due to the nature of scientific research, there is a wide range of variation among dissertation projects. As a result, the Department does not set precise time or productivity standards for obtaining a PhD. The final decision as to whether a student has satisfied the requirements for a PhD rests with the advisory committee. Nonetheless, the following achievements and skills are expected to be attained by every student who receives the PhD degree from this department.

A. The student should have satisfactory basic knowledge of biochemistry and molecular biology, as evidenced by maintaining a GPA of at least 3.0 in core courses.

B. The student should be able to critically read and understand the scientific literature.
C. The student should know the scientific literature in her or his field.
D. The student should understand how her or his research fits into the context of other research in the field.
E. The student should be able to conduct independent scientific research that makes an original and significant contribution to her or his field. This includes proposing testable hypotheses, designing experiments and controls for testing these hypotheses, performing experiments, interpreting the results of these experiments, and publishing the results in peer-reviewed scientific journals.
F. The student should be able to devise and execute an experimental plan that either determines why an experiment failed or will clarify and improve upon one that gives ambiguous, uninterpretable results.

X. Leave of Absence

A Leave of Absence may be granted by the Department Head when circumstances require. However, if a Leave of Absence exceeds one year, then re-application to the program and Graduate School will be required.

XI. Academic Probation

Students must maintain a minimum grade point average (GPA) of 3.0. A student with a GPA of below 3.0 is immediately placed on probation, and continuation of the student in the program is at the discretion of the Departmental faculty. The faculty may choose one of the following options: 1) dismiss the student from the graduate program, 2) allow the student to enter the M.S. program (see below), or 3) extend the period of probation to allow the student to attain a GPA of 3.0. The probationary period may not extend beyond one year for either PhD or M.S. students unless an extension is granted by the department, conditional on approval by the Dean of the School of Graduate Studies.

XII. The Master of Biomedical Science (M.S.) Program.

The Master of Biomedical Science (M.S.) degree may be awarded to students who enrolled in the PhD program after the successful completion of a minimum of 20 hours of the graduate curriculum (described above) plus at least 6 hours of research credit, with a cumulative GPA above 3.0.

The student must receive permission from the Office of Graduate Studies to enter the M.S. program. A new thesis committee is formed using at least three of the original five advisory committee members, one of whom is not a member of the Department of Biochemistry and Molecular Biology. A written M.S. thesis must be submitted to the advisory committee and defended according to the guidelines established by the LSUHSC-S School of Graduate Studies.

A. Other Stipulations

1. Tuition waivers are provided if funds are available.
2. Financial compensation may be provided at the discretion of the thesis/dissertation advisor. In no instance will compensation be paid from departmental sources.
3. Holding a job outside the Department is permitted only in cases where other compensation is not provided.

B. Re-admission to the PhD Program

A student may be re-admitted to the PhD program if the following conditions have been met:
1. The successful completion of the M.S. degree in Biomedical Science and with the recommendation of the student's Advisory Committee.
2. The student has successfully passed the written Qualifying Examination within two attempts.
3. The student has achieved a 3.0 GPA, as described for the requirements of the PhD degree.

4. The student's application meets the requirements of both the LSUHSC-S Graduate School and the departmental Graduate Admissions Committee.

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Department of Cellular Biology & Anatomy

https://www.lsuhs.edu/departments/school-of-graduate-studies/cellular-biology-and-anatomy

Kevin McCarthy, PhD Professor and Head
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The Department of Cellular Biology & Anatomy offers training programs for both doctoral and master's degrees. These programs provide students with the knowledge and skills necessary to pursue independent careers in biomedical research and to teach human anatomy, as described below.

DOCTOR OF PHILOSOPHY DEGREE

The Ph.D. degree is the highest academic degree offered by the university. The major emphasis of the Ph.D. program in the Department of Cellular Biology & Anatomy is to provide an environment in which students learn to pursue original scholarship in the laboratory and to communicate scientifically in order to become a competent biomedical scientist. The program emphasizes mentor-guided training in molecular, cellular, physiological and neural mechanisms of normal functioning and disease processes. We focus on diseases that are widespread and greatly impact modern society, such as cancer, cardiovascular disease, diabetes mellitus, epilepsy and stroke. Doctoral training includes preparation of a grant proposal for pursuing dissertation research, seminars describing research progress, participation in journal clubs, presentations at scientific conferences, and a final defense of the dissertation, which should describe original research of distinction. Training also includes core courses in cell biology, embryology, histology and anatomy. Students subsequently assist with one of these courses, providing them with valuable teaching experience for pursuing an academic career. Other core courses and elective courses include interdisciplinary basic science courses in the molecular and cellular biology and physiology of organ systems.

MASTER OF SCIENCE DEGREE

The Department offers a Clinical Anatomy track in the School of Graduate Studies' M.S. Degree in Biomedical Sciences. The Anatomy track is a two-year program designed to fill the critical need for anatomy instructors at medical schools, other professional schools and undergraduate institutions. During the first year of the Program, M.S. students complete courses in embryology, histology and anatomy of the human musculoskeletal system, body cavities and nervous system, including labs and clinical correlations. During the second year, the students assist with these courses and complete a mentor-guided research project on a cellular, molecular and/or anatomical topic, culminating in a thesis.

I. REQUIREMENTS FOR ADMISSION TO THE PH.D. AND M.S. PROGRAMS

A. Baccalaureate degree from an accredited college or university.

B. Undergraduate grade point average of 3.0 on a 4.0 point scale, and a 3.0 grade point average for all graduate coursework. Probationary or provisional admission is sometimes granted if the G.P.A. is near but below these standards or the 2.5 GPA required by the School of Graduate Studies for unconditional admission.

C. Most successful applicants should have completed courses in inorganic chemistry, organic chemistry, biochemistry, physics and biological sciences. For exceptional applicants, one or more course requirements can be waived. Advanced courses in mathematics (e.g., calculus) are also strongly recommended.

D. The minimum verbal plus quantitative score on the Graduate Record Examination required for unconditional admission is 300. Applicants admitted to the Ph.D. program typically have higher scores.

E. International students should have scores of at least 90 on the Test of English as a Foreign Language (TOEFL) for unconditional admission. Alternatively, a score of at least a 6.5 on the

International English Language Testing Service (IELTS) exam is acceptable.

F. Letters of recommendation from three former professors or other professional academicians familiar with the student's coursework or scientific employment, initiative and character.

G. Positive interviews with departmental faculty and the departmental Head. Interviews with well-qualified students living far from Louisiana will be conducted by teleconference.

II. PROCEDURE FOR ADMISSION TO THE PROGRAMS

Applications are accepted on-line through GradCAS website: https://gradcas2021.liaisoncas.com/applicant-ux/#/login

Applicants should upload a CV/Resume, personal statement (300-750 words), *copies* of transcripts (optional), and a *copy* of GRE (optional). Applicants also should arrange official transcripts, GRE score, TOEFL/IELTS score (for international students), and three professional references to be submitted directly to GradCAS. To assist in evaluating your preparation and aptitude for graduate study, the personal statement should include your academic interests, professional objectives, research interest, research experience, and plan for your future occupation or profession. After the application, applicants will be reviewed by the Graduate Advisory Committee of the Department, the most promising applicants will be contacted by the Graduate Recruiter (Dr. Sumitra Miriyala) to arrange interviews with the Faculty and Head of the Department.

After the interviews, successful applicants will be notified by mail from the Department and the School of Graduate Studies. Separate acceptance letters should be sent to the Department and School of Graduate Studies. Applicants who have questions concerning the application and review process should address the inquiries to Dr. Hong Sun, Director of Graduate Studies, Department of Cellular Biology & Anatomy, LSU Health Shreveport, 1501 Kings Highway, Shreveport, LA 71130; Tel: (318) 675-4566, e-mail: hong.sun@lsuhs.edu. Further information can be found online at the Department of Cellular Biology & Anatomy website.

III. RESIDENCY REQUIREMENTS FOR PH.D. PROGRAM

Students are expected to devote full-time to the Ph.D. program. Completion of the degree typically requires at least four years of enrollment. In general, stipend support (described below) is only available for four years; students should strive to complete the degree during this time period. Students who enter the doctoral program with an M.S. or other graduate degree in science might be able to complete the Ph.D. degree in less time, but they must still meet all requirements for the Ph.D. degree. Students with relatively weak scientific backgrounds and little prior research experience sometimes require five years to complete the program. Under exceptional circumstances, and with permission from the Graduate Advisory Committee, Department Head and Dean of the School of Graduate Studies, students can be granted a leave of absence from the program; leave time is not considered part of the residency requirement.

IV. FINANCIAL SUPPORT FOR PH.D. AND M.S. STUDENTS

Every effort will be made to provide a stipend to Ph.D. students who remain in good academic standing (Section V) and continue to make progress toward the degree. Funding can come from any of four sources, and typically increases by $2,000/yr after the student successfully passes the Preliminary Exam (Section X-B). Depending on availability of funding, M.S. students might also be eligible for a stipend from the Department in their second year, but they do not typically receive funding from a research grant. However, depending on availability, an M.S. student can receive a tuition waiver (Section VI).

A. Stipend from the Department and School of Graduate Studies. These stipends are awarded to many full-time Ph.D. students in good academic standing (Section V).

B. Research Grant Awarded to the Graduate Advisor. Students who conduct research related to the aims of a research grant awarded to their Research Advisor are eligible to receive a Graduate Research Assistantship paid by the grant. Departmental policy is that these students cannot receive a net (after tax) salary exceeding departmental stipends awarded to other students. Students supported

on research grants are still considered full-time students.

C. Individual Research Fellowship. Ph.D. students with outstanding academic records are encouraged to apply for a pre-doctoral fellowship from the National Institutes of Health, National Science Foundation or other foundation recommended by the Graduate Research Advisor. Students with a M.D., D.D.S., or D.V.M. degree are encouraged to apply for an individual National Research Service Award (NRSA). Students with other advanced degrees who obtain an NRSA are still subject to all Ph.D. degree requirements.

D. Individual Pre-doctoral Fellowship. Ph.D. students who have successfully completed their Qualifying and Preliminary Exams and defended their dissertation proposal (described below) are eligible for a $28,000 (per year) in-house pre-doctoral fellowship: the Malcolm Feist Fellowship supports students conducting cardiovascular research; the Carroll Feist Fellowship supports students conducting cancer research; and the Ike Muslow fellowship supports students whose research focuses on other scientific areas. Deadlines for submission of applications are in April. Fellowship sponsors determine which applicants to fund, typically beginning July 1. Fellowships can be renewed twice, for a total of 3 years of support.

Income from fellowships (Sections IV-C and -D) can exceed the approved Departmental level (Sections IV-A and -B). The Department endeavors to administer stipends and research assistantships fairly and equitably. *Regardless of the amount of financial assistance that is provided, Ph.D. students cannot receive additional funds from the university or from other employment.* Ph.D. students receive stipends, research assistantships and fellowships so they can devote 100% time and effort to doctoral training and research. Students in financial difficulty should discuss the matter with their Graduate Research Advisor, the Department Head or the Dean of the School of Graduate Studies, who might be able to provide some assistance.

V. ACADEMIC STANDING

In June of each year, the Graduate Advisory Committee evaluates Ph.D. and M.S. student progress reports (with input from Research Advisors) and mentoring plan for the upcoming year. Students are expected to maintain an overall grade point average (GPA) of 3.0 on a 4.0 point scale, to make steady progress toward completing the degree and to follow the recommendations of the Research Advisor and Committee. Students are also expected to earn “A” or “B” letter grades in required Departmental courses. Failure to meet these requirements can result in loss of academic standing and in academic probation. *Students on academic probation are not eligible for a stipend and could lose their tuition waiver and fellowship.* They might still be able to receive a Research Assistantship, but this cannot be guaranteed. *Students on academic probation will be given up to three subsequent consecutive semesters to raise their overall GPA to 3.0 on a 4.0 scale.* The Graduate Advisory Committee can impose additional requirements, such as an ‘A’ or ‘B’ final grade in a specific course or courses. At the discretion of the Graduate Advisory Committee, Department Head and Faculty Advisor, students who fail to return to good academic standing in the time required will be dismissed from the Ph.D. or M.S. program. A grade lower than “C” can also result in immediate termination from the Ph.D. or M.S. program.

VI. TUITION WAIVERS

The tuition waiver policy is as follows:

A. Tuition will be waived for full-time Ph.D. students who hold Graduate Assistant appointments.

B. Tuition will be waived for full-time Ph.D. students who are paid a stipend/wage from a grant, regardless of the source of the grant.

C. Tuition will not be waived for Ph.D. students who are paid from grants that expressly indicate that the grants will pay tuition costs. This primarily pertains to training grants.

D. If available, tuition waivers will also be provided for M.S. students.

E. Students who are not full-time are not eligible for tuition waivers.

All Ph.D. and M.S. students are responsible for paying the University Activity Fee and must purchase Health Insurance or provide evidence of other health-care coverage. Students are also responsible for costs of binding the thesis and dissertation, microfilming and diploma, as well as for

other incidental expenses not covered by tuition waiver.

VII. RESEARCH FOR THE DOCTORAL DISSERTATION AND M.S. THESIS

A. Research Components. The Ph.D. program emphasizes laboratory research, presentation of departmental seminars (see below), poster and oral presentations at scientific meetings, publication of papers, and preparation and defense of the dissertation. Students are expected to conduct laboratory and library research even when courses are in progress, because learning how to allocate effort is important to the training. The M.S. Program has less-stringent research requirements and emphasizes in-depth training in human anatomy with clinical correlations.

During the first several semesters, students take a laboratory research rotation course, Research Methods (CEBIO 250). The Graduate Program Director supervises the first rotation, which includes interviews with Graduate Faculty members of the Department. Each student must then provide the Graduate Program Director with a written list of faculty members with whom he or she would like to conduct lab research rotations. The Graduate Advisory Committee and Department Head must approve the selections. Three lab rotations must be completed, but the student may petition to waive the third and final rotation. Each lab rotation should last 6-8 weeks. They provide first-hand knowledge of faculty research areas and serve as a basis for choosing a Research Advisor (major professor). Students in the M.S. are not required to conduct research rotations, due to the short time frame of the program.

B. Selection of a Research Advisor (major professor). By the end of the spring semester of the first academic year, each student should have chosen a Research Advisor from among the graduate faculty, with whom to conduct dissertation research. The selection is made by listing a first choice and an alternate choice in a letter to the Graduate Advisory Committee. Every effort will be made to place the student in the laboratory of his/her first choice, provided that the faculty member is agreeable and that space and funds are available to support the student's research. Faculty members who accept Ph.D. students are expected to provide them with a Research Assistantship. After successfully completing the Qualifying and Preliminary Examinations (Section X), the stipend may be supplemented by $2,000 from a research grant. The department is not obligated to pay this supplement for students who are not paid from grants.

C. Selection of Research Advisory Committee. Members of the Research Advisory Committee should be established soon after selection of the Research Advisor, in conjunction with the Advisor. The members should have expertise in research, especially in the areas related to the student's interests. The Committee must be approved by the Graduate Advisory Committee.

For Ph.D. students, the Research Advisory Committee must include at least 5 faculty members (including the mentor). The committee of 5 can be composed in two different ways:

(1) Research Advisor; two Graduate Faculty members from within the department; one Graduate Faculty member from outside the department; and one outside member from another institution

OR

(2) Research Advisor; one Graduate Faculty members from within the department; two Graduate Faculty member from outside the department; and one outside member from another institution

For M.S. students, the Committee must include 3 members: the Research Advisor; one other Graduate Faculty member from within the department; and one Graduate Faculty member from outside the department.

All voting committee members from LSUHSC-Shreveport must be listed as Graduate Faculty. Additional faculty members, including clinical faculty, can also serve as nonvoting members. The Research Committee provides advice and support on the student's research, monitors the development of the student into a productive and competent investigator, and evaluates the student's progress. The Committee must meet at least twice annually, and the Research Advisor is expected to provide a progress report to the Graduate Program Director at the end of each academic year. The Committee also conducts the Ph.D. Qualifying and Preliminary Exams, Dissertation Defense, and defense of the M.S. thesis.

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VIII. COURSEWORK AND COURSE POLICIES OF THE DEGREE PROGRAMS

A. Curriculum. Each student is expected to know human anatomy and to understand the concepts, experimental approaches, and recent advances in cell biology and their area of research specialization. The Graduate School website provides detailed descriptions of all courses offered by the Department and School. Departmental courses are also described below.

B. Required and Elective Courses. *Doctoral and M.S. students are required to earn 21 or 20 credit hours, respectively, from letter-graded courses.* The required letter-graded courses are indicated in the curriculum schedule in Section VIII-F. Required departmental courses are described in Section XV. Elective courses for Ph.D. and M.S. students are listed at the end of the corresponding curriculum schedules in Section VIII-F. Courses that are not listed can be taken instead if pre-approved by the Graduate Advisory Committee and Research Advisor. Numbers of other credit hours from S/U-graded and research courses must comply with policies of the School of Graduate Studies.

C. Transfer of Graduate Credit. Upon request, a student might be permitted to transfer credit for some of the required courses. The transfer must be approved by the Graduate Advisory Committee and cannot exceed the credit hours permitted by the School of Graduate Studies.

D. Grading and Withdrawal from Courses. The Department of Cellular Biology & Anatomy uses a scale of 90-100 ***A***, 80-89 ***B***, 70-79 ***C***, and below 70 as failing (***F***). Other grading policies and policies for withdrawal from courses comply with policies of the School of Graduate Studies.

E. Leave. Vacation and sick leave must be reported to the Department Office. Graduate students are allowed two weeks (10 working days) of vacation leave each academic year, including the summer session. Each student must seek permission from the Graduate Program Director or Research Advisor at least one week prior to leaving on vacation. In unusual circumstances, additional leave time might be granted, but it must be approved in advance by the Research Advisor and Graduate Advisory Committee. Students who take vacation or extra leave without permission could lose their stipends and be expelled from the program.

F. Summary of the Ph.D. Curriculum

YEAR 1

Semester	Course	Credits	Grading
FALL	**IDSP 110** Biochemistry and Molecular Biology	3	L
	IDSP 118 Cell Biology and Signaling	3	L
	IDSP 116, 117 Research Methods	2	L
	IDSP 226, 227 Biostatistics	2	L
	IDSP 240A Ethics and Professional Development	0.5	S/U
	CEBIO 289 Current Topics in Cell Biology (Journal Club)	1	S/U
	CEBIO 290A Seminar	0.5	S/U
SPRING	**CEBIO 200C** Integrative Structural Biology (Histology)	3	L
	elective course(s) from Group 1 or 2	1+	L
	CEBIO 250 Lab Rotation	1-5	S/U
	CEBIO 289 Current Topics in Cell Biology (Journal Club)	1	S/U
	CEBIO 290B Seminar	0.5	S/U
SUMMER	**CEBIO 260** Comprehensive Human Structural Biology	5	L
	CEBIO 250 Lab Rotation	1-2	S/U
	***optional* elective course(s) from Group 3**		

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YEAR 2

Semester	Course	Credits	Grading
FALL	**CEBIO 265** Human Neuroanatomy	2	L
	IDSP 235A or B Grant Writing	1	L
	elective course(s) from Group 4	1+	L
	CEBIO 250 Research	1-5	S/U
	CEBIO 289 Current Topics in Cell Biology (Journal Club)	1	S/U
	CEBIO 290A Seminar	0.5	S/U
SPRING	**elective course(s) from Group 2 or 5**	1+	L
	CEBIO 250 Research	1-2	S/U
	CEBIO 289 Current Topics in Cell Biology (Journal Club)	1	S/U
	CEBIO 290B Seminar	0.5	S/U
SUMMER	**CEBIO 250** Research	6	S/U

YEARS 3-4

Semester	Course	Credits	Grading
FALL	**CEBIO 250/400** Research/Dissertation research	1-8	S/U
	CEBIO 289 Current Topics in Cell Biology (Journal Club)	1	S/U
	CEBIO 290A Seminar	0.5	S/U
SPRING	**CEBIO 250/400** Research/Dissertation research	1-8	S/U
	CEBIO 289 Current Topics in Cell Biology (Journal Club)	1	S/U
	CEBIO 290B Seminar	0.5	S/U
SUMMER	**CEBIO 250/400** Research/Dissertation research *(Qualifying and Preliminary Exams; Preliminary Exam must be completed by the end of Year 3)*	6	S/U

YEAR 5 *(as needed)*

Semester	Course	Credits	Grading
FALL	**CEBIO 400** Dissertation research	1-8	S/U
	CEBIO 289 Current Topics in Cell Biology (Journal Club)	1	S/U
	CEBIO 290A Seminar	0.5	S/U
SPRING	**CEBIO 400** Dissertation Research or Defense *(Students can enroll for Exam Only (**CEBIO X999**) status if all other requirements have been met. The dissertation MUST be defended and the Final Exam held the same semester).*	1-8	S/U
	CEBIO 289 Current Topics in Cell Biology (Journal Club)	1	S/U
	CEBIO 290B Seminar	0.5	S/U

Ph.D. ELECTIVE COURSES

Group 1 *(offered in Spring)*:

CEBIO 262 Human Structural Biology (Musculosketal, Head & Neck) (3 credits, L)
CEBIO 265 Human Neuroanatomy (2 credits, L)

Group 2 *(offered in Spring)*:

IDSP 213 Foundations of Biomedical Sciences I, Renal System (1 credit, L)

IDSP 214 Foundations of Biomedical Sciences I, Respiratory System (1 credit, L)
IDSP 217 Foundations of Biomedical Sciences II, Endocrine System (1 credit, L)
IDSP 218 Foundations of Biomedical Sciences II, Nervous System (2 credits, L)

Group 3 *(offered in Summer)*:
IDSP 219 Foundations of Biomedical Sciences, Inflammation, Immunity, & Infection (1 credit, L)

Group 4 *(offered in Fall)*:
CEBIO 266 Essential Neuroanatomy for Basic scientists (2 credits, L)
IDSP 112 Basic Biochemistry, Molecular and Cellular Biology II (2 credits, L)
IDSP 212 Foundations of Biomedical Sciences I, Cardiovascular System (2 credits, L)
IDSP 216 Foundations of Biomedical Sciences II, GI System (1 credit, L)

Group 5 *(offered in Spring)*:
IDSP 113 Genetics (1 credit, L)
IDSP 115 Molecular Signaling (1 credit, L)
IDSP 119 Gene Expression (1 credit, L)

G. Summary of the M.S. Curriculum

YEAR 1

Semester	Course	Credits	Grading
FALL	**CEBIO 216** Human Developmental Biology (Embryology)	3	L
	CEBIO 261 Human Structural Biology (Body Cavities)	3	L
	IDSP 240A Ethics and Professional Development	0.5	S/U
	CEBIO 289 Current Topics in Cell Biology (Journal Club)	1	S/U
	CEBIO 290A Seminar	0.5	S/U
	CEBIO 300 Thesis Research	1	S/U
SPRING	**CEBIO 200C** Integrative Structural Biology (Histology)	3	L
	CEBIO 262 Human Structural Biology (Musculoskeletal, Head & Neck)	3	L
	CEBIO 265 Human Neuroanatomy	2	L
	CEBIO 289 Current Topics in Cell Biology (Journal Club)	1	S/U
	CEBIO 290B Seminar	0.5	S/U
	CEBIO 300 Thesis Research	1	S/U
SUMMER	**CEBIO 300** Thesis Research	5-6	S/U
	elective course (*optional*)	1	L

YEAR 2

Semester	Course	Credits	Grading
FALL	**IDSP 211** Foundations of Biomedical Science, General Principles of Physiology and Pharmacology	1	L
	IDSP 212 Foundations of Biomedical Science, Cardiovascular System	2	L
	IDSP 226, 227 Biostatistics	2	L
	CEBIO 289 Current Topics in Cell Biology (Journal Club)	1	S/U
	CEBIO 290A Seminar	0.5	S/U
	CEBIO 300 Thesis Research	2-3	S/U

	elective course (*optional*)	1	L
SPRING	**CEBIO 289** Current Topics in Cell biology (Journal Club)	1	S/U
	CEBIO 290B Seminar	0.5	S/U
	CEBIO 300 Thesis Research	7-8	S/U
	elective course(s) (*optional*)	1+	L
SUMMER *(as needed)*	**CEBIO 300 Thesis Research**	6	S/U

M.S. ELECTIVE COURSES

(≥ 2 credit hours of electives are required)

Fall elective:

IDSP 216 Foundations of Biomedical Sciences II, GI System (1 credit, L)

Spring electives:

IDSP 114 Cell Biology (2 credits, L)
IDSP 213 Foundations of Biomedical Sciences I, Renal System (1 credit, L)
IDSP 214 Foundations of Biomedical Sciences I, Respiratory System (1 credit, L)
IDSP 217 Foundations of Biomedical Sciences II, Endocrine System (1 credit, L)
IDSP 218 Foundations of Biomedical Sciences II, Nervous System (2 credits, L)
IDSP 227 Advanced Statistics (1 credit, L)

Summer elective:

IDSP 219 Foundations of Biomedical Sciences, Inflammation, Immunity, & Infection (1 credit, L)

IX. DEPARTMENTAL SEMINAR PROGRAM

A. Importance of the Seminar Program. Seminars provide students, post-doctoral researchers and faculty with the opportunity to discuss research findings and new developments in the disciplines of cell biology on a regular basis. By attending and presenting seminars, graduate students learn how to learn how to present and discuss experimental data and hone their skills as scientists and teachers.

B. Seminar Policy. Students are required to enroll in the departmental seminar course each fall and spring semester. *Beginning in the second year, each graduate student is required to present a seminar during the fall or spring seminar series.* All graduate students are expected to participate actively in seminar by contributing to the discussion. The topic for presentation and the date of the seminar must be approved by the faculty member in charge of seminar program (Seminar Director). Students who fail to have topics approved prior to the seminar date will be assigned a topic by the Seminar Director. Beginning students typically discuss a topic related to their area of interest that has been selected with advice of the Faculty Advisor or faculty member in charge of the seminar series. Second-year students are expected to present a seminar in the spring semester. Before the beginning of the fall semester of the third-year, students are expected to have presented data and a detailed description of the aims of the Research Proposal. Students who anticipate completing the PhD should present a final seminar as a component of the Dissertation Defense.

Attendance at departmental seminars and at seminars given by visitors to the department is mandatory. Absences must be pre-approved by the Seminar Director. Failure to obtain prior approval can result in a failing grade for the seminar course.

C. Suggested Format for the Seminar. A research seminar typically begins with an introduction to state the questions being asked and includes background information that can be understood by a broad scientific audience. The background information should be derived from carefully-selected papers presented in a critical and informative manner. The student is expected to understand key papers related to the seminar topic, including the rationale for the research and experimental approaches. However, the seminar should not be a lecture or an overview. Rather, it should consist of a focused presentation of the rationale, experimental design and results, and a detailed discussion of the impact and limitations of the research findings.

X. QUALIFYING AND PRELIMINARY EXAMS FOR THE DOCTORAL DEGREE

The qualifying process for Ph.D students to advance to doctoral candidacy in the Department of Cellular Biology & Anatomy consists of: 1) successful completion of core and elective coursework; 2) preparation and submission of an approved Research Proposal (Qualifying Exam); and 3) preparation and oral seminar defense of the Research Proposal (Preliminary Exam). This process must be completed by the end of the third year.

A. Qualifying Exam. The Qualifying Exam consists of an NIH R01-style proposal on the research the student intends to conduct for the dissertation. Details of the proposal content are established by the Graduate Advisory Committee and can be obtained from the Graduate Program Director. The proposal should minimally include a detailed Research Plan (Specific Aims and Research Strategy (Significance, Innovation, and Approach (preliminary results, rationale, research design, expected outcomes, potential pitfalls, and alternative approaches))), a cited literature section, and a Biographical Sketch. It should be prepared in close collaboration with the Research Advisor and advice from the Research Advisory Committee. The proposal must be submitted to the Graduate Advisory Committee, who will have up to two weeks for review, although every effort will be made to shorten the review period. The Committee will determine if the proposal meets Departmental standards. If minor weaknesses are identified, a provisional passing grade could be granted pending satisfactory revision. The Program Director will return the Qualified Proposal to the student for distribution to the Research Advisory Committee. Students awarded a failing grade for the Qualifying Exam will be dismissed from the Program.

B. Preliminary Exam. The Preliminary Exam minimally consists of a seminar on the Qualified Proposal before the department and academic community at large. The seminar should describe and defend the rationale and planned experiments of the research plan. However, students should also be prepared for in-depth questions on the area of research and more general question on cellular biology. The seminar is followed by an oral defense before the Research Advisory Committee. In the ideal situation, the Department would like all Committee members to be present. A copy of the Qualified Proposal should be submitted to the Committee at least two weeks before the seminar and oral defense.

In addition to the seminar and oral defense, the Research Advisor can require a student to sit for a one-to-two day written portion of the Preliminary Exam, consisting of essay questions submitted by members of the Research Advisory Committee. Following completion of the seminar, oral exam, and written exam, the Committee will determine if the student has passed. A passing grade requires agreement of four voting members of the Committee that the student has successfully defended the proposal in the seminar and oral defense and has also exhibited sufficient breadth and depth and of knowledge on the research area, both orally and in any written exam. If fewer than four Committee members agree, the Committee can recommend a provisional passing grad or failure. A provisional pass can require revision of the proposal and a second oral or written exam. The Committee will provide the student with reasons why revision of the proposal and additional exams are required. After pass all components of the Preliminary Exam, students become “Doctoral Candidates” to proceed with dissertation research. Any deviation from the program outlined in the proposal must be approved by the student's Research Advisory Committee.

C. Procedure for Appeal. The Graduate Advisory Committee and Research Advisory

Committee must provide students who fail the Qualifying and Preliminary Examination, respectively, with the reasons for failure, in writing. Failing students are subject to dismissal. However, a student may appeal to the Graduate Advisory Committee for redress. A majority approval of the Committee is required for student to retake any portion of the Qualifying and Preliminary Exams. Students who fail the oral portion of the Exams will be re-examined orally; this must occur within two months of the original exam. Failure to pass the second exam will result in dismissal from the program.

XI. PREPARATION AND DEFENSE OF THE DOCTORAL DISSERTATION

A. Quality of the Doctoral Research. The dissertation research must be a contribution to the field generating original findings addressing a fundamental question or questions. It is expected that the major substance of the study will be published in a well-regarded journal and that the student will present his/her research findings at regional, national or international conferences.

B. Preparation and Defense of the Doctoral Dissertation. The dissertation should be prepared with guidance from the Research Advisor and Advisory Committee. Upon completion of the dissertation, the student should provide copies to all members of the Committee at least two weeks before the scheduled date of the Defense and Final Examination. During the time, the student should be available to provide information or clarifications requested by Committee members. The Research Advisor should contact each member of the Advisory Committee and determine whether the dissertation is sufficiently satisfactory to allow scheduling of the Defense. If two or more members of the Committee deem the dissertation to be incomplete and/or of poor quality, the Committee will recommend specific changes that must be made prior to scheduling the Defense.

C. Defense and Final Examination. *Prior to the Dissertation Defense and Final Examination, a copy of the dissertation must be made available to all departmental faculty members.* Faculty can submit questions to the Research Advisory Committee for answering at the Defense and also ask them at the Final Research Seminar.

To schedule the Defense and Final Examination, the Advisor must complete a "Request for Dissertation/Thesis Defense and Final Examination" form and submit it and a copy of the dissertation abstract to the Department Head, who must review the information, sign the form and submit the documents to the Dean. *The approved form and abstract must be received by the Dean two weeks prior to the date of the Defense and Final Examination*.

The Defense and Final Examination should focus on the dissertation research and on the written document, and it will be conducted by the Research Advisory Committee. Students can expect to answer questions about the rationale for the work, the final results and validity of the conclusions. At the discretion of the Advisory Committee, the Defense and Final Examination might include general questions on the major and minor fields of study, but this is not common. After the student has answered questions about the dissertation, the Advisory Committee will discuss the dissertation and final revisions that may be necessary and the voting members will vote by ballot whether or not to accept the dissertation (with all recommended revisions). No more than one negative is vote permitted. If the dissertation is deemed unacceptable or the student is judged to have failed the oral examination, the Advisory Committee must provide the student with a written explanation of the reasons for failure. Copies must also be provided to the Head of the Department, the Graduate Program Director, and the Dean of the Graduate School.

D. Final Research Seminar and Certification. *Students are required to present a Final Research Seminar before the department and academic community at large*. Students typically present this seminar before the Defense and Final Examination when they are deemed ready by and with permission of the Advisory Committee. The purpose of the final seminar is to allow the student to demonstrate the high quality of the research and to allow oral examination of the student by the academic community. When the student has passed the Dissertation

Defense/Final Examination and the Final Research Seminar, he/she will be certified to the Graduate Faculty and Chancellor as having met all requirements for the degree of Doctor of Philosophy in Cellular Biology & Anatomy. The student's Research Advisor must complete the form "Dissertation/Thesis Defense - Final Examination Report" and have the form signed by each member of the student's Advisory Committee and by the Department Head, who will forward the form to the Dean.

XII. OTHER SCHOLARLY ACTIVITIES

Graduate students are also expected to play an active role in maintaining the research environment of the department and university. In addition to research, coursework, and seminars, all graduate students participate in the Cellular Biology journal club each fall and spring semester. Attendance is mandatory and any absence must be pre-approved by the journal club director. Faculty advisors may also require students to participate in other journal clubs. Ph.D. students are expected to stay abreast of major developments in their field and in related biomedical sciences, present research findings at professional conferences, assist other students and staff in the use and maintenance of instruments, and assist in recruiting new students.

XIII. TEACHING

Teaching is an important aspect of both the Ph.D. and M.S. training programs, all students are required to serve as teaching assistant once per year in Medical Neuroanatomy laboratory course and one of three gross laboratory courses (body cavities, musculoskeletal, head & neck) from the second year until they reach “Exam Only” status. Senior students (i.e. Ph.D. Candidates) will be encouraged to hone their teaching skills by giving lecture(s) to Allied Health students. Ph.D. Candidates on Exam Only status are not to be participating in any teaching activities in order to give them the time necessary to compile their dissertations.

XIV. APPROPRIATE CONDUCT AND DRESS

Students must maintain high ethical standards in their personal conduct toward faculty, fellow students and staff. Research data must be maintained in a dated notebook with full explanation of methods and procedures used. Notebooks should be available for inspection at any time by the faculty and should not be removed from campus.

During the normal working hours (8am – 5pm), students should dress appropriately for a professional school. Shorts and tank tops cannot be worn during the workday. In laboratories, appropriate dress can include a lab coat and leather shoes with closed toes, gloves, and a mask, depending on safety requirements. *In compliance with safety requirements, no shorts, eating or drinking are permitted in research laboratories at any time.*

XV. DESCRIPTION OF COURSES

CEBIO 200C *Integrative Structural Biology* (Histology, 3 credits, letter grade). An introduction to the microscopic anatomy and function of human tissues. Course director: Dr. Manikandan Panchatcharam

CEBIO 216 *Human Developmental Biology* (3 credits, letter grade). Lectures on human development correlated with films and laboratory demonstrations. Participation of students is required in the form of discussions and presentations. Course director: Dr. David DeSha

CEBIO 223 *Molecular Basis of Disease* (2 credits, letter grade). This course integrates basic science knowledge obtained by students in the first year of graduate school with mechanisms of disease progression. The course consists of five modules taught by the basic science faculty in the Division of Research of the Department of Pathology. Lectures cover 1) what is known about the disease from a clinical perspective; 2) unanswered clinical questions that need to be addressed from a basic science perspective; 3) what is known about the basic mechanisms of disease initiation and progression. Course director: Dr. Kevin McCarthy.

CEBIO 224 *Molecular Basis of Disease Journal Club* (1 credit, S/U). The journal club serves to

integrate basic science knowledge with mechanisms of disease progression. Dr. Kevin McCarthy

CEBIO 250 ***Research/Lab Rotation*** (1-9 credits, S/U). A laboratory course in which students either rotate through faculty laboratories and become acquainted with the research area and laboratory routines in each; or perform research in their selected dissertation lab for the qualifying and preliminary exams. Course Director: Dr. Hong Sun

CEBIO 260 ***Comprehensive Human Structural Biology*** (5 credits, letter grade). A lecture- and human dissection-based course that provides comprehensive information on the structure and function of the human body cavities, their organs, blood, supply and innervation, and on the entire musculoskeletal system. Course director: Dr. Sumitra Miriyala

CEBIO 261 ***Human Structural Biology (Body Cavities)*** (3 credits, letter grade). A lecture- and human dissection-based course that provides comprehensive information on the organs within the thoracic, abdominal, and pelvic cavities and on the topographic relationships between the organs, blood supply and innervating nerves. Course director: Dr. Sumitra Miriyala

CEBIO 262 ***Human Structural Biology (Musculoskeletal and Head & Neck)*** (3 credits, letter grade). A lecture- and laboratory dissection-based course that provides comprehensive information on the musculoskeletal system and topographic relationships the blood and nerve supply. Course director: Dr. Sumitra Miriyala

CEBIO 265 ***Human Neuroanatomy*** (2 credits, letter grade). A lecture- and laboratory-based course providing comprehensive information on 1) histology of the nervous system; 2) sensory systems; 3) motor systems; 4) cerebral cortex. Course director: Dr. Hong Sun

CEBIO 266 ***Essential Neuroanatomy for Basic scientists*** (2 credits, letter grade). A lecture- and laboratory-based neuroanatomy course tailored for graduate students, which provides comprehensive information on 1) histology of the nervous system; 2) sensory systems; 3) motor systems; 4) cerebral cortex. The course also includes labs in which rodent and human systems are compared. Course Director: Dr. Kathryn Hamilton

CEBIO 289 ***Current Topics in Cell Biology*** (1 credit, S/U). A Fall and Spring semester journal club, in which students keep abreast of recent contributions to the research literature, learn how to critically evaluate experimental data and hone public speaking skills. Course director: Dr. David Krzywanski

CEBIO 290A/B ***Seminar*** (0.5 credits, S/U). Students attend and participate in seminars conducted by the Department of Cellular Biology & Anatomy. Emphasis is placed upon current research findings. Periodically, students also present a seminar on their current research or on a subject under discussion. 290A is the Fall course; 290B is the Spring course. Course director: Dr. Manikandan Panchatcharam

CEBIO 300 ***Thesis Research*** (1-9 credits, S/U). Students in the Clinical Anatomy track within the Master in Biomedical Sciences complete a research project commensurate with completion of an M.S. thesis, under the direction of an approved graduate faculty mentor and Research Advisory Committee approved by the Graduate Advisory Committee and Chair of the Department. Course director: Dr. Hong Sun

CEBIO 400 ***Dissertation Research*** (1-9 credits, S/U). Students in the doctoral program gain in-depth experience in research development, design, methodology and complete a research project commensurate with generating a dissertation, under the direction of an approved graduate faculty mentor and Research Advisory Committee approved by the Graduate Advisory Committee and Chair of the Department. Students can register for this course ONLY after they have been accepted for Ph.D. candidacy. Course director: Dr. Hong Sun

XVI. GRADUATE FACULTY OF THE DEPARTMENT

PRIMARY FACULTY

Hamilton, Kathryn A. Ph.D., Professor of Cellular Biology & Anatomy

Research Interests: Structure and function of the olfactory system; contributions of excitatory and inhibitory synapses to integration of information in the brain; neuronal plasticity and recovery from trauma and disease

Krzywanski, David M. Ph.D., Assistant Professor of Cellular Biology & Anatomy

Research Interests: Exploring mitochondrial functional variation as a contributor to racial differences in cardiovascular disease susceptibility

McCarthy, Kevin J. Ph.D., Professor and Chair of Cellular Biology & Anatomy

Research Interests: Extracellular matrix molecules in diabetic glomerulosclerosis

Miriyala, Sumitra. Ph.D., Associate Professor of Cellular Biology & Anatomy

Research Interests: Mechanisms by which oxidative stress activate mitochondrial retrograde signaling in cardiac tissues under life and death conditions

Panchatcharam, Manikandan. Ph.D., Associate Professor of Cellular Biology & Anatomy

Research interests: Lipids that play a major factor in blocking blood vessels leading to heart attack

Rodgers, Krista M. Ph.D., Assistant Professor of Cellular Biology & Anatomy

Research Interests: *Neurodegeneration/regeneration following stroke, epilepsy, traumatic brain injury, and neuroinflammation*

Sun, Hong. Ph.D., Associate Professor of Cellular Biology & Anatomy

Research Interests: Influences of alcohol consumption and obesity on cerebrovascular structure, function and ischemic brain injury

ADJUNCT FACULTY

Dunn, Sharon. P.T., Ph.D., Dean of School of Allied Health Professions, LSUHSC-Shreveport

Research Interests: Orthopaedics and sports medicine with a special concentration in the biomechanics of the lower extremity

Kevil, Christopher K. Ph.D., Professor of Pathology, LSUHSC-Shreveport

Research Interests: Regulation of vascular redox biology involving nitric oxide and hydrogen sulfide with regard to blood vessel growth and chronic inflammation

Lin, Hung Wen (Kevin). Ph.D., Associate Professor of Neurology, LSUHSC-Shreveport

Research Interests: General neurology, stroke, cerebral ischemia, neuroprotection, angiogenesis, and cerebral blood flow

Orr, Anthony W. Ph.D., Professor of Pathology, LSUHSC-Shreveport

Research Interests: Adhesion signaling in vascular cell biology and atherosclerosis

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Department of Microbiology and Immunology

https://www.lsuhs.edu/departments/school-of-graduate-studies/microbiology-and-immunology

Dr. Martin J. Sapp, Department Head
Professor, Willis Knighton Chair of Molecular Biology
Tel: 318-675-5750 or 318-675-4781
E-mail: martin.sapp@lsuhs.edu

The program leading to the PhD emphasizes research training at the molecular and cellular levels in several disciplines to prepare the student for a challenging career directing original independent research. While the program of study is tailored to the individual needs of the student, he or she is required to complete a series of core courses that provides a broad background in Biochemistry, Cell Biology, Genetics, Prokaryotic and Eukaryotic Molecular Biology, Immunology, Virology, Bacteriology, Pathogenesis of Infectious Diseases, and Research Technologies. The program also emphasizes the written and oral communication skills needed to excel in the scientific community. Active participation in departmental seminars and at least one of the four journal clubs is required of all students. In addition, each student must prepare two research proposals as part of the process of learning how to design experiments, to evaluate the scientific literature in a critical manner, and to begin to master the skills of scientific writing. The most important components of the PhD training program are the research project and dissertation. They are completed under the guidance of the student's Faculty Advisor and Doctoral Advisory Committee and must represent original and independent scholarly work.

An individualized program of study is developed for each graduate student through regular consultation with a faculty Advisory Committee. This program consists of lecture and laboratory courses, seminars, journal clubs, preparation of research proposals, and independent research. Upon entry into the Doctoral Program, the student becomes acquainted with the research activities of each faculty member and then selects three faculty research laboratories for rotating during the Fall semester. At the end of the first semester, the student selects the research laboratory in which he/she will complete a research project for submission in his/her dissertation. The Faculty Research Interests section lists the focus of research in each of the laboratories.

OUTLINE OF PHD PROGRAM BY YEAR

YEAR 1: FALL SEMESTER

New Student Orientation
Introduction to Research by Each Faculty Member
Initiate Laboratory Rotations with Three Faculty Members Selected by the Student
IDSP #110: Biochemistry and Molecular Biology (3 cr.)
IDSP #116: Methods in Biomedical Sciences: Biochemistry and Molecular Biology (1 cr.)
IDSP #117: Methods in Biomedical Sciences: Recombinant DNA (1 cr.)
IDSP #118: Cells and Signaling (3 cr.)
IDSP #240A: Ethics and Professionalism I (0.5 cr.)
MICRO #298: Weekly Department Seminar (1 cr)
Rotations through the Weekly Journal Clubs (Micro #292 or Micro #295)
Select Topic and Title for First Library Seminar
Roundtable on How to Prepare and Present a Seminar
Meet with All Visiting Scientists and Seminar Speakers
Select Faculty Advisor (Memo to Select Faculty Advisor **due mid-December**)

YEAR 1: SPRING SEMESTER

MICRO #297: Immunology (2 cr.)

MICRO #291: Bacteriology and Pathogenesis of Infectious Diseases (2 cr.)
MICRO #276: General and Molecular Virology (2 cr.)
MICRO #289: Pathogenesis of Infectious Diseases II (2 cr.)
MICRO #298: Seminar, Present First Seminar on a Library Topic (1 cr.)
IDSP #113: Genetics (1 cr.) – *optional*
IDSP #119: Gene Expression (1 cr.) – *optional*
Join and Participate in a Weekly Journal Club (Micro #292 or Micro #295)
Meet with All Visiting Scientists and Seminar Speakers
Initiate the Dissertation Research Project
Weekly Lab Meetings with Advisor and Members of the Laboratory
Establish the Advisory Committee of Five Faculty Members (Request to Establish Advisory Committee Form **due by March 1st**)
Hold Initial Meeting with Advisory Committee (**due by May 1st**)

YEAR 1: SUMMER
IDSP #240B: Ethics and Professionalism II (0.5 cr.)
Select Topic and Title for Second Library Seminar
Participate in Weekly Journal Club (Micro #292 or Micro #295)
Meet with All Visiting Scientists and Seminar Speakers
Conduct Research at the Bench on the Dissertation Research Project
Weekly Lab Meetings with Advisor and Members of the Laboratory
Complete Individual Development Plan (IDP) and Discuss with Mentor (**due by July 31st**)

YEAR 2: FALL SEMESTER
IDSP #235B: Grant Writing (1 cr.)
MICRO #298: Seminar, Present Second Seminar on a Library Topic (1 cr.)
IDSP #226: Basic Biostatistics – *optional*
IDSP #227: Advanced Biostatistics – *optional*
Participate in Weekly Journal Club (Micro #292 or Micro #295)
Meet with All Visiting Scientists and Seminar Speakers
Conduct Research at the Bench on the Dissertation Research Project
Weekly Lab Meetings with Advisor and Members of the Laboratory

YEAR 2: SPRING SEMESTER
MICRO #298: Seminar, Present First Research Seminar (1 cr.)
Hold Second Meeting with Advisory Committee on Research Progress
Qualifying Exam: Present Two Potential Topics to Advisory Committee (**due by May 1st**)
(Request for Preliminary Exam Form **due 2 weeks in advance of meeting**)
Qualifying Exam: Faculty Decision on Qualifying Exam Proposal Must Be Made **by June 1st**
Preliminary Exam: Occurs at Advisory Committee Meeting if Qualifying Exam is Accepted
(Report of Preliminary Exam Form **due by June 1st**)
Participate in Weekly Journal Club (MICRO #292 or MICRO #295)
Meet with All Visiting Scientists and Seminar Speakers
Conduct Research at the Bench on the Dissertation Research Project
Weekly Lab Meetings with Advisor and Members of the Laboratory

YEAR 2: SUMMER
Participate in Weekly Journal Club (MICRO #292 or MICRO #295)
Meet with All Visiting Scientists and Seminar Speakers
Conduct Research at the Bench on the Dissertation Research Project
Weekly Lab Meetings with Advisor and Members of the Laboratory
Begin Writing Research Proposal on Doctoral Dissertation Topic
Complete Individual Development Plan (IDP) and Discuss with Mentor (**Due by July 31st**)

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YEAR 3:

Micro #298: Seminar on Doctoral Research Proposal (1 cr.)
Review of Doctoral Research Proposal with Advisory Committee and Outside Reviewer (Report of Dissertation Proposal Form **due following the meeting**)
Apply for Intramural Fellowship (**Due early-October or early-April**)
Participate in Weekly Journal Club (MICRO #292 or MICRO #295)
Meet with All Visiting Scientists and Seminar Speakers
Conduct Research at the Bench on the Dissertation Research Project
Weekly Lab Meetings with Advisor and Members of the Laboratory

FUTURE YEARS UNTIL GRADUATION

Research at the Bench on the Dissertation Research Project
Annual Seminar on Research
Weekly Journal Club
Write Manuscripts for Publication
Presentation of Research at Regional, National, and International Meetings
Weekly Lab Meetings with Advisor and Members of the Laboratory
Meet with All Visiting Scientists and Seminar Speakers
Complete Individual Development Plan (IDP) and Discuss with Mentor (**Due by July 31st**)
Write and Defend Dissertation (Request for Dissertation Defense and Final Examination Form **due at least 2 weeks in advance of the meeting**) (Dissertation Defense Final Examination Report **due following the Defense Examination**)

ALL FORMS CAN BE FOUND AT MOODLE.LSUHS.EDU

FACULTY RESEARCH INTERESTS

Dr. Jason M. Bodily Associate Professor	Gene Regulation by Human Papillomaviruses
Dr. Monica Cartelle Gestal Assistant Professor	Immunomodulation by Bordetella ssp
Dr. Stanimir S. Ivanov Assistant Professor	Molecular Pathogenesis of Legionella
Dr. Rohit Jangra Assistant Professor	Molecular Pathogenesis of Bunyaviruses
Dr. Jeremy P. Kamil Associate Professor	Human Cytomegalovirus Replication and Cell Tropism
Dr. Seong Kee Kim Research Associate Professor	Gene Expression and Regulatory Proteins of Equine Herpesvirus 1 and Varicella Zoster Virus
Dr. David J. McGee Associate Professor	*Helicobacter pylori* and *Arcanobacterium haemolyticum* Host-Pathogen Interactions
Dr. Martin I. Muggeridge	Molecular Biology of Epstein-Barr Virus Glycoproteins and

Associate Professor	Membrane Fusion During Virus Entry and Spread
Dr. Kenneth M. Peterson Associate Professor	Molecular Pathogenesis and Intestinal Colonization by *Vibrio cholerae* and Cholera Vaccine Development
Dr. Martin J. Sapp Professor, Willis Knighton Chair of Molecular Biology	Virus Cell Interactions, Molecular Pathogenesis of Oncogenic Human Papillomaviruses
Dr. Rona S. Scott Associate Professor, Mingyu Ding Professor of Microbiology	Mechanisms for Epstein-Barr Virus-Mediated Tumor Progression
Dr. Matthew D. Woolard Associate Professor O'Callaghan Family Professor	Lipid Metabolic Regulation of Macrophage Function During Cardiovascular Disease
Dr. Andrew D. Yurochko Professor, Carroll Feist Chair of Viral Oncology	Human Cytomegalovirus Host Cell Interactions
Dr. Dennis J. O'Callaghan Boyd Professor Emeritus	

REGULATIONS OF THE DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY

The regulations and minimal requirements for the Doctor of Philosophy degree are described in the Catalog/Bulletin of LSU Health Sciences Center. In addition, administrative procedures pertaining to registration, preliminary examination, final examination/dissertation defense, grading, and student travel for students at LSUHSC-Shreveport are described in the folder "Policies and Procedures" prepared by the Dean, School of Graduate Studies, LSUHSC-Shreveport. The student should be aware of these policies and procedures as well as the fact that specific forms must be completed to document the student's academic progress.

The student should appreciate that the Catalog/Bulletin describes minimal requirements for the doctoral degree and that additional and more stringent requirements are imposed by the Department of Microbiology and Immunology. This document describes these requirements and regulations.

Residence Requirement: A minimum of three full years is required for completion of the doctoral degree. In most cases, especially for students who enter the doctoral program without prior graduate level experience and training, a period of four to five years is usually needed for completion of the doctoral degree.

Part-time Students: The policy of the Department is that no part-time students will be allowed to enroll in the program. Students are expected to devote all their attention and energy to their research and to fulfilling the requirements for the graduate degree. Therefore, it is expected that students will not seek outside jobs and/or part-time employment. With the permission of the Department Head, approval of the Faculty, and consent of the Dean, a student may be allowed to take a leave of absence from the program; in this case, leave time will not apply to the residence requirement.

Evaluation of First Year Students: The major goals of the first year are for the student to successfully complete all required core courses offered during the year; to develop communication skills by participating in the Departmental journal clubs and seminar program; to gain research experience during the rotations in faculty laboratories in the Fall semester; to select a Faculty Advisor and initiate the doctoral research project; and to establish an Advisory Committee during the Spring semester. The first two semesters of the first year are considered a probationary period in that the achievements and academic record of each first-year student are carefully reviewed by the Department graduate faculty in the early summer.

Only students who are in good academic standing, who are demonstrating significant progress toward the doctoral degree, and who are meeting the expectations for a student working toward the highest academic degree will be invited to remain in the doctoral program with the status of "good academic standing and non-probation". A student who fails to meet any of these criteria may be dismissed from the doctoral program or be placed on probationary status, by a decision of the faculty. The policy concerning a student whose overall grade point average or Departmental grade point average is below a B is stated below.

Policy on Academic Performance: The PhD Core Curriculum consists of eight courses taken for a letter grade and other courses taken as S/U. The student must complete all IDSP courses (IDSP #110, #116, #117, #118; total of 8 credits) and the four Microbiology courses (total of 8 credits). All students are expected to remain in good academic standing, to make progress toward their degree, and to follow the recommendations of their Faculty Advisor and Advisory Committee. Students must maintain an overall Grade Point Average of B in all coursework. In the case of a student whose grade point average is below a B (3.0 on the 4.0 scale), the faculty may decide to dismiss the student from the doctoral program or to place the student on academic probation. A student who earns a grade of D or F in any one of the Core Courses is subject to dismissal. A student who earns a grade of C in more than 6 credits of the Core Courses is subject to dismissal.

A student who is placed on academic probation may be given one academic year at most to achieve an overall B average. In some cases, the period of academic probation may be less than one year, as decided by the faculty. A student who fails to restore his/her overall Grade Point Average by the end of the academic probation period set by the faculty will be dismissed from the doctoral program. Students who are in good academic standing and who are demonstrating significant progress toward the doctoral degree will receive the highest priority for stipend support and waiver of tuition fees. A student who is on academic probation is not guaranteed stipend support from the Department or the Dean and is not guaranteed waiver of tuition fees.

The student should realize that coursework is not the only measure of academic performance at the graduate level. A student who fails to make progress in meeting other requirements such as acceptable performance on the Qualifying Examination or the Preliminary Examination, preparation of a high-quality Research Proposal, and/or fails to demonstrate a proper work ethic and full commitment to his/her career may be placed on academic probation. In these circumstances, the student will be notified in writing of his/her deficiencies and may be dropped from the program if the recommendations of the Advisory Committee and/or Department Head are not met in a timely manner.

Policy on Stipends: The awarding of stipend support to doctoral students is an academic decision made by the student's Advisor in consultation with the Department Head and the student's Advisory Committee. The Dean of the School of Graduate Studies is informed in advance if a decision is made to withdraw stipend support. Stipend support may be withdrawn if a student is not in good academic standing. To be in good academic standing and merit financial support, a student must complete formal courses with a GPA of 3.0 or higher, demonstrate commitment to their academic responsibilities, make sufficient progress toward the degree, exhibit a proper work ethic, and adhere to a code of ethical

behavior expected of biomedical scientists in all research and academic activities as explained in the Student Honor Code.

Ethical Behavior: Graduate students are expected to adhere to the spirit and regulations of the Student Honor Code of this Health Sciences Center. A student who cheats on an examination, fabricates experimental findings, and/or misrepresents scientific data is subject to dismissal according to the procedures of the Student Honor Code. Graduate students are expected to meet the high standards expected of biomedical scientists in all aspects of their research, including the humane treatment of laboratory animals, the careful and proper use of isotopes and chemicals, and the vigilant handling and disposal of infectious agents and recombinant DNA molecules. Students are required to follow all institutional policies. Violation of institutional policies that would warrant dismissal of an employee would also support dismissal of a graduate student from the program.

First year graduate students will be expected to enroll in the course IDSP #240: Ethics and Professionalism in the first year. This course is taken as Satisfactory/ Unsatisfactory and is not included in the calculation of the grade point average (GPA).

M.S. Program: The Department of Microbiology and Immunology does not admit students directly into a Master of Science (M.S. degree) graduate program. A student in the PhD Program may petition the Department Head and the Faculty for approval to transfer from the Departmental PhD program to the M.S. program in Biomedical Sciences. Approval is unlikely to be granted except in very special circumstances. A student in the M.S. program is not eligible for stipend support, a tuition waiver, or any Departmental funds, however, may receive support if approved by the Department Head and the Faculty.

Attitude and Responsibility: Graduate students are expected to behave in a mature and responsible manner and to exhibit a spirit of cooperation with the faculty, their fellow students, and all members of the Department. Students should take an active part in fostering the development of the Department and its graduate program and in promoting the research environment of the University. This participation should be at all levels – from helping to maintain research equipment and facilities, to assisting in the recruitment of new graduate students, to helping fellow students in learning new techniques, etc. The student should realize that his/her professionalism as a developing scientist enhances the reputation of the Department and LSU Health Sciences Center and that the proper environment for productive research is attained by collaborative efforts of all members of the Department, especially its students.

Forms to Document Progress: Paperwork to document the student's progress is a requirement of the Graduate Program. Specific forms must be completed, approved by the Department Head (and in some cases by members of the Advisory Committee), and then approved by the Dean of the School of Graduate Studies. These forms can be downloaded from moodle.lsuhscs.edu and include the following:

- **REQUEST TO ESTABLISH ADVISORY COMMITTEE** – This form must be completed by March 1st of Year 1. The first year student must have the first meeting of their Advisory Committee by May 1st.
- **REQUEST FOR PRELIMINARY EXAMINATION** – The Preliminary Exam immediately follows the Qualifying Examination. The student must have the meeting of their Advisory Committee to discuss two submitted topics for the Qualifying Exam (written grant proposal in the NIH R21 format) by May 1st of Year 2 at the latest. Thus, this form should be completed at the meeting of their Advisory Committee (at least two weeks before the Qualifying Exam takes place).
- **REPORT OF PRELMINARY EXAMINATION** – The members of the Advisory Committee must sign the form and indicate if their vote is P (Pass) or F (Fail).
- **REPORT OF DISSERTATION PROPOSAL** – Each Advisory Committee member and the Outside Reviewer must sign the form and indicate if their vote is P (Pass) or F (Fail). Any additional requirements (e.g. revision of the Proposal) should be explained on the form.

- **REQUEST FOR DISSERTATION/THESIS DEFENSE AND FINAL EXAMINATION** – The signature of each Advisory Committee member indicates that they have received the complete dissertation (or thesis) at least two weeks before the defense and that it is appropriate for the defense to be scheduled.
- **DISSERTATION/THESIS DEFENSE FINAL EXAMINATION REPORT** – Each member of the Advisory Committee should sign this form ONLY if they judge that the dissertation (or thesis) meets the high standards for the PhD degree and that the student has satisfactorily defended the document. In the Department of Microbiology and Immunology, the Defense Examination should occur BEFORE the final Dissertation Seminar. Once the student has passed the Defense examination, flyers announcing the Dissertation Seminar may be prepared and distributed.
- **REQUEST FOR STUDENT TRAVEL FUNDS** – Note that a Prior Approval Forma and the student's meeting abstract must be attached.

ALL FORMS CAN BE FOUND AT MOODLE.LSUHS.EDU

REQUIREMENTS FOR THE DOCTOR OF PHILOSOPHY DEGREE IN MICROBIOLOGY AND IMMUNOLOGY

The Doctor of Philosophy degree is the highest academic degree. It is conferred only for work of distinction in which the student displays powers of original scholarship. The major emphasis of the doctoral program in the Department of Microbiology and Immunology is to provide an environment for the student to learn how to think; to ask questions and to answer them in the laboratory and library; to write and communicate; and to develop into a mature, articulate, and competent biomedical scientist.

It is important that the student realizes that he/she must make satisfactory progress in order to remain in the doctoral program. The student's Advisor, the members of his/her Advisory Committee, and the Departmental faculty work in concert with the Department Head to review the qualitative and quantitative academic progress of each student. A student who fails to meet the Departmental guidelines for making continuous progress toward his/her degree or who does not follow the specific recommendations of his/her Advisory Committee is subject to being placed on academic probation or being dismissed from the graduate program.

THE DOCTORAL PROGRAM CONSISTS OF EIGHT MAJOR COMPONENTS:

1. COURSEWORK
2. SEMINAR
3. JOURNAL CLUB
4. RESEARCH
5. QUALIFYING AND PRELIMINARY EXAMINATIONS
6. RESEARCH PROPOSAL
7. RESEARCH DISSERTATION
8. OTHER SCHOLARLY ACTIVITIES

1. COURSEWORK FOR THE DOCTORAL DEGREE

Although the emphasis of the doctoral training program is research, every student is expected to have a firm understanding of current concepts, experimental approaches, and recent developments in the

fields of microbiology, cell and molecular biology, and molecular genetics. To obtain this foundation, the student is required to complete a core curriculum of graduate courses and to supplement this core with other courses recommended by his/her Advisor and the Advisory Committee.

REQUIRED COURSEWORK FOR THE PHD DEGREE

A. FORMAL CORE COURSES:

IDSP #110	Biochemistry and Molecular Biology (3 cr.)
IDSP #116	Methods in Biomedical Sciences: Biochemistry & Molecular Biology (1 cr.)
IDSP #117	Methods in Biomedical Sciences: Recombinant DNA (1 cr.)
IDSP #118	Cells and Signaling (3 cr.)
MICRO #297	Immunology (2 cr.)
MICRO #291	Bacteriology and Molecular Pathogenesis (2 cr.)
MICRO #276	General and Molecular Virology (2 cr.)
MICRO #289	Molecular Pathogenesis of Infectious Diseases (2 cr.)

IDSP #113	Genetics (1 cr.) – *optional*
IDSP #119	Gene Expression (1 cr.) – *optional*
IDSP #226	Basic Biostatistics (1 cr.) – *optional*
IDSP #227	Advanced Biostatistics (1 cr.) – *optional*

B. JOURNAL CLUB COURSES

The student must be enrolled and/or participate fully in one credit of a Journal Club course every semester. These courses are graded as S/U and include:

MICRO #292	Discussions in Advanced Virology (1 cr.) Meets weekly
MICRO #295	Discussions in Bacteriology (1 cr.) Meets weekly

Periodically, other Journal Club courses may be offered. These courses are graded as S/U and include:

MICRO #293	Discussions in Advanced Immunology (0.5 cr.) Meets fortnightly
IDSP #203	Discussions in Cancer Biology (0.5 cr.) Meets fortnightly

C. RESEARCH AND SEMINAR COURSES

MICRO #298	Seminar (1 cr.; S or U)
MICRO #400	Dissertation Research (1 to 9 cr.; S or U)

Minimal requirement is presentation of two library-type seminars, one each in the first and second years, and a yearly research seminar, one per year starting in the Spring semester of the second year.

D. ETHICS

IDSP #240A	Ethics and Professionalism I (0.5 cr.; S or U)
IDSP #240B	Ethics and Professionalism II (0.5 cr.; S or U)

Credits for Courses: The amount of credit given for the completion of a course is based on the number of lectures or recitations per week for one semester of seventeen weeks. According to the Administrative Procedures of the School of Graduate Studies, effective on July 1, 1987, one credit represents 17 hours of lecture, recitation, and examination. Two hours of laboratory work is considered the equivalent of one

lecture or recitation hour. Thus, a 3-credit formal course should consist of at least 51 total contact hours (lectures, discussions, and examinations).

Grades in Coursework: Letter grades (A, B, C, D or F) will be given in most cases in formal courses which are courses that consist of lecture, regularly scheduled class meetings, and written examination(s). Special Topics and Methods courses given for letter grades must be approved in advance by the Curriculum Committee and the Dean. No letter grade may be given for Research, Seminar, or Journal Club courses; these courses are graded as "Satisfactory" and “Unsatisfactory" which are indicated by "S" and "U", respectively.

2. SEMINAR PROGRAM

MICRO #298 Seminar (1 cr.; S or U)

Importance of a Seminar Program: Seminar is the one occasion in which all faculty, postdoctoral researchers, and graduate students meet weekly and discuss research findings and new developments in the disciplines of Microbiology and Immunology. It is an important component of a training program for the predoctoral and postdoctoral student and is a special opportunity for the graduate student to demonstrate his/her abilities as a teacher and biomedical scientist, to learn to present and discuss experimental data, and to think on his/her feet. A good seminar program in which all researchers within the Department participate can be an enjoyable activity that fosters unity and mutual respect among the participants and provides an atmosphere that promotes research and collaborative investigations.

Policy Statement for Graduate Students: Every graduate student in the Department of Microbiology and Immunology is required to present seminars of two types:

1) Library Seminars – Minimum of two required for the doctoral student: In a library seminar, the student discusses the current status of an area of research and then presents the findings from one or two recent papers and demonstrates how these recent data further our understanding of the topic. The student is expected to give a lucid background of the topic, to explain the experimental approaches and research findings of the papers selected for presentation, and to evaluate whether the new data contribute to our understanding of the problem.

Every doctoral student must present at least two library seminars, one in the Spring semester of the first year and one in the Fall semester of the second year. After the second library seminar, the faculty will decide whether the two library seminars were of a quality sufficient to excuse the student from presenting additional library seminars. Only students who present high quality seminars will be excused from the requirement of presenting additional library seminars. The topic of the library seminars **should not be directly related to the student's research** in order to allow developments in other areas of microbiology to be brought to the attention of the faculty and students and to encourage the student to be knowledgeable in several areas of microbiology and related sciences.

2) Research Report Seminars – One per year, starting in the second year: The student must present at least one seminar each year, starting in the Spring semester of the second year, on his/her research. The first research seminar consists of a statement of the problem, a presentation of data collected to date, and plans for future experiments.

Additional Requirements for Seminar: The topic for presentation and the date of the seminar must be approved by the faculty member in charge of the seminar (Seminar Coordinator). To have a topic approved for a library seminar, the student must submit to the seminar coordinator the topic and references of at least two key papers that will be presented at the seminar. Students who fail to have topics approved by the deadline will be assigned topics by the Faculty Seminar Coordinator.

Ten days prior to the seminar, the student must distribute a one page typed Abstract to all faculty, postdoctoral trainees, and graduate students. The Abstract should give the topic, date, time, faculty sponsor, and room location of the seminar, and list the key paper or papers that will be presented. The Abstract should be written in a style and manner that will create interest in the seminar and encourage people from other departments to attend.

It is the responsibility of the student to type the Seminar Abstract, to proofread the Abstract, and to arrange for copies to be made. Since copies of the Abstract will be mailed to persons on the Departmental mailing list, the Abstract must be given to the office staff at least ten days in advance of the seminar.

Format of the Seminar: A library seminar should be a presentation of research data from one or several selected papers and should be presented in a critical and informative manner such that an audience of peers can appreciate the scientific value of the research. The student is expected to read a considerable body of literature in a critical manner so that he/she has a good understanding of the field, the techniques, and the experimental approaches being used to address the key questions. The seminar, however, is not a lecture or an overview. It is a highly focused presentation of the experimental data and rationale used to further our knowledge about a specific question.

Ideally, the seminar is 45 to 50 minutes in length and starts with an informative introduction of 10 to 15 minutes to present the questions being asked and to provide background information for the audience. The body of the seminar concerns data presentation and explanation of the experimental rationale and the approach being employed to answer the questions being asked. During the seminar, especially in the concluding remarks section, the student is expected to explain how the paper(s) presented fit(s) into the field of study and to discuss the perceived limitations, strong points, and inconsistencies of the papers.

The student is expected to practice his/her seminar presentation and to prepare audio-visual aids to enhance the exchange of information. PowerPoint slides should be prepared with care, but the student should not hesitate to use the blackboard to explain a concept or illustrate a point. The seminar should never be read to the audience. The student is encouraged to practice the seminar with a tape recorder and to have a senior student or his/her Advisor attend a practice presentation. It is the student's responsibility to make certain that audio-visual equipment required for the seminar is in good working order and that the room is ready for the audience.

3. JOURNAL CLUB PARTICIPATION

One of the most profitable and enjoyable aspects of the doctoral training program is the student's participation in Journal Club. Although the format varies among the various Journal Clubs, each involves a meeting of the faculty, fellows, and students working in areas of mutual interest to discuss recent developments and techniques that relate to their research interests. Each member takes an equal number of turns in leading a discussion on how the work presented impacts the field. Journal Club presentations are usually informal and promote active and often lively discussion and exchange of ideas. Every graduate student must be a regular member of at least one Journal Club throughout his/her enrollment and must register for one credit of Journal Club every semester. Students are encouraged to participate concurrently in several Journal Clubs and to attend meetings of other Journal Clubs when a topic of interest is to be presented.

The Journal Clubs regularly available to students are:

MICRO #292	Discussions in Advanced Virology (1 cr.) Meets weekly
MICRO #295	Discussions in Bacteriology (1 cr.) Meets weekly

Periodically, other Journal Club courses may be offered, including:

MICRO #293	Discussions in Advanced Immunology (0.5 cr.) Meets fortnightly
IDSP #203	Discussions in Cancer Biology (0.5 cr.) Meets fortnightly

4. RESEARCH

MICRO #400 Dissertation Research (1 to 9 cr.; S or U)

Selection of a Major Professor by the New Student: The emphasis of the doctoral program is research, and time available for research will increase each year. New students will be introduced to ongoing research projects during the first two weeks upon entering the Program. After these meetings, each new student will select three faculty members for laboratory rotation. These rotations will allow the student to gain first-hand knowledge of the research in these selected laboratories and serve as a basis to choose his/her Advisor.

The selection of the Advisor will be made after the student completes the laboratory rotations by mid-December of the first year and provides the Department Head with a letter in which his/her choices for the faculty Advisor are listed. Every effort will be made to place the student in the laboratory of his/her choice provided the faculty member is agreeable and space and funds are available to support the student's research.

Faculty members who accept the responsibilities of having graduate students enter their laboratory and serving as the student's Advisor are expected to make every effort to obtain financial support for the student. Faculty members directing research grants will be expected to provide support for students working on the funded project. This support should be at least equal to the present level of Graduate Student Stipends and cannot exceed the maximum stipend level set by the Dean of the School of Graduate Studies and the Department Head. Tuition is waived for students supported by research grant funds or stipends.

The student is expected to devote a considerable amount of time to research at the bench and in the library even though course work is in progress. A key part of developing into a biomedical scientist is for the student to learn how to partition his/her time so that progress can be made in research while courses are in progress.

Formation of the Advisory Committee: The Advisory Committee is established early in the Spring semester of the first year. The Advisory Committee should be faculty members who have expertise in areas of research that may relate to the student's area of experimentation. The major functions of the Advisory Committee are to provide advice and support regarding the student's research and to help monitor the development of the student into a productive, careful, and competent investigator. The Advisory Committee also helps the Advisor evaluate the student's progress in his/her research and advises the student of coursework best suited to his/her needs.

The Advisory Committee must be comprised of at least five faculty members who are eligible to serve according to the rules of the Graduate School. One member is the Advisor, three other members must be on the Department’s Graduate Faculty, and one member must be from outside the Department, usually from the minor area, such as Biochemistry and Molecular Biology. The composition of all Advisory Committees will be discussed and reviewed by the Department Head and the student's Advisor before establishing the Advisory Committee. Before inviting the individual faculty to serve on the Advisory Committee, the Advisor must complete the form "Request to Establish Advisory Committee" and have the Department Head approve the Committee.

Meeting of the Advisory Committee: The Advisory Committee is expected to meet periodically, at least once per year, and as needed. The Committee will meet at the following times:

a) **YEAR 1**: In the Spring semester of the first year to review the student's planned research and progress in coursework
b) **YEAR 2**: After the first Research Seminar presented in the Spring of the second year (January-March)
c) **YEAR 2**: For the selection of the topic of the Qualifying and Preliminary Examination in the Spring of the second year (March-April)
d) **YEAR 2**: For the Qualifying Examination and the Preliminary Examination; Qualifying Examination must be in progress by May 1st of the second year
e) **YEAR 3**: For review of the Doctoral Research Proposal in the Fall of the third year
f) **YEAR 4 and beyond**: At least once each year to review the student's progress
g) For the doctoral Dissertation Examination

After each meeting, a brief report of the Advisory Committee's recommendations must be prepared in writing by the student's Advisor and provided to the student, the members of the Advisory Committee, and to the Department Head and placed in the student's file. The progress of each student will be discussed by the entire faculty at Departmental faculty meetings.

5. QUALIFYING AND PRELIMINARY EXAMINATIONS

Overview: The Qualifying Examination and Preliminary Examinations are intended to assure that the doctoral student who has successfully completed coursework requirements has the ability to identify specific questions that remain unanswered in an area of biomedical research and to develop a written research proposal that describes experimental approaches to answer these questions. The first part of this double requirement process is the Qualifying Examination that requires the student to write a Research Proposal in NIH R21 application format. In this document, the student proposes a series of experiments that will address two Specific Aims related to a clearly stated hypothesis. The proposal for the Qualifying Examination must be on a topic that is **substantially different from the student's dissertation research** and the research program of the student's Advisor (determination of topic suitability is made by the Advisory Committee). The second part of this process is the Preliminary Examination that consists of an oral examination in which the student presents and defends the written proposal and answers questions on any topic posed by members of his/her Advisory Committee. Although this Preliminary Examination will focus on the proposal, the student is expected to demonstrate a thorough knowledge of background information and to be capable of applying basic information from his/her coursework and reading of the literature to answer questions on a variety of topics.

Process: Completing the Qualifying and Preliminary Exams is a major goal of the second year, therefore students should begin to identify two potential topics once formal coursework is completed in late May of the first year. This process should involve reading the literature in areas of potential topics, consulting with the Faculty Advisor and members of the Advisory Committee, and asking faculty members and fellow students about recent developments in various disciplines of microbiology. Each student has the long period of June of Year #1 to April of Year #2 to carefully develop two topics. Ideally, the student will select the topic of the second Library Seminar (presented in the Fall Seminar Series) to be one of the topics proposed for the Qualifying and Preliminary Exam. It is reasonable to expect that a doctoral student could prepare the outline of the two proposed topics in a period of 10 months.

Timing: The student must meet with his/her Advisory Committee in the early spring of Year #2 to discuss the two possible topics for the Qualifying Examination Proposal so that the topic for the Qualifying Exam is **defined by May 1st**. Because May 1st is the final deadline for topic selection, it is strongly recommended that students meet with their committee well before this deadline, in April at the absolute latest, in case revisions are necessary or a new topic(s) must be developed. The Preliminary

Examination is expected to be held within two weeks of submission of the Qualifying Examination Proposal. **This meeting should be held before June 1st.** The student and Advisor should note that an official form must be completed TWO WEEKS in advance of the Preliminary Examination and submitted to the Graduate School Office.

Choice of Topic for the Qualifying Exam: The topic of research must be identified and developed by the student and approved by his/her Advisory Committee. The student should feel free to consult with his/her Advisor and the members of the Advisory Committee in this process of developing two topics. For each topic, a two-page description of the Significance and Background (one page) and two Specific Aims (one page) should be delivered to the members of the Advisory Committee one week prior to the Advisory Committee meeting. This meeting **should be held by May 1st of the second year**. At this meeting, the student will give a short, informal presentation of the two topics. The Advisory Committee will decide the topic to be addressed in the Qualifying Examination proposal.

Preparation of the Qualifying Examination Proposal

The student will have a maximum of four weeks to research and prepare a written document in NIH Research Application format on the approved topic. During this interval, the student will not seek any additional help or advice from anyone. It is the student's responsibility to prepare and type the Qualifying Examination proposal. Strict adherence to the NIH R21 Grant Application format should be observed. The Qualifying Examination proposal should be designed as a two-year grant application and must include:

Section of Application:	Page Limits:
• Title	
• Project Narrative	Three sentences
• Project Summary/Abstract	30 lines of text
• Specific Aims	1 page
• Research Strategy	6 pages
• Bibliography and References Cited	As needed
• Biographical Sketch	5 pages

Formatting Requirements

Please see https://grants.nih.gov/grants/how-to-apply-application-guide/format-and-write/format-attachments.htm for specific details on document formats.

In general, all documents should be presented in Arial 11 point font, with margins of 0.5-inches or larger. All pages should be numbered consecutively and sections should be combined into a single PDF document to preserve formatting.

Title

The title is limited to 81 characters, including spaces and punctuation. The title is included on PHS 398 Form Page 1 (https://grants.nih.gov/grants/funding/phs398/phs398.html); please complete the entire form and include it as the face page for your Qualifying Examination.

Project Narrative

The Project Narrative is the section of the grant application where the applicant should talk about the relevance of the proposed research project to public health. The information should be succinct (no more than 2-3 sentences long) and written in plain language understandable by a general, lay audience.

Project Summary/Abstract

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The Project Summary should include the project's broad, long-term objectives and specific aims. It should also include a description of the research design and methods for achieving the stated goals. This section is limited to 30 lines or less of text, and should be written in plain language understandable by a general audience.

Specific Aims Page

The Specific Aims should state concisely the goals of the proposed research and summarize the expected outcome(s) including the impact that the results of the proposed research will exert on the research field(s) involved. It should list succinctly the specific objectives of the research proposed, e.g., to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice, address a critical barrier to progress in the field, or develop new technology.

Find tips on structure, content, and organization of your Specific Aims page at:
http://www.biosciencewriters.com/NIH-Grant-Applications-The-Anatomy-of-a-Specific-Aims-Page.aspx

Research Strategy

The Research Strategy should lucidly explain the hypothesis to be addressed, rationale for the experimentation, experimental approaches, likely data to be obtained, data interpretation, alternate approaches, and potential pitfalls. This section of the proposal is not a "cookbook" of methods. It is important that the proposal be properly written with respect to content, grammar, style, and the specifications of the NIH Application guidelines.

The Research Strategy is divided into three sections:

A. Significance
- Explain the importance of the problem or critical barrier to progress in the field that the proposed project addresses.
- Explain how the proposed project will improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields.
- Describe how the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed aims are achieved.

B. Innovation
- Explain how the application challenges and seeks to shift current research or clinical practice paradigms.
- Describe any novel theoretical concepts, approaches or methodologies, instrumentation or interventions to be developed or used, and any advantage over existing methodologies, instrumentation, or interventions.
- Explain any refinements, improvements, or new applications of theoretical concepts, approaches or methodologies, instrumentation, or inventions.

C. Approach
- Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate.
- Discuss potential problems, alternative strategies, and benchmarks for success anticipated to achieve the aims.
- If the project is in the early stages of development, describe any strategy to establish feasibility, and address the management of any high-risk aspects of the proposed work.

Bibliography & References Cited

There are no formatting requirements for citations. Most style guides include format guidance for citations and all formats are acceptable. SciENcv, a tool to prepare biosketches for NIH and other agencies, uses the standard format used by the National Library of Medicine:

> Meneton P, Jeunemaitre X, de Wardener HE, MacGregor GA. Links between dietary salt intake, renal salt handling, blood pressure, and cardiovascular diseases. Physiol Rev. 2005 Apr;85(2):679-715.

Biographical Sketch (or Biosketch)

Biosketches are required in both competing applications and progress reports. SciENcv (https://www.ncbi.nlm.nih.gov/sciencv/) is highly recommended to help you develop your biosketch and automatically format it according to NIH requirements.

Evaluation of the Preliminary and Qualifying Examinations

Meeting of the Advisory Committee for Decision on the Qualifying Examination and the Preliminary Examination: The Preliminary Examination is expected to be held within two weeks of submission of the Qualifying Examination Proposal. **This meeting should be held before June 1st.** It is the responsibility of the student to consult with members of his/her Advisory Committee and to schedule the Preliminary Examination at a time agreeable to all. At this meeting, the Advisory Committee should discuss and decide by vote whether the Qualifying Examination Proposal is of a quality that merits its approval and that the student has passed the Qualifying Examination. If the majority of the Advisory Committee decides that the proposal is of such poor quality that the student has failed the Qualifying Examination, then several options may be recommended by the Advisory Committee and include (but are not limited to): partial or total rewrite of the proposal; choice of another topic and probationary period; recommendation for dismissal from the PhD program. A recommendation of dismissal will be presented to the Department Head and the entire full-time Graduate Faculty of the Department, who will be responsible for determining the final status of the student.

Evaluation of the Qualifying Examination Proposal: The student's Qualifying Examination Proposal may be given a score using the NIH Scoring System so that the student can appreciate how NIH Study Sections evaluate research grants and how the student's proposal would be judged in this scoring system. The NIH scoring system uses a 9-point scale. A score of 1 indicates an exceptionally strong application with essentially no weaknesses. A score of 9 indicates an application that has serious and substantive weaknesses with very few strengths; 5 is considered an average score.

The Preliminary Examination: If the Advisory Committee decides that the student has passed the Qualifying Examination, the Preliminary Examination will begin. The Preliminary Examination consists of an Oral Examination in which the student presents and defends the written proposal and answers questions on any of a variety of topics posed by members of his/her Advisory Committee. Although this Preliminary Examination will focus on the proposal, the student is expected to demonstrate a thorough knowledge of background information and to be capable of applying basic information from his/her coursework and reading of the literature to answer questions on a variety of topics. The student and Advisor should note that **the official Request for Preliminary Examination form must be completed TWO WEEKS in advance of the Preliminary Exam** and submitted to the Graduate School Office. Please provide a copy of this form to Marti Glass.

Recommendation of the Advisory Committee: After the Preliminary Examination, the Advisory Committee must decide whether the student has satisfactorily completed the Preliminary Examination. The recommendations available to the Committee include: Pass; Remediation; or Fail.

- If the Advisory Committee votes that the student has passed the Preliminary Examination, then the student should begin to address the requirement of the Doctoral Research Proposal.

- If the Advisory Committee deems the oral presentation inadequate, then the Advisory Committee may recommend measures for remediation.

Immediately after the Preliminary Examination, the Faculty Advisor must complete and submit to the Department Head the form "Report of the Preliminary Examination." The Department Head will submit this Report to the Dean. After approval by the Dean, copies of the Report will be distributed to members of the Advisory Committee, the student, and placed in the student's file.

Doctoral Candidacy: When the student has been judged to pass the Preliminary Examination, the Advisor and members of the Advisory Committee shall recommend that the student be admitted to candidacy for the doctoral degree. An official form must be signed by all members of the Advisory Committee and the Department Head, and submitted to the Office of the Graduate School.

6. RESEARCH PROPOSAL

Overview: A major component involved in the quality control of research and of a training program designed to teach students about the real world of academic research is the preparation, presentation, and peer review of a research proposal describing the student's project. This proposal is written in NIH Grant Application format by the student and includes Background information from the literature, Specific Aims, Rationale, Preliminary Data, and Methods to be used to answer the questions being asked. The purpose of the research proposal is for the student to define his/her doctoral research project, which will be the subject of the doctoral dissertation. The choice of the topic should result from experiments conducted by the student during his/her first two years and from discussions with the student's Advisor and Advisory Committee. **The Research Proposal must be submitted to the student's Advisory Committee and Outside Reviewer TWO WEEKS in advance of the visit of his/her Outside Reviewer.**

The research proposal should be written clearly and concisely. The student should realize that the Experimental Design/Methods section is not a "cookbook" of protocols, but is a section that describes the hypothesis to be addressed, experiments to test the hypothesis, the approaches to be taken and the rationale for each approach, an explanation as to how the findings obtained will or will not answer the specific aims being addressed, a statement of the pitfalls and limitations of the approaches, and a discussion of alternative experiments to answer the questions being asked.

Timing: The student must begin the preparation of the written proposal as soon as possible after completing the Preliminary Examination and becoming a Candidate for the doctoral degree.

Format of the Proposal: The format of the research proposal should be consistent with the guidelines used for NIH R01 Research Grant Applications, as follows: The format of the Doctoral Research Proposal is the same as that described for the Qualifying Examination Proposal except that Preliminary Studies should be integrated in the Approach section of the Research Strategy. The page limitation of the Research Strategy for the R01 is 12 pages.

Role of Advisory Committee: Since this proposal represents a research plan for the student's dissertation research project, the major role of the student's Advisory Committee is to offer suggestions and comments on the proposed research, to insure the propriety of the project, and to make certain that the student is prepared to undertake the doctoral research. An Outside Reviewer who has expertise in the field of the proposed research will assist the Advisory Committee. The choice of the Outside Reviewer will be the responsibility of the Advisor, but the Advisory Committee and Department Head must approve the selection.

The presence of the Outside Reviewer enhances the quality of the review process and reinforces for the benefit of the student and the faculty that the student's research is state of the art, scientifically valid,

and truly worthy of the doctoral degree. It should be emphasized that inclusion of the Outside Reviewer is intended to be a positive feature of this review process. Often, the Outside Reviewer may make excellent suggestions to improve the student's research project, inform the student of important, but unpublished, findings relevant to his/her research, and help the student secure a postdoctoral position in a leading laboratory.

Presentation of Proposal as a Public Seminar: The student will present the proposal at a public seminar. After the seminar, the student will meet with his/her Advisory Committee and the Outside Reviewer to review and discuss the proposal.

Recommendation of the Advisory Committee: The Committee may decide: 1) to approve the proposal as written; 2) to require modification(s) of the proposal in a manner consistent with good science; 3) to require the student to make significant changes. If significant changes are required, the Committee may elect to have the proposal rewritten and returned to the Committee and Outside Reviewer for approval.

The proposal will be approved as written (and modified) if there is no more than one negative vote. The Outside Reviewer is expected to participate actively in the examination of the student and in the critique of the Research Proposal. Approval of the research proposal by the Advisory Committee assures the student that the Committee feels that satisfactory completion of this project by the student should constitute an acceptable dissertation research project. The student is then expected to devote the overwhelming portion of his/her time to the doctoral research project. The progress of his/her research is monitored by the Advisor and by the periodic meetings of the Advisory Committee.

7. RESEARCH DISSERTATION

Overview: The dissertation research must be a contribution to the field and is expected to generate original findings that address a fundamental question. It is expected that the major substance of the study will be published in a reputable journal and that the student will present his/her research findings at local, regional, national, or international meetings of scientific societies in the student's field.

Preparation and Defense of the Doctoral Dissertation: The dissertation is prepared by the student with the guidance of his/her Advisor and Advisory Committee. Upon completion of the dissertation, the student should provide copies of the dissertation to all members of his/her Advisory Committee. After an appropriate period of approximately 7 days, the student's Advisor will contact each member of the Advisory Committee and determine whether the member feels the dissertation is completed to a degree that will allow scheduling of the Dissertation Defense and Final Examination. If two or more members of the Advisory Committee feel the dissertation is incomplete and/or of a quality unsuitable to schedule the Defense, the Committee will meet and make specific recommendations necessary to improve the dissertation prior to scheduling the Dissertation Defense and Final Examination.

In order to schedule the Dissertation Defense and Final Examination, the student's Advisor must complete the form "Request for Dissertation/Thesis Defense and Final Examination" and submit this form and a copy of the Dissertation Abstract to the Department Head, who will review the information, sign the form and submit the documents to the Dean. The Dean must receive the approved form and Dissertation Abstract **two weeks prior to the date of the Defense and Final Examination.**

The Dissertation Defense and Final Examination will focus on the dissertation research and the dissertation itself. The student is expected to answer questions about the work, defend the validity of the conclusions, discuss suggestions for revisions to improve clarity, etc. At the discretion of the Advisory Committee, the Defense and Final Examination may include questions from the major or minor fields in general, but this is not the usual situation.

After the student has answered questions concerning the dissertation, the Committee will discuss the dissertation and revisions that may be necessary and vote whether the student has passed the Final Examination. Voting to accept the dissertation (with all recommended revisions) will be by ballot with no more than one negative vote permitted. If the dissertation is not acceptable and/or the student is judged to have failed the examination, the Advisory Committee is expected to inform the student in writing of the reasons for the failure. A copy of this letter is provided to the Head of the Department and to the Dean of the Graduate School. The Advisory Committee, the Department Head, and the full-time graduate faculty members of the Department will meet to discuss the final disposition of any student who fails the Dissertation Defense and Final Examination.

The Advisory Committee may vote to re-schedule a second Dissertation Defense/Final Examination if major revisions and/or additional experimentation are required. In this case, the student is to be informed in writing of the deficiencies and of the work that must be accomplished before a second Defense and Final Examination may be scheduled. This information must be included in the letter given to the Head of the Department and to the Dean.

Final Research Seminar and Certification: Once the student has passed the Dissertation Defense/Final Examination and the dissertation has been accepted by the Advisory Committee, the student is required to present a final research seminar open to all faculty, students, and staff. In rare cases, the student may be allowed to present this seminar before the Dissertation Defense, but only with the permission of the Advisory Committee and the Department Head. It is advisable for many reasons that the Dissertation Defense be held at least one week before the Final Research Seminar.

The purpose of this seminar is to allow the student to present the overall view of his/her doctoral research and to demonstrate to new and intermediate level graduate students as well as to other members of the Health Sciences Center the high quality of research expected for the doctoral degree. It is expected that this Final Research Seminar will be a joyous occasion and often a farewell for the graduate student who will be departing to continue his/her research training as a postdoctoral fellow. When the student has passed the Dissertation Defense/Final Examination and presented the Final Research Seminar, he/she will be certified to the Graduate Faculty, the Dean, and the Chancellor as having met all requirements for the degree of Doctor of Philosophy in Microbiology and Immunology. The student's Advisor must complete the form "Dissertation/Thesis Defense-Final Examination Report" and have the form signed by each member of the Examining Committee and the Department Head. The Department Head will forward this form to the Dean.

8. OTHER SCHOLARLY ACTIVITIES

In addition to requirements concerning Research, Coursework, and Seminar, every graduate student is expected to participate in other scholarly activities. These activities vary from individual to individual, but students are expected to develop good reading habits so that they can keep abreast of major developments in their field and in related biomedical sciences; to present their research findings at meetings of professional societies in their field; to show leadership and maturity by assisting other graduate students and staff in research techniques and the use and maintenance of instrumentation; to help in the recruitment of graduate students into the program; to assist in teaching if invited; and to take an active role in maintaining the research environment of the Department and the University.

It is expected that every doctoral candidate will publish at least one first-author paper on the findings from his/her dissertation research in a national/international journal. Students are expected to attend all guest seminars and guest lectures in graduate courses by Visiting Faculty.

Teaching is an important aspect of the doctoral training program, and all students are required to participate in teaching. This may take the form of presenting information in a journal club format,

participating in the training of new students or Research Associates in laboratory procedures, speaking to undergraduate and/or grammar school students at science fairs, etc.

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APPENDIX: DESCRIPTION OF GRADUATE COURSES

I. REQUIRED IDSP (INTERDISCIPLINARY) COURSES

IDSP #110: BIOCHEMISTRY AND MOLECULAR BIOLOGY (3 credits)
IDSP #116: METHODS IN BIOMEDICAL SCIENCES I: BIOCHEMISTRY AND MOLECULAR BIOLOGY (1 credit)
IDSP #117: METHODS IN BIOMEDCIAL SCIENCES II: RECOMBINANT DNA (1 credit)
IDSP #118: CELLS AND SIGNALING (3 credits)

II. REQUIRED COURSES OFFERED BY THE DEPARTMENT

MICRO #297: IMMUNOLOGY (2 credits)
Description: An advanced course, employing both lecture and discussion formats, that is designed to cover many of the important aspects of modern cellular and molecular immunology. Strong emphasis is placed on understanding the myriad of molecular interactions involved in the development, function, and regulation of the cells responsible for immune phenomena. By the supplemental reading of crucial journal and review articles, students are encouraged to examine and interpret recent experimental findings.

MICRO #291: BACTERIOLOGY AND MOLECULAR PATHOGENESIS I (2 credits)
Description: An advanced course of lectures, discussions, and student presentations in the areas of structure, function, and physiology of bacteria. In the first portion of the course, emphasis will be placed on bacterial structure and the functions of these structures, bacterial physiology, and the nature of antibiotics and their mechanisms of action. In the second portion, the mechanisms employed by bacteria to cause disease will be stressed, and lectures will cover the major types of bacterial infectious diseases. Lastly, basic information on the properties of fungi will be covered, and lectures will address topics in medical mycology.

MICRO #276: GENERAL AND MOLECULAR VIROLOGY (2 credits)
Description: An introduction to the structure, replication, biology, and molecular biology of animal viruses. Emphasis is also given to virus-cell interactions at the molecular level, including the immune response to viral infections, and current research on mechanisms of viral replication and its effect on regulatory mechanisms of host cells. Lectures, discussions, and seminars.

MICRO #289: MOLECULAR PATHOGENESIS OF INFECTIOUS DISEASES II (2 credits)
Description: An advanced study of the mechanisms whereby parasites, viruses, and bacteria cause infectious disease. The interactions between these pathogens and the host will be examined in detail utilizing various animal and human models. Pathogenesis will be presented ecologically following the events of the pathogen's entry into the host, its encounters with the host, its encounters with the host's defense mechanisms, strategies employed by the parasite and virus to counteract host defenses, to spread throughout the host, mechanisms of cell and tissue damage, etc. Emphasis will be placed on the molecular aspects of virulence factors and host defenses.

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III. JOURNAL CLUB COURSES

First year students rotate through Journal Clubs during the first semester. Every student must become a member of a Journal Club beginning in January of the first year.

MICRO #292: DISCUSSION IN ADVANCED VIROLOGY
Description: Students, postdoctoral fellows, and faculty present the latest discoveries in molecular and tumor virology from the literature at the weekly Friday meetings. On Tuesday, two students, postdoctoral researchers, or faculty members present status reports on their ongoing research at the Fortnightly Virology Research Conferences. For credit, the student must speak on a regular basis in the rotation of all members of the Friday journal club and must present research reports at the Fortnightly Virology Research Conferences held on Tuesdays.

MICRO #295: DISCUSSIONS IN BACTERIOLOGY
Description: A journal club/research-in-progress format is used for discussion of recently published and unpublished research in the field of bacteriology. Emphasis is placed on critical evaluation of experimental design, data and conclusions as well as on the development of communication skills and knowledge of new developments in prokaryotic biology.

MICRO #293: DISCUSSION IN ADVANCED IMMUNOLOGY
Description: A journal club/research in progress format is used for the discussion of published and unpublished findings in advanced immunology. Emphasis is on critical evaluation of experimental design and interpretation. Students will present and also participate in overall discussions. Grading will be based on participation and attendance. The class will meet every other week for 1 hr. This course will be offered over two semesters with the Fall being MICRO 293A, and the Spring being MICRO 293B. Each semester will be worth 0.5 credits, and the student must complete both semesters to successfully complete the course.

IDSP #203: DISCUSSIONS IN CANCER BIOLOGY
Description: The Cancer Biology Journal Club is designed to explore the latest published research in a variety of cancer-related topics including tumor invasion and metastasis. Students will discuss published findings with the group and propose future directions the research might take. The primary goals of the journal club are to enhance information learned in the Cancer Courses and to improve the research abilities of the participants.

IV. REQUIRED RESEARCH, SEMINAR, and BIOETHICS COURSES

MICRO #298: SEMINAR IN MICROBIOLOGY
Description: The student prepares and presents selected findings from either the current literature or his/her research in a 45-minute public seminar. The seminar consists of a brief and informative introduction, explanation of the experimental procedures and strategies employed, presentation and critical assessment of the findings, and a questions/discussion period. Prior to the seminar, the student must prepare and circulate a written abstract announcing the seminar and summarizing the key findings to be presented. One seminar each year must concern the research in progress by the student. The student is provided a written critique of the seminar by each faculty member and discusses these critiques with the faculty member responsible for the course.

MICRO #400: DISSERTATION RESEARCH
Description: Research for the doctoral degree is conducted under the supervision of the student's Advisor in concert with the members of the student's Advisory Committee. Registration is by consent of the Head of the Department. The amount of credit is to be stated at the time of registration.

IDSP #240A: ETHICS AND PROFESSIONALISM I (0.5 credits)
IDSP #240B: ETHICS AND PROFESSIONALISM II (0.5 credits)
Description: The objective of these courses is to provide an understanding of the underlying philosophy in scientific endeavors and the ethical issues that face scientists. The courses will involve detailed discussions about the history of scientific thought, the scientific method, experimentation and data collection, and current ethical issues. Weekly sessions will include lectures and discussions by faculty, students and guest speakers.

V. GRANT WRITING COURSE

IDSP #235B: GRANT WRITING
Description: The fundamental principles of grant writing and review are covered, with an emphasis on NIH-type research grants. The components of an NIH-type grant applications and the type of information that should be included in the specific aims, research strategy, impact, budget, and form pages are explained in detail, and strategies for writing, organization, and formatting of proposals are provided. This course is recommended to help students prepare for the Qualifying Exam Proposal and the Research Proposal.

VI. OPTIONAL IDSP (INTERDISCIPLINARY) COURSES

IDSP #113: GENETICS (1 credit)
IDSP #119: GENE EXPRESSION (1 credit)
IDSP #226: BASIC BIOSTATISTICS (1 credit)
IDSP #227: ADVANCED BIOSTATISTICS (1 credits)

Department of Molecular and Cellular Physiology

https://www.lsuhs.edu/departments/school-of-graduate-studies/molecular-and-cellular-physiology

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Graduate Program in Molecular and Cellular Physiology

Physiology is the study of how biological systems perform their functions to maintain the steady-state internal environment of living organisms. As physiologists, we can study these processes at the genetic, cellular, organ system or whole-animal level. Our departmental name reflects the increasing application of molecular biology techniques in the understanding of physiological function. Understanding the basic concepts of physiological control of organ systems in the human body is key to identifying regulatory processes during organ dysfunction and disease states, which, in turn, may elucidate a novel approach in therapeutic intervention.

The Department of Molecular and Cellular Physiology recruits highly motivated individuals from biomedical undergraduate backgrounds who wish to pursue a rewarding career in biomedical research. Our PhD program provides individualized training for each student to successfully fulfill the requirements leading to the attainment of a PhD degree. This will provide highly skilled graduates with the investigative tools necessary for an intellectually challenging and rewarding career in an ever-evolving field at academic, industrial or government institutes. The graduate program consists of lecture courses, seminar presentations and independent research. Our program emphasizes the need for a strong, knowledgeable background of reviewed literature, a well-planned experimental approach to

problem-solving and skilled interpretation of results. In addition, students will be guided in the development of excellent written and oral communication skills.

During the first year of study each student is required to complete a series of core courses in the interdisciplinary graduate program, with minimal additional coursework required after the first year. At the end of the second semester of the first year, each student must pass the Preliminary Examination that consists of an essay-type written examination followed by an oral examination. During the first year of study the student also rotates through four research laboratories to become familiar with faculty research interests and to assist in the selection of their research mentor. Upon successful completion of the qualifying examination and the selection of a research mentor, the student progresses onto a program of original and independent research under the guidance of their mentor. Students must write a grant proposal and defend their research progress to their advisory committees in regularly scheduled meetings throughout the duration of their research study. Students are expected to publish at least two peer-reviewed papers from their dissertation work. One published manuscript is required for completion of the PhD degree.

Following the first year of study, PhD candidates will also have the opportunity to participate in teaching students in the School of Allied Health Professions. This training is under the guidance of the student's mentor and would constitute no more than 6 hours of lecturing. During the PhD program students will be encouraged to participate in the presentation of their research results at National Scientific Meetings. Not only does this provide an ideal platform for students to get feedback on their own data, this also provides the opportunity to meet peers and be exposed to current developments within their own area of research.

Students are provided with desk space in the graduate student room during their first year prior to selection of their mentor. Students are encouraged to interact with faculty members upon joining the department and attend departmental social events.

Admissions and Regulations

1. Requirements for Admission

Students who wish to enter the graduate program in the Department of Molecular and Cellular Physiology are expected to meet the following requirements:

1) Baccalaureate degree from a college or university approved by a regional accrediting agency*.
2) An undergraduate grade point average of 3.0 on a 4 point scale and a 3.0 grade point average for any graduate coursework is *recommended*.
3) Applicants should have completed at least one year of each of the following: General Chemistry, Organic Chemistry, and Biological Science.
4) Submission of scores for the Graduate Record Exam (GRE) is required for international students and recommended for domestic students**.

* Official transcripts for all course work are required to complete your application. Official transcripts should be sent directly to GradCAS. Detailed instructions including address can be found on the GradCAS website under the "Sending Official Transcripts to GradCAS" menu. Please note that international applicants should have transcript evaluation, not official transcripts, sent to GradCAS.

** Please arrange for the Educational Testing Service to send an official copy of your GRE scores to GradCAS. Detailed instructions can be found on the GradCAS website under the "Sending Official Test Scores to GradCAS" menu.

2. Additional Requirements for International Applicants

In addition to the requirements above, international applicants must also supply the following information to be considered for admission:

1) Transcript Evaluation submitted to GradCAS.
2) English Proficiency Examination Results: All international students must present one of the following minimum scores on the Test of English as a Foreign Language (TOEFL) examination: Paper Based – 550; Internet Based – 80; Computer Based - 213. Alternatively, a score of at least a 6.5 on the International English Language Testing Service (IELTS) exam is acceptable.

The above are minimal recommendations and requirements, and the Department usually accepts students having the highest credentials. In addition, prospective students are normally invited to interview with the departmental faculty prior to acceptance into the program.

3. Types of Admission

Admission of a student can be one of three types:

Unconditional Admission - An acceptable candidate who meets all of the admission requirements is given this kind of admission.

Provisional Admission - A candidate who appears to be admissible, but who is unable, for good reason, to supply the required credentials prior to the stated deadline may be given provisional admission. In such cases, complete credentials must be received not later than sixty days after the first day of classes. This does not apply to foreign applicants who will need this information for their visa.

Exception - A candidate who is judged by the Department Head, Faculty and by the Associate Dean of the Graduate School to show promise for successful graduate work, but has either been absent from coursework for a period of time or does not fully meet the recommendations and requirements stated above for entry into the Physiology program, that student may be accepted into the program, but may be required to take PHYSIO 201 (Human Physiology) in the summer prior to starting the first year of the program. This will provide a foundation for the course work that the student is required to take in the first year of graduate studies.

4. Admission Procedures

Applications are accepted on-line through GradCAS. The following documents should be uploaded by the applicant:

1) CV/Resume
2) Personal Statement: 300-750 word personal statement discussing your academic interests and professional objectives. Be sure to include: your purpose for applying to the graduate program in the Department of Molecular and Cellular Physiology; your particular area of specialization within the major field, including the faculty member(s) research you are interested in working with (if you already have a particular specialization in mind); a description of any prior research experience, and your plans for future occupation or profession; and any additional information that may assist the admission committee in evaluating your preparation and aptitude for graduate study.
3) Unofficial transcripts (optional)
4) Unofficial GRE test scores (optional)

Applicants should arrange for the following files to be submitted directly to GradCAS:

1) Official transcripts (or transcript evaluation for international students)

2) GRE scores
3) TOEFL scores (if applicable) (see above for more information).
4) At least three (no more than five) professional references from individuals who best know your academic, research, or professional qualifications and who will provide recommendations on your behalf. At least two of your recommendations should be academic recommendations. At LSU Health Sciences Center in Shreveport, letters of recommendation are an exceedingly important part of deliberations leading to acceptance or rejection of applicants. If these letters do not speak directly to the preparation of the applicant for graduate study or if the authenticity of the letter is in question, applicants are typically rejected.

Official IELTS scores cannot be sent electronically through GradCAS. The applicant should arrange to have the document sent directly to the university at the following address:

Dr. Kelly Tatchell, PhD
Associate Dean, School of Graduate Studies
Louisiana State University Health Sciences Center - Shreveport
1501 Kings Highway
Shreveport, LA 71103

Applicants to the PhD. program in Physiology will be reviewed by the Physiology Faculty. Promising candidates will be contacted by **Director of Graduate Studies in the Department of Molecular and Cellular Physiology** and interviewed by Skype initially. Following the interview, it is possible that students will also be required to visit the department to interview with the faculty. A final decision will be made and successful applicants will be notified by mail by the Department and the School of Graduate Studies. Separate acceptance letters should be sent to the Department and School of Graduate Studies. Applicants who have questions concerning the application and review process should address the inquiries to **Dr. Chris Pattillo**, **Director of Graduate Studies**, Department of Molecular and Cellular Physiology, LSU Health Sciences Center, 1501 Kings Highway, Shreveport, LA 71130; Tel: (318) 675-6974, e-mail: mailto:christopher.pattillo@lsuhs.edu Further information can be found online at the Department of Molecular and Cellular Physiology website.

5. Financial Aid

Every effort will be made to place the student in the laboratory of his/her choice provided that the faculty member is agreeable and that space and funds are available to support the student's research. Faculty members who accept the responsibilities of having graduate students enter their laboratory and serving as the student's advisor (major professor) are expected to obtain financial support on their grants for the student's stipend by the beginning of the student's second year of the program until the degree requirements are completed.

6. Grade Requirements

To receive a graduate degree, a student must have at least a **"B"** average on all work taken as a graduate student. A student will be dropped from the rolls of the School of Graduate Studies if the student's cumulative average **is below a "B" for three (3) consecutive semesters**. A student who receives an “F” in the physiology-based courses (IDSP 212, 213, 214, 215, 217, 218) may be subject to dismissal. Credits received in thesis or dissertation research are not used in computing the grade point average. A Summer term is counted as a semester. Students in serious scholastic difficulties may be dropped from the rolls at the end of any semester if the Department and Dean feel that the student is not qualified to continue.

For more comprehensive information consult the pertinent section of the LSUHSC School of Graduate Studies website or elsewhere in this handbook.

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PhD Program

Information and Requirements

The Doctor of Philosophy degree is the highest academic degree offered by the University. It is conferred only for work of distinction in which the student displays powers of original scholarship. The major emphasis of the doctoral program in the Department of Molecular and Cellular Physiology will be to provide an environment for the student to learn how to think, how to ask questions and to answer them in the laboratory and other scientific arenas, how to write and communicate and to develop into a mature, articulate and competent biomedical scientist.

The Doctoral program consists of seven (7) major components

- Formal Coursework
- Qualifying Examination
- Research
- Grant writing
- Seminar
- Other Scholarly Activities
- Teaching

Formal Coursework

The first emphasis of the doctoral training program will be formal coursework. Every student is expected to have knowledge in and a firm understanding of, current concepts, experimental approaches, and recent developments in the major field of Physiology. To obtain this foundation, the student is required to complete a core curriculum of graduate courses and to supplement this core with other courses recommended by his/her major professor and/or the Advisory Committee.

Graduate Student Curriculum

YEAR 1

Fall

IDSP 110	Biochemistry and Molecular Biology (3 cr)
IDSP 118	Cells and Signaling (3 cr)
IDSP 240A	Ethics and Professionalism I (S/U 1 cr)
IDSP 116	Methods in Biomedical Sciences I (1 cr)
IDSP 117	Methods in Biomedical Sciences II (1 cr)
IDSP 226	Basic Biostatistics (1 cr)
IDSP 227	Advanced Biostatistics (1 cr)
PHYSIO 270	Special Topics - Journal Club (S/U 1 cr)
PHYSIO 202	Laboratory Rotations (S/U 3 cr)

Spring

IDSP 212	Cardiovascular System (1.5 cr)
IDSP 213	Renal System (1 cr)
IDSP 214	Respiratory System (1 cr)
IDSP 216	Gastrointestinal System (1 cr)
IDSP 217	Endocrine System (1 cr)
IDSP 218	Nervous System (1.5 cr)
MICRO 297	Immunology (2 cr)
XXXX	Animal Models Course (2 cr)

PHYSIO 270 Special Topics - Journal Club (S/U 1 cr)
PHYSIO 202 Laboratory Rotations (S/U 3 cr)

Department of Physiology Qualifying Examinations (Written and Oral)

Summer
IDSP 240B Ethics and Professionalism II (0.5 cr)
PHYSIO 203 Physiology Research (S/U 1-9 cr)

YEAR 2

Fall
IDSP 235A Grant Writing (S/U 1 cr)
PHYSIO 270 Special Topics - Journal Club (S/U 1 cr)
PHYSIO 278 Advanced Cardiovascular Physiology (3 cr) if offered
PHYSIO 400 Dissertation Research (S/U 1-9 cr)

Spring
IDSP 235B Grant Writing (S/U 1 cr)
PHYSIO 270 Special Topics - Journal Club (S/U 1 cr)
PHYSIO 400 Dissertation Research (S/U 1-9 cr)

Grant to be written and submitted for pre-doctoral fellowship

Summer
PHYSIO 400 Dissertation Research (S/U 1-9 cr)

Dissertation Research and Allied Health teaching

YEAR 3-4

Dissertation Research
Year 3 students are may take PHYSIO 278 if not taken in the previous year. Students who are not cardiovascular focused, may take three elective credits approved by the student's mentor and Graduate Director.
Fall, Year 3: Grant proposal to be examined by committee if student is not successful in submitting a pre-doctoral fellowship to a funding body.

YEAR 5

Dissertation Research
Field Exam (Test on Dissertation Literature Review)
Final Dissertation Defense/Department Seminar/Graduation
*NOTE: Literature Review and PhD Dissertation must be provided to the committee members at least four weeks in advance of these exams.

DESCRIPTION OF COURSES

PHYSIO 201 Human Physiology. (3 credits, letter grade). This is a foundation course in Physiology and does not replace any required Foundation or Physiology course. Students will be required to take this course in the summer prior to entry into the PhD program if the student is accepted into the Physiology graduate program under the terms stated above for "Probationary Admission". Course director: Dr. Christopher Pattillo

PHYSIO 202. Laboratory Rotations (3 credits, S/U). Hours and credits by arrangement. More details are provided below.

PHYSIO 203. Physiology Research (1-9 credits, S/U). This course serves as the transition from lab rotations to entering the lab of the major professor to begin work on a dissertation. Hours and credits by arrangement.

PHYSIO 210. Pathophysiology. (3 credits, letter grade) A comprehensive summary of physiology and pathophysiology of the microcirculation, peripheral circulation, heart, and other selected tissues. The major emphasis is on the fundamental concepts related to changes in physiologic processes that underlie different disease states. Course directors: Dr. Steven Alexander and Dr. Norman Harris

PHYSIO 270. Special Topics - Journal Club. (1 credit, S/U) Course covers journal reviews and articles on diverse topics in molecular physiology, including inflammation, microcirculation, imaging, genomics and therapeutics approaches. Course directors: Faculty rotation

PHYSIO 278. Advanced Cardiovascular Physiology. (3 credits, letter grade) A comprehensive summary of physiology of the microcirculation, peripheral circulation, and heart. The major emphasis is on the functions of various components of the microcirculation including a consideration of the biophysics of vascular smooth muscle contraction and its relation to the regulation of blood flow distribution within and among organs, substrate transport across the microcirculation, the endothelial cell as a metabolic barrier to substrate transport, regulation of blood flow in the various organs, and angiogenesis. Course director: Dr. Norman Harris

PHYSIO 300. Thesis Research. (1-6 credits, S/U) This course consists of conducting research to fulfill the requirements for the Master of Biomedical Science degree. The research is conducted under the direction and guidance of the student's approved faculty research advisor and research advisory committee members. Initially, the students learn about a specific thesis research topic, then generate a hypothesis and master the techniques required to test that hypothesis. As the project develops, students continue to collect data, acquire new techniques and learn the literature relevant to their research project. Consequently, as the research advances students are exposed to new methods and new information each semester as they develop their research skills. The students meet regularly with their advisors and committees and provide oral and written updates of their research progress. Because each student is responsible for a different project, the length of time required to complete each project varies as does the number of times the student registers for this course. Amount of credit to be stated at time of registration.

PHYSIO 400. Dissertation Research. (1-9 credits, S/U) This course consists of conducting research to fulfill the requirements for the Doctor of Philosophy degree. The research is conducted under the direction and guidance of the student's approved faculty research advisor and research advisory committee members. Initially, the students learn about a specific dissertation research topic, then generate a hypothesis and master the techniques required to test that hypothesis. As the project develops, students continue to collect data, acquire new techniques and learn the literature relevant to their research project. Consequently, as the research advances students are exposed to new methods and new information each semester as they develop their research skills. The students meet regularly with their advisors and committees and provide oral and written updates of their research progress. Because each student is responsible for a different project, the length of time required to complete each project varies as does the number of times the student registers for this course. Amount of credit to be stated at time of registration.

Qualifying Examination

A student must obtain at least an average grade of "B" in the Foundations of Biomedical Sciences courses to qualify for the PhD degree. In addition, the student must demonstrate that he/she is competent in a broad segment of Physiology. Although a student may be working in one area of Physiology such as Cell, Cardiovascular or Renal Physiology, he/she is expected to have an understanding of the concepts, experimental approaches, and major developments in the major field of physiology covered in the core curriculum of the PhD program.

To demonstrate this competence, the student must pass the Qualifying Examination that is composed of two (2) parts: a) Written, and b) Oral. This Qualifying Examination will usually be administered sometime during the summer months prior to the start of the second academic year.

1. Written Examination

The Written Examination is divided into six (6) equal sections:

1. Cell Physiology
2. Cardiovascular Physiology
3. Renal Physiology
4. Respiratory Physiology
5. Gastrointestinal Physiology
6. Endocrine Physiology

A student who receives a grade of "A" or "B' in all six sections is considered to have passed the written section of the Qualifying Examination. In addition, a student may receive a grade lower than "B" in one of the six sections and still pass the written portion of the Qualifying Examination.

A student who receives a grade below "B" in only two sections is considered to have failed the Written Examination and will not be allowed to take the Oral Examination at this stage. A remedial examination covering these two sections will be scheduled within 2 weeks after the first Written Examination. A student must receive a passing grade (i.e. 80% or better) on both sections to pass the remedial exam. If the student passes the remedial examination, he/she will then be allowed to take the Oral Examination. If the student fails the remedial exam, he/she is subject to dismissal from the PhD Program. If a student fails three of the six sections on the written portion of the first Qualifying Examination, he/she will be dismissed from the PhD Program.

2. Oral Examination

Once a student has successfully completed the Written Examination he/she becomes eligible to take the Oral Examination. The Oral Examination will cover all of the six (6) sections of Physiology listed above.
Students who have remediated the written portion of the Qualifying Examination will only be allowed one Oral Examination. If the student fails the Oral portion of the Qualifying Examination, he/she will be dismissed. Students who pass the Written Examination but fail the Oral Examination will be re-examined only by Oral Examination. This second examination must be administered within one (1) week of the original Oral Examination. Failure to pass this remedial exam will result in dismissal of the student from the program.

Students who pass both the Written and Oral sections of the Qualifying Examination are nominated to become a "Doctoral Candidate".

3. Preparation for the Preliminary Examination

Preparation for the Qualifying Examination is a constant, ongoing process in which the student uses free time during the first year to read, study and review information from courses and the literature. Students are expected to maintain their coursework and lab rotations while preparing for the Qualifying Examination. The student is expected to consult with each faculty member regarding resource material to be utilized in preparation.

Research

1. Laboratory Rotation and Selection of a Major Professor

The second emphasis of the doctoral training program will be on research and time for research will increase each year. In the Fall Semester new students will be introduced to ongoing Departmental research by meeting with faculty members to discuss their research. Faculty with primary or adjunct appointments in the Department of Physiology may host a rotating student. Each new student will select a minimum of four (4) faculty members for rotation in their respective laboratories. The rotation will allow the student to gain first-hand knowledge of the research in these selected laboratories and serve as a basis to choose a major professor. Two rotations will be completed in the Fall Semester and two in the Spring Semester. MD- PhD students may do one rotation as part of the Medical Students Research Program in the summer after their first year of Medical School. Where possible, these students are advised to complete three other rotations during the second year of Medical School.

The selection of a major professor will be after the Qualifying Examination. The student will list his/her order of choice in a letter to the Director of Graduate Studies. Every effort will be made to place the student in the laboratory of his/her choice provided the faculty member is agreeable and room and funds are available to support the student's research.

The student is expected to devote a considerable amount of time to research both in the laboratory and through studying the literature even though course work is in progress. A key part of developing into a biomedical scientist is for the student to learn how to partition his/her time so that progress can be made in research while courses are taken.

The Research component of the doctoral program will consist of research in the laboratory, presentations at research seminars (see below), preparation and defense of a research proposal in the NIH grant application format, presentation of research findings at scientific meetings, publication of papers, and finally the preparation and defense of the doctoral dissertation.

2. Selection of Dissertation Committee

This Dissertation Committee is usually established during the second year after the student has selected a major professor and has begun to identify his/her research problem. The members of the Dissertation Committee should be faculty who have expertise in research, especially in the areas of research that may relate to the student's area of experimentation. One major function of the Dissertation Committee is to provide advice and support regarding the student's research and to help monitor the development of the student into a productive, careful, and competent investigator. The Dissertation Committee also helps the major professor evaluate the student's progress in his/her research and advises the student of the elective coursework best suited to his/her needs.

The Dissertation Committee must be comprised of at least five (5) faculty who are eligible to serve according to the rules of the School of Graduate Studies. Four of the members should be from the Department of Physiology, and should include at least three members with primary appointments in Physiology. The major professor may have a primary or adjunct appointment in the Department. The fifth committee member must be from outside the Department (not adjunct faculty in Physiology), and may be from a different Department such as Biochemistry or Pharmacology or from a different

institution. Before inviting the individual faculty to serve on the Dissertation Committee, the major professor must have the Department Head approve the committee.

The Dissertation Committee is expected to meet every six (6) months (during September and March) to review the student's progress. A brief report of the Dissertation Committee's recommendations must be prepared in writing by the major professor and provided to the student, the Director of Graduate Studies, and the Department Head. In addition, a copy of this report is to be placed in the student's file. The progress of each student will be discussed by the entire faculty at departmental faculty meetings.

3. Quality of the Student's Research

The dissertation research must be a contribution to the field and is expected to generate original findings that address a fundamental question. It is expected that the major substance of the study will be published in journals of international repute and that the student will present his/her research findings at local, regional, national or international meetings of scientific societies in the student's field. One first author publication "in press" or published by a peer-reviewed journal will be required for graduation.

4. Preliminary Examination - Preparation and Defense of the Doctoral Research Proposal

The Preliminary Examination consists of the preparation, presentation, and peer review of the student’s Research Proposal and subsequent submission of the Research Proposal. Preparation of the Research Proposal allows the student to pursue a research problem to a meaningful conclusion, become aware of the findings of other researchers in his/her field, learn what a research grant is and how to prepare one, focus on his/her major research aims and the rationale and methods to achieve goals, as well as introducing the student to the peer review process. The Research Proposal is primarily the responsibility of the student with appropriate input from the major professor and a Dissertation Committee.

During the second year of studies, after the selection of the Dissertation Committee, the student will meet with the Committee to defend the potential aims and experimental design of the Proposal. This proposal is written in the National Institute of Health (NIH) grant format by the student and includes Background information from the literature, Specific Aims, Rationale, Preliminary Data, and Methods to be used to answer the questions being asked. It is expected that the completed proposal will be submitted as a grant application in the spring of the second year to the Office of Research for consideration for an intramural predoctoral fellowship award or to an external funding mechanism. If the Proposal is funded, the student’s Committee will consider the student to have passed the Preliminary Examination.

If the first submission of the grant is not funded, it will be revised by the student, who will defend the revision to the Committee. The Committee will be required to review it, provide comments, and approve the final version for the student to pass the Preliminary Examination. If the student does not pass this defense, he/she will be allowed to defend a second time. Passing the Preliminary Examination is a PhD requirement.

The grant Proposal should be submitted in the second year. However, if there are delays and the Proposal has not undergone the first submission as a grant application prior to the end of the fall of the third year, the student will be required to write a grant proposal that is on a different topic than his/her dissertation (to be approved by his/her dissertation committee before writing commences), and successfully defend it to his/her dissertation committee in order to pass the Preliminary Examination.

5. Preparation and Defense of the Doctoral Dissertation

A. Field Examination

An outline of the literature review for the PhD dissertation must be approved by the Dissertation Committee. Upon successful completion of the literature review, an oral examination (field examination) will be administered by the student's Dissertation Committee on this material. The field exam is usually scheduled 4-6 weeks prior to the dissertation defense. Successful completion of the field exam is required for the dissertation defense and final exam.

B. Preparation of Doctoral Dissertation

The dissertation is prepared by the student with the guidance and advice of his/her major professor and Dissertation Committee. Instructions for the preparation of the dissertation are provided in the "Instructions for Thesis and Dissertation Writing" booklet, which is available through the Office of Graduate Studies. With the permission of the student's Dissertation Committee, the student can utilize the European format for the dissertation. Upon completion of the dissertation, the student should provide copies of the dissertation to all members of his/her Dissertation Committee, to the Director of Graduate Studies, and to the Department Head. After an appropriate period of time (approximately 14 days, during which the student should be available to provide information or clarifications requested by his committee members), the student's major professor should contact each member of the Dissertation Committee and determine whether the dissertation is completed to a degree that will allow scheduling of the Defense and Final Examination. If two or more members of the Dissertation Committee feel the dissertation is incomplete and/or a quality unsuitable to schedule the Defense, the Committee will meet and make specific recommendations.

C. Defense and Final Examination

This exam should be scheduled no earlier than 4-6 weeks after successful completion of the field exam, and no sooner than one month after submission of the final dissertation to the Dissertation Committee. The Dissertation Defense and Final Examination will focus on the dissertation research and the dissertation itself. The student is expected to answer questions about the work, defend the validity of the conclusions, discuss suggestions for revisions to improve clarity, etc.

After the student has answered questions about the dissertation, the Committee will discuss the dissertation and final revisions that may be necessary and vote whether the student has passed the Final Examination. Voting to accept the dissertation (with all recommended revisions) will be by ballot with no more than one negative vote permitted. If the dissertation is not acceptable and/or the student is judged to have failed the examination, the Dissertation Committee is expected to inform the student in writing, of the reasons for the failure with a copy provided to the Head of the Department, the Director of Graduate Studies, and the Dean of Graduate Studies.

6. Final Research Seminar and Certification

Once the student has passed the Final Examination and the dissertation has been accepted by the Dissertation Committee, the student is required to present a final research seminar open to all faculty, students, and staff of the Department of Physiology and interested members of other departments. The

purpose of this seminar is to allow the student to present the overall view of his/her doctoral research and to demonstrate to new and intermediate level graduate students as well as to other members of the Medical Center the high quality of research expected for the doctoral degree.

When the student has passed his/her Defense and Final Examination and scheduled the final research seminar and published (or have "in press") a first author paper on his/her dissertation research in a peer reviewed journal, he/she will be certified to the Graduate Faculty and Chancellor as having met all requirements for the degree of Doctor of Philosophy in Molecular and Cellular Physiology.

The School of Graduate Studies requires the submission of completed forms at various times as the students progress through the program. All students will be provided with a list of required forms that must be submitted to the Graduate School Office at the time of completion of certain requirements.

Seminar

1. Importance of a Seminar Program

Seminar is the one occasion in which all faculty, postdoctoral researchers, and graduate students meet regularly and discuss research findings and new developments in the disciplines of Physiology. It is an important component of a training program for the predoctoral and postdoctoral student and is a special opportunity for the graduate student: a) to learn how to present and discuss experimental data, b) to think on his/her feet, and c) to demonstrate his/her ability as a biomedical scientist. A good seminar program in which all researchers within the department participate can be an enjoyable activity that fosters unity and mutual respect among the participants and provides an atmosphere that promotes research and collaborative investigations.

2. Policy Statements for Graduate Students

A. Attendance at all Departmental seminars and at seminars given by visitors to the Department is mandatory. Each student is expected to attend every seminar (unless it conflicts with classes) and students are expected to participate actively by asking questions, contributing to the discussion, etc.

B. Every graduate student in the Department of Molecular and Cellular Physiology is to present a minimum of one seminar in the departmental seminar program. In general, these seminars will concern the student's research problem. The topic for presentation and the date of the seminar must be approved by the faculty member in charge of the seminar program.

C. Another research seminar will be presented after the dissertation has been accepted by the student's Dissertation Committee and is a final overview of the student's research achievements.

Other Scholarly Activities

In addition to the requirements concerning Coursework, Research, and Seminar, every graduate student is expected to participate in other scholarly activities. These activities vary from individual to individual, but students are expected to participate in journal clubs, to develop good reading habits so that they can keep abreast of major developments in their field and in related biomedical sciences, to present their research findings at meetings of professional societies in their field, to show leadership and maturity by assisting other graduate students and staff in research techniques and the use and maintenance of instrumentation, to help in the active recruitment of graduate students into the program, and to take an active role in maintaining the research environment of the Department and the University.

It is expected that every doctoral candidate will publish at least one first-author paper on the findings from his/her dissertation research in a national/international journal.

Teaching

Teaching is an important aspect of the doctoral training program, and all students are required to participate in teaching. This will take the form of assisting in the teaching of the Allied Health Physiology Course

Master of Science Program

Our Master of Science program consists of lecture courses in Physiology (primarily), biochemistry, and biostatistics, along with journal club, a seminar presentation and independent research. The research project begins in the first year. Our program emphasizes the need for a strong, knowledgeable background of reviewed literature, a well-planned experimental approach to problem-solving and skilled interpretation of results. In addition, students will be guided in the development of excellent written and oral communication skills. In order to graduate, students write and defend a thesis on their research.

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Department of Pharmacology, Toxicology & Neuroscience

https://www.lsuhs.edu/departments/school-of-graduate-studies/pharmacology-toxicology-and-neuroscience

Nicholas E. Goeders, Ph.D., Professor and Head
318-675-7850 (phone)
nicholas.goeders@lsuhs.edu

GENERAL DESCRIPTION OF THE PROGRAM

The goal of the graduate training program in Pharmacology, Toxicology & Neuroscience is to provide the skills necessary for the graduate to pursue an independent career in biomedical research at a university, research institute, hospital, government agency, or in industry. The program provides graduate training through advanced courses, participation in seminars and national meetings, and the preparation of grant proposals. Hands-on laboratory research is emphasized at all stages of the program.

The major research interests in the Department of Pharmacology, Toxicology & Neuroscience are in the areas of: neuropharmacology, neuroscience, toxicology, drug and alcohol addiction, stress, molecular basis of locomotor activity in aging and neurodegenerative disease, carcinogenesis and cancer chemoprevention, oxidative mechanisms of toxicity, molecular regulation of toxicity and apoptosis

RESIDENCE REQUIREMENTS FOR THE DOCTORAL STUDENT

Normally, it takes four or more years to complete the requirements for the doctoral degree. Students who enter the doctoral program with an M.S. or other graduate degree in science may be allowed to complete the program in less time, but these students must meet all requirements, pass the Qualifying and Preliminary Examinations, and prepare and defend a Doctoral Dissertation.

STIPEND AND FINANCIAL SUPPORT

The Department makes every effort to provide financial support to full-time doctoral students who are in good academic standing and who continue to make progress toward the degree. Stipends are available from a variety of sources. These include Departmental fellowships, individual fellowships, departmental training grants, and research assistantships on individual research contracts and grants. Students currently receive a stipend of $26,000 per year.

Students are encouraged to apply to granting agencies such as the National Science Foundation, National Institutes of Health (NIH), American Heart Association, Department of Defense, Pharmaceutical Research and Manufacturers of America Foundation, Howard Hughes Medical Institute etc., to obtain individual predoctoral fellowships. Applicants should consult the Department Graduate Program Director and the Office for Sponsored Programs regarding the possibilities. Students are encouraged to submit their dissertation proposals to NIH as individual National Research Service Awards (NRSA). Students that receive external fellowships that pay for their stipend are eligible for an up to a $5000 yearly stipend supplement to be provided by the Department or their advisor.

Intramural predoctoral fellowships are also available from LSU Health Sciences Center - Shreveport to graduate students who have completed the major portion of their coursework and successfully passed their dissertation proposal defense. Applications for these fellowships are accepted twice each year, in October and in April. Three types of fellowships are available, (1) Malcolm Feist, for cardiovascular research, (2) Carroll Feist, for cancer research, and (3) Ike Muslow, for research in all other areas.

These fellowships provide $28,000 yearly stipends and are renewable twice, for a total of 3 years of funding. Students are encouraged to submit applications, based on their dissertation proposals, to one of these sponsors.

The Department will make every effort to administer funds for stipends and financial assistance as fairly and equitably as possible. Graduate students receive stipends and financial help to allow them to devote all their energy and time to their research and graduate training. Therefore, students may not seek outside employment, even part-time. LSU rules do not permit graduate students receiving stipends to receive additional funds from University employment. Students in financial difficulty should discuss this matter with their advisor, the Departmental Graduate Program Director, the Department Head, or the Dean of the School of Graduate Studies.

Students will receive a maximum of 4 years of departmental financial support for their stipend. Academic advisors are expected to pay for the student's stipend after the student has passed the Preliminary Examination. If an advisor has insufficient resources to pay for the stipend, the student should apply for grants and fellowships since departmental funds are limited.

Students receiving financial support must maintain a B average (good academic standing), to make continual progress toward their degree, and to follow the recommendations of their Advisory Committee and major professor. Student progress will be reviewed annually by the faculty, and the results of this evaluation will determine continuation in the program and financial support. Stipends will be revoked for students on academic probation beginning one semester after placement on probation. For example, if a student is placed on probation at the end of the fall semester and fails to achieve a 3.0 cumulative GPA by the end of the spring semester, the student will lose their stipend at the start of the summer semester. Students will receive academic advising and counseling from the Graduate Program Director and other appropriate educational personnel as needed.

TUITION FOR Ph.D. STUDENTS

Generally, students receiving stipends will have their tuition paid by funds from the School of Graduate Studies. However, financial exigencies may limit the availability of tuition funds.

HEALTH INSURANCE AND ACTIVITY FEE

The School of Graduate Studies requires all students to be responsible for the payment of the University Activity Fee, and to purchase Health Insurance or provide evidence of other health care coverage. Students are also responsible for other incidental fees such as the costs of their thesis and dissertation binding, diploma costs, and other expenditures that are not covered by tuition.

LEAVE

Personal days
All graduate students are entitled to 10 working days of personal time. The 10 days allotted each year cannot be accrued (carried over to the next academic year). In addition, any unused time will be forfeited. The request for annual leave must be submitted at least two weeks prior to the desired start date to the student's Dissertation Advisor (or Departmental Graduate Program Director for all first year students) and the Department Head. If not requested prior to the absence, appropriate forms should be completed immediately after leave has been taken.

Students are also permitted 2 days of funeral leave to attend services or burial rites for immediate family members (father, mother, sibling, spouse, child, in-laws, grandparents, grandchild, and step-father, step-mother, and step-siblings). The student should submit a leave request indicating the desired dates for funeral leave. If not requested prior to the absence, appropriate forms should be completed immediately after leave has been taken.

Leave of Absence
Leave of absence without pay may be granted for extended illness, disability or personal reasons. The student should submit a written request explaining fully the reason(s) for the request and indicate the dates on which the leave of absence will begin and end. As much notice as possible should be given to the student's Dissertation Advisor (or Departmental Graduate Program Director for those students who have not yet selected a Dissertation Advisor), the Department Head, and the Dean of Graduate Studies before beginning the leave. Leaves of absence will not be granted for periods that exceed one year. A written request for reinstatement into the program must be submitted to the Department and the School of Graduate Studies at least two weeks in advance. If the Leave of Absence exceeds one year then re-application to the program and Graduate School will be required.

Training-Related Travel
Attending meetings, conferences, or learning in skills from researchers at outside universities can be valuable training experiences for students. It is expected that students will present his/her research findings at regional, national or international meetings of appropriate scientific societies. Prior Approval forms are required for all travel outside the campus, even if no reimbursement is requested. The Prior Approval forms must be completed and turned into the Graduate Program Director **at least 2 weeks** before travel. If the travel is scheduled for sooner than 2 weeks, the student must e-mail the Department Head indicating that the need for immediate travel and asking for approval to be expedited. The student's Major Advisor must indicate his/her approval of the travel and any budget expenditures by initialing the completed form next to your signature. In general, travel to conferences is not permitted for first year students if it will require that the student must miss any classes. If the conference will not interfere with coursework, then for first year students, the Graduate Program Director will initial the forms. Failure to complete the forms in a timely fashion may result in disapproval of the request, non-reimbursement of expenses, or require that annual leave be taken. There is no guarantee that training-related travel will be reimbursed, so students should discuss their travels plans carefully with their advisors.

EXIT PROCEDURES

Graduate Students must follow the same exit procedures as any employee. Human Resources Management requires a resignation letter, Employee Clearance Form, and Separation Summary. Turning in keys and ID Badge are part of the exit procedures. The student's advisor will be responsible for ensuring that exit procedures are completed appropriately. Please consult the Business Manager for more details on the Exit Procedure.

REQUIREMENTS FOR THE Ph.D. DEGREE IN PHARMACOLOGY

The Doctor of Philosophy is the highest academic degree offered by the University. It is conferred only for work of distinction in which the student displays original scholarship. The major emphasis of the doctoral program in the Department of Pharmacology, Toxicology & Neuroscience will be to provide an environment for the student to learn how to think, how to answer research questions in the laboratory and in the literature, how to write and communicate, and how to develop into a competent biomedical scientist. The doctoral program consists of ten major components:

I. RESEARCH
II. COURSEWORK
III. JOURNAL CLUB
IV. SEMINAR
V. ANNUAL REPORT AND EVALUATION
VI. QUALIFYING PROCESS (WRITTEN AND ORAL QUALIFYING EXAMINATIONS)
VII. PRELIMINARY EXAMINATION (DISSERTATION PROPOSAL)
VIII. DOCTORAL DISSERTATION

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I. RESEARCH

A. Research Program

The Research component of the doctoral program consists of laboratory research, presentations at research seminars (see below), the formulation of a research proposal, presentation of research findings at scientific meetings, writing papers for publication, and the preparation and defense of a Doctoral Dissertation. The student is expected to devote a considerable amount of time to research both in the laboratory and in the literature even during the first two years when there is substantial course work. A key part of becoming a biomedical scientist is for students to learn how to apportion their time so that progress can be made in research. The emphasis will be on research and the time available for research will increase each year. New students will be apprised of the ongoing research of the faculty during the first semester. During the first year, students will gain first-hand knowledge of the research in selected laboratories during rotations through these laboratories.

B. Laboratory Rotations (PHARM 203)

Students will gain experience in research laboratories by a series of rotations in their first year. This experience will form the basis for the choice of a faculty advisor. The duration of the rotation will depend on current Department policies, but normally a student will perform three such rotations. The first rotation will take place during the first summer semester of the program. The second rotation will be during the fall semester of the first year, and the third will occur during the spring semester. Students will be expected to spend at least 15-20 hours per week in the laboratory for their rotations.

A minimum of two rotations in different laboratories of prime Department Faculty members is required. Only one rotation can be in the laboratory of a jointly appointed Faculty member. Rotations must be scheduled with the faculty member(s) involved on an individual basis. Students must also notify the Graduate Program Director and Course Director of Methods in Pharmacology PHARM 203 which faculty member will advise them during the rotation. At the end of each rotation, the student must prepare a written report of the research accomplished and submit it to the head of the laboratory, with a copy to the Departmental Graduate Program Director. The student's grade for the course (Methods in Pharmacology, PHARM 203) will be determined by the faculty member in whose laboratory they worked based on both the quality of the research and the written report.

C. Selection of a Major Professor

The selection of the major professor (advisor) will be made by the student in a letter to the Department Head. Students will choose their major advisor after completing their rotations and will begin their dissertation research thereafter. Every effort will be made to place the student in the laboratory of his/her choice provided that the faculty member is agreeable and that space and funds are available to support the student and his/her research.

Faculty members who accept the responsibilities of having a graduate student join their laboratory and serving as their advisor are expected to make every effort to obtain financial support for the student. The major advisor will be responsible for the stipend after the student completes the Preliminary Examination. Faculty members holding research grants will be expected to provide support for students working on the funded project. This support will conform to the current level of stipends set by the Department Faculty.

D. Research Advisory Committee

The student's Research Advisory Committee exists to advise him/her as he/she progresses through the graduate program. Its primary function is to advise the student on the direction(s) of his/her research, but it will also be involved in helping the student select elective courses and in examining the student's Research Proposal and Doctoral Dissertation. The student is required to meet with his/her Research Advisory Committee at least twice a year. This will allow the Committee to track the student's progress to assure timely completion of the program. It is the responsibility of the student to schedule these meetings and to report to the Graduate Program Director that such a meeting has occurred. There are two types of Research Advisory Committees based on the stage of the student's career.

First Year Committee: During the student's first year, the student must meet with the Departmental Graduate Program Director, the Chair of the Graduate Recruitment Committee, and his/her laboratory rotation mentors to discuss his/her progress. The Department Head will also participate when possible.

Research Advisory Committee: After a student has chosen a major advisor, he/she should select a Research Advisory Committee. The Committee's function will be to provide advice and support for the student's education and research and to assist in formulating the Research Proposal. This committee should be formed as early as possible following selection of a major advisor, but no later than the start of the Qualifying Examination process. This will ensure that the committee members can adequately evaluate the quality of the Research Proposal. An informal research advisory committee may be formed by the student during the second year in consultation with their major advisor. This committee must contain the major advisor and at least three other members from the department (three of the four must be prime Pharmacology faculty), but does not need to contain outside members. This committee will serve until the formal committee is chosen, prior to filing the Research Proposal. The members of the informal committee must be approved by the Department Head, but do not need to be approved by the graduate school.

The formal committee will be composed of five members of the LSU Health Sciences Center-Shreveport Graduate Faculty: the Major Advisor (Chair), three faculty members from the Department of Pharmacology, Toxicology, and Neuroscience, and one faculty member whose primary appointment is in another LSU Health Sciences Center-Shreveport department. For the purposes of the Research Advisory Committee, faculty members with joint appointments in the Pharmacology Department will be considered a Pharmacology Department committee member. The composition of this Committee should be formalized in a letter to the Department Head, who must approve the composition of the Committee. The members of the student's Research Advisory Committee, including the Major Advisor, may be changed at any time up until successful completion of the Preliminary Examination/Research Proposal Defense with the approval of the Department Head. In addition to advising the student on coursework and research, the Research Advisory Committee will conduct the Preliminary Examination and final examination of the Doctoral Dissertation.

II. COURSE WORK FOR THE DOCTORAL DEGREE

Each student is expected to know and understand the concepts, experimental approaches, and recent developments in the field of Pharmacology and Toxicology or Neuroscience. To obtain this knowledge, the student is required to complete a core curriculum of graduate courses and to supplement this core with other courses recommended by his/her major professor and/or the Advisory Committee. For the Ph.D. degree, the School of Graduate Studies requires a minimum of 32 credit hours of which at least 20 must be in letter grade courses. No more than fifteen credits may be counted for research and no more than four credits for seminar, even though both may be carried throughout the program. Because of the complexity of pharmacology and its reliance on other basic sciences, the number of credit hours necessary for the Ph.D. degree exceeds this minimum.

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A. Good Academic Standing and Probation

Students must remain in good academic standing at all times to remain in the program. Students who fail to maintain at least an overall grade point average of 3.0 (i.e. a “B”) or higher on a 4.0 scale will be placed on probation. They will have one calendar year from the end of the semester at which the GPA falls below 3.0 (normally the three subsequent semesters) to raise their overall average to 3.0. Students who fail to raise their average to “B” will be dropped from the Program. Students on probation may lose their stipends and tuition waivers (see additional information in the Stipend section).

Students are expected to earn a grade no lower than a "B" in each of the departmental courses offered by the Department of Pharmacology, Toxicology and Neuroscience, i.e. those labeled as PHARM. If a student earns a grade less than a "B" or an unsatisfactory grade in a S/U course, including Introduction to Research in Pharmacology (PHARM 209), he/she will be expected to repeat or remediate that course. Students are required to receive a "B" or better in five out of the seven credits for the IDSP 200 series Foundations in Biomedical Sciences. A "C" will be required for the remaining 2 credits. If a student receives a "D" or there are more than 2 credits in which a "C" was achieved, students will need to retake appropriate coursework. Students who receive a “F” in any course will be subject to dismissal from the program.

B. **Core Curriculum** for all doctoral students. The IDSP courses are interdisciplinary and include the Departments of Cellular Biology and Anatomy, Biochemistry and Molecular Biology, Microbiology and Immunology, and Molecular and Cellular Physiology.

Course Name	Listing	Credits
1) Introduction to Research in Pharmacology	PHARM 209	1
2) Methods in Pharmacology	PHARM 203	9 (3 each semester)
3) Biochemistry and Molecular and Cell Biology:	IDSP 110	3
4) Cell Biology and Signaling	IDSP 118	3
5) Foundations of Biomedical Sciences I:		
Cardiovascular System	IDSP 212	1.5
Renal System	IDSP 213	1
Respiratory System	IDSP 214	1
Gastrointestinal System	IDSP 216	1
Endocrine System	IDSP 217	1
Nervous System	IDSP 218	1.5
6) Basic Statistics	IDSP 226	1
Advanced Statistics	IDSP 227	1
7) Pharmacokinetics and Pharmacodynamics	PHARM 258	1
8) Molecular Pharmacology	PHARM 260	2
9) Neuropharmacology	PHARM 233	2
OR		
Toxicology	PHARM 245	2

10) Journal Club	PHARM 272 (1 each semester first year) PHARM 270-271 (1 each semester year 2+)	2 2
11) Pharmacology Seminar	PHARM 298	4+
12) Grant Writing	IDSP 235A	1
13) Ethics and Professionalism	IDSP 240A and B	1
14) Dissertation Research	PHARM 400	1-9

C. Additional Curricula for Areas of Specialization

All students enrolled in the Department of Pharmacology will be considered departmental graduate students and, as such, required to complete the core curriculum. At the start of their second year, students will choose either the Neuroscience or Toxicology track. In the fall semester of their second year, students will take either Neuropharmacology/Neurochemistry OR Toxicology, as appropriate. Note that they may take both if desired. A set of advanced electives has been established for each of these specialization tracks. For the Toxicology or the Neuroscience track, students will enroll in at least two of these electives. At least one of these courses must be a letter-graded (A-F) course.

I. NEUROSCIENCE
Recommended courses:

PHARM 240 – Behavioral Pharmacology I
PHARM 242 – Pharmacology of Drugs of Abuse
PHARM 225 – Advanced Topics in Pharmacology
IDSP 230 – Advances in Gene Therapy
PHARM 204 – Brain Research through Advanced and Innovative Neurotechnologies

II. TOXICOLOGY
Recommended courses:

PHARM 220 – Clinical Toxicology
PHARM 243 – Environmental Toxicology
PHARM 225 – Advanced Topics in Pharmacology
IDSP 250A and B – Current Trends in Toxicology

D. Elective Courses

A listing of the graduate courses offered by the Department of Pharmacology, Toxicology and Neuroscience is included below (II F).

E. Transfer of Graduate Credit

Transfer of graduate course credits earned in a graduate program at another institution is possible with the approval of the Department Faculty and the School of Graduate Studies. In order to waive the requirement for enrollment in the Foundations of Biomedical Sciences, Cell Biology and Signaling, or Biochemistry and Molecular Biology courses, the student may be required to take a comprehensive

exam in those areas and to score a B or better. All students will be required to take the graduate level courses (PHARM 203, 258, 260, 270 (or 271 or 272), 298, 400) while in residence at LSUHSC-S.

Students with M.D., D.D., or D.V.M. degrees from US accredited institutions who are accepted into the graduate program within one year of receipt of their professional degree may petition to be exempt from taking Foundations of Biomedical Sciences, Cell Biology and Signaling, or Biochemistry and Molecular Biology as part of the core curriculum. Students with an M.D., D.D., or D.V.M. degree who are accepted into the graduate program two or more years after completion of their professional degree may be required to take the Foundations of Biomedical Sciences, Cell Biology and Signaling, Biochemistry and Molecular Biology courses as deemed appropriate by the faculty.

F. Listing and description of graduate courses in Pharmacology and Therapeutics

PHARM 203 *Methods in Pharmacology* (3 Credits, letter grade)
Faculty Member in charge: Kenneth McMartin, Ph.D.
When course is offered: Every semester
Prerequisites for course: None
Description of course: Hours and credit by arrangement. Consists of rotations through laboratories of department faculty. In general, the course should be taken for each rotation.

PHARM 204 *Brain Research through Advanced and Innovative Neurotechnologies* (1 Credit, letter grade)
Faculty Member in charge: Xiaohong Lu, Ph.D.
When course is offered: As required
Prerequisites for course: Neuropharmacology (PHARM 233)
Description of course: The objective of the course is to enhance the students' depth of knowledge of the cutting edge genetic, molecular, and pharmacologic approaches used for the anatomic and functional interrogation of neural circuity, brain development and disease.

PHARM 209 *Introduction to Research in Pharmacology* (1 Credit, S/U)
Faculty Member in charge: Kenneth McMartin, Ph.D.
When course is offered: Summer, Annually
Prerequisites for course: None
Description of Course: An introduction to research in Department of Pharmacology labs for incoming graduate students. This course will aid students in choosing their research rotations.

PHARM 220 *Clinical Toxicology* (1 Credit, letter grade)
Faculty Member in charge: Kenneth E. McMartin, Ph.D.
When course is offered: Summer, Annually
Prerequisites for course: None
Description of course: Three day, all day course of lectures and panel discussion. This course deals with clinical and laboratory methods for the diagnosis and treatment of intoxication from drug over dosage and poisons. Special problems associated with drug abuse and industrial and environmental toxicology are also discussed. Independent topical paper is required.

PHARM 225 *Advanced Topics in Pharmacology* (1-5 Credits, letter grade)
Faculty Member in charge: Staff
When course is offered: As required
Prerequisites for course: Foundations in Biomedical Sciences
Description of course: Hours and credits as well as lecture and laboratory to be arranged depending upon the special topic. This course is designed for advanced studies of special groups of drugs such as steroids, antibiotics, antihistamines, analgesics, etc.

PHARM 233 *Neuropharmacology* (2 Credits, letter credit)

Faculty Member in charge: Hyung Nam, Ph.D.
When course is offered: Fall, Annually
Prerequisite for course: Foundations in Biomedical Sciences: Nervous System (IDSP 218)

Description of course: A study of the structure and properties of membranes, axoplasmic transport, and the fundamental principles of neurotransmission and neuroendocrinology. Detailed study of the chemical transmitters in the central nervous system with special emphasis on drug-modifications of transmitter action and neuronal function, drug-modification of physiological function and behavioral pharmacology.

PHARM 238 *Cardiovascular Pharmacology* (2 Credits, letter grade)

Faculty Member in charge: Staff
When course is offered: As required
Prerequisites for course: Foundations in Biomedical Sciences: Cardiovascular System (IDSP 212)

Description of course: Two hours of lecture. The study of drugs used to treat cardiovascular disorders with primary emphasis on their fundamental mechanisms of action.

PHARM 240 *Behavioral Pharmacology I* (1 Credit, letter grade)

Faculty Member in charge: Christopher Schmoutz, Ph.D.
When course is offered: As required
Prerequisites for course: Neuropharmacology (PHARM 233)

Description of course: Basic principles of the experimental analysis of behavior, including operant and classical conditioning, and schedules of reinforcement. Definition and scope of behavioral pharmacology. Behavioral mechanisms of drug actions. Drug-environment interaction.

PHARM 242 *Pharmacology of Drugs of Abuse* (1 Credits, letter grade)

Faculty Member in charge: Christopher Schmoutz, Ph.D.
When course is offered: As required
Prerequisites for course: Foundations in Biomedical Sciences: Nervous System (IDSP 218)

Description of course: This course will discuss the behavioral and physiological effects of drugs of abuse and the mechanisms of action of these substances. This is a writing intensive course.

PHARM 243 *Environmental Toxicology* (2 Credits, letter grade)

Faculty Member in charge: Kenneth E. McMartin, Ph.D.
When course is offered: As required
Prerequisites for course: None

Description of course: Two hours of lecture and classroom discussion. A study of the effects of industrial, agricultural and other human-produced pollutants on the deterioration of the environment. The control of environmental problems will be illustrated in case histories.

PHARM 245 *Toxicology* (2 Credits, letter grade)

Faculty Member in charge: Yunfeng Zhao, Ph.D.
When course is offered: Fall, Annually
Prerequisites for course: Permission of instructor

Description of course: Three hours of lecture and classroom discussion. A study of the general principles of toxicology, including the biochemical and physiological mechanisms involved in injury. Specific organ systems and toxic compounds will be discussed for illustration.

PHARM 251 *Research in Pharmacology* (1-8 Credits, S/U)

Faculty Member in charge: Kenneth McMartin, Ph.D.

When course is offered: Every semester
Prerequisites for course: None

Description of course: This course offers an in-depth experience in research development, design, methodology and implementation. Students will undertake specific projects of limited scope and develop their findings under the guidance and direction of faculty preceptors.

PHARM 258 *Pharmacokinetics and Pharmacodynamics* (1 Credit, letter grade)

Faculty Member in charge: Kevin Murnane, Ph.D.
When course is offered: Summer, Annually
Prerequisites for course: Biochemistry and Molecular Biology (IDSP 110) and Cells and Signaling (IDSP 118)

Description of course: Two hours of lecture, twice a week. In depth presentation of receptor quantification and drug pharmacokinetics. Material is covered in lecture and through the completion of problem sets. Student's progress is judged based on examination performance and take home problems.

PHARM 260 *Molecular Pharmacology* (1.5 Credits, letter grade)

Faculty Member in charge: Christopher Schmoutz, Ph.D.
When course is offered: Summer, Annually
Prerequisites for course: Biochemistry and Molecular Biology (IDSP 110), Cells and Signaling (IDSP 118) and Pharmacokinetics and Pharmacodynamics (PHARM 258)

Description of course: Two hours of lecture, twice a week and student presentations. This course provides a detailed examination of molecular events that occur during and after drugs bind to receptors. Intracellular signal transduction events and cross-talk among different systems are emphasized.

PHARM 270 *Discussions in Neurochemistry & Neuropharmacology* (1 Credit, S/U)
PHARM 271 *Discussions in Toxicology* (1 Credit, S/U)
PHARM 272 *Discussions in Pharmacology* (1 Credit, S/U)

Faculty Member in charge: Yunfeng Zhao, Ph.D.
When course is offered: Biannually, Fall and Spring
Prerequisites for course: None

Description of course: A journal club/research presentation format in which students present and discuss new concepts and research findings in topics relating to pharmacology (PHARM 272), neurochemistry and neuropharmacology (PHARM 270), or toxicology, including biochemical, clinical and environmental (PHARM 271). Students will be taught critical assessment of research data and how new techniques can be applied to research problems. Grading will be by faculty on the basis of student presentations and participation in class discussions.

PHARM 298 *Seminar* (1 Credit, S/U)

Faculty Member in charge: Yunfeng Zhao, Ph.D.
When course is offered: Biannually, Fall and Spring
Prerequisites for course: None

Description of course: Students are required to attend and participate in oral presentations of research data. The student should register for seminar each semester they are taking classes. Grades will be assigned based on seminar presentation, but students must participate in seminar each semester regardless of whether they are registered for the course.

PHARM 300 *Thesis Research* (1-9 credits, S/U)

Faculty Member in charge: Staff
When course is offered: Every semester
Prerequisites for course: Registration by permission of advisor

Description of course: This course consists of conducting research to fulfill the requirements for the Master of Biomedical Science degree. The research is conducted under the direction and guidance of the student's approved faculty research advisor and research advisory committee members. Initially, the students learn about a specific thesis research topic, then generate a hypothesis and master the techniques required to test that hypothesis. As the project develops, students continue to collect data, acquire new techniques and learn the literature relevant to their research project. Consequently, as the research advances students are exposed to new methods and new information each semester as they develop their research skills. The students meet regularly with their advisors and committees and provide oral and written updates of their research progress. Because each student is responsible for a different project, the length of time required to complete each project varies as does the number of times the student registers for this course. Amount of credit for each semester is stated at the time of registration.

PHARM 400 *Dissertation Research* (1-9 Credits, S/U)

Faculty Member in charge: Staff
When course is offered: Every semester
Prerequisites for course: Registration by permission of advisor

Description of course: This course consists of conducting research to fulfill the requirements for the Doctor of Philosophy degree. The research is conducted under the direction and guidance of the student's approved faculty research advisor and research advisory committee members. Initially, the students learn about a specific dissertation research topic, then generate a hypothesis and master the techniques required to test that hypothesis. As the project develops, students continue to collect data, acquire new techniques and learn the literature relevant to their research project. Consequently, as the research advances students are exposed to new methods and new information each semester as they develop their research skills. The students meet regularly with their advisors and committees and provide oral and written updates of their research progress. Because each student is responsible for a different project, the length of time required to complete each project varies as does the number of times the student registers for this course. Amount of credit for each semester is stated at the time of registration.

III. JOURNAL CLUB (PHARM 270, 271 or 272)

Appropriate assessment of the scientific literature is a critical activity for a scientist. To help students acquire this ability, the Department of Pharmacology, Toxicology & Neuroscience sponsors journal clubs in various areas of pharmacology. Journal clubs are intended to train students to assess the scientific literature, and to extend both the depth and the breadth of their knowledge. Students are expected to attend and actively participate in all meetings of the Pharmacology Journal Club. Absences due to illness or other unavoidable circumstances must be approved by the Graduate Program Director.

A. Pharmacology Journal Club

The Pharmacology Journal Club meets weekly. The Club is run by the graduate students with administrative support from the departmental office staff. A faculty coordinator will supervise the Pharmacology Journal Club. Currently, Pharmacology Journal Club meets at 1 pm every Wednesday.

B. Schedule

The schedule will be copied and distributed by the office staff to all faculty, postdoctoral fellows, graduate students, and other interested faculty and staff. Changes to the schedule must be arranged by the individual students concerned, and must be communicated to all participants by e-mail or memorandum.

C. Presentations

Students will be required to present journal clubs throughout their graduate school career. Students will present a mentored journal club (with assistance from a senior student) in their first semester of graduate school. Each presenting student must choose an article and an appropriate faculty mentor for their journal club not less than one full week before the scheduled presentation. The faculty mentor must approve the article choice or provide alternative articles from which the student can choose. The topic of the article CANNOT be within the student's current area of research. The faculty mentor must agree to read the article and attend the presentation. Once the article is approved, the student must forward the PDF file of the article to the administrative support person by the Wednesday prior to the scheduled meeting. The choice of the faculty mentor will be included in the notice distributed with the article. Students and faculty will receive a copy of the article no later than the Friday before the presentation. All students must read the article prior to the journal club meeting and discuss the article by asking questions of the presenter. The presentation can be augmented with other information, but is not meant to be a seminar-like oral presentation. An important role of the faculty mentor will be to direct the discussion and elicit participation by ALL of the students.

Attendance at Pharmacology Journal Club is <u>mandatory</u> for all Ph.D. and M.S. graduate students. Other participants may attend as they wish.

IV. SEMINAR (PHARM 298)

A. Importance of Seminar

Seminar is the one occasion on which all faculty, postdoctoral researchers, and graduate students meet regularly to discuss research findings and new developments in pharmacology. It is a special opportunity for the graduate student to demonstrate his/her abilities as a teacher and biomedical scientist, to learn how to present and discuss experimental data, and to think on his/her feet. A seminar program in which all researchers within the Department participate can be an activity that fosters unity and mutual respect among the participants and provides an atmosphere that promotes research and collaborative investigations.

B. Seminar Policy Statement for Graduate Students

In the spring semester of the first year, students will present a brief (15 minute) seminar based on the poster the student will subsequently present at Graduate Research Day. It should be delivered in a critical and informative manner such that the audience can appreciate the state of the art of the research. The student is expected to read a considerable body of literature so that he/she has a good understanding of the field and the techniques and experimental approaches being used to address the key questions.

In the first semester of the second year, students will present a 50 minute seminar based on the research being conducted in their resident laboratory. The talk is expected to cover research related to the student's anticipated project. Subsequently, the student will present a Dissertation Proposal and this presentation will count as the second year spring semester seminar. Students who have passed the Preliminary Examination (Dissertation Proposal) will present data discussions each subsequent fall and spring semester. The Data Discussion will be 25 min in length (plus 5-10 min for questions) and will update the faculty on the progress of their research. The Dissertation Defense will serve as the student's final seminar.

Seminars will start with statements of the questions asked and background information for the audience. The body of the seminar should contain the experimental rationale and methodology employed to answer the questions, followed by presentation of experimental data. The summary should contain the

conclusions reached by the student from the presented data as well as a discussion of further studies that could be conducted. Students are encouraged to use computer-based presentations using such software applications as Microsoft PowerPoint. Slides should be prepared carefully, as for a professional presentation. The student is encouraged to practice the seminar with a senior student and/or his/her advisor.

One week prior to the seminar, the student must provide the Departmental staff with an approved abstract that will then be distributed to all faculty, postdoctoral trainees, and graduate students in the Department. The abstract should give the date, time and place of the seminar and present a summary of the seminar topic.

Attendance at Departmental seminars and at seminars given by visitors to the Department is mandatory. Every student is expected to attend every seminar, and students are expected to participate actively in seminar by contributing to the discussion. Students who are registered for the course are required to participate actively in seminar by contributing to the discussion or by writing a short seminar summary for speakers who are from outside of LSU Health Sciences Center-Shreveport. Summaries must be turned into the Faculty Seminar Coordinator within 7 days of the seminar or a grade of "U" will be given for the course.

V. THE DOCTORAL PROGRAM AT A GLANCE

Below is a representative list of courses that a typical student may take in the first 6 semesters of graduate study. This information is provided in "checklist" form, so as to aid the student in planning for registration. Note that these are based on current requirements and on the tracks offered by our department (i.e., Toxicology vs. Neuroscience). However, exact scheduling may vary.

Ph.D. Degree Course Requirements Check List

Summer: Semester 1

PHARM 203	*Methods in Pharmacology*	3 Credits	letter grade	_____
PHARM 251	*Research in Pharmacology*	2 Credits	S/U	_____
PHARM 209	*Intro to Research in Pharmacology*	1 Credit	S/U	_____

Fall: Semester 2

IDSP 110	(*Biochemistry*)	3 Credits	letter grade	_____
IDSP 118	(*Cells and Signaling*)	3 Credits	letter grade	_____
IDSP 240A	*Ethics and Professionalism*	0.5 credit	S/U	_____
PHARM 270, 271, or 272 (Journal Club)		1 Credit	S/U	_____
PHARM 203	*Methods in Pharmacology*	3 Credits	letter grade	_____
PHARM 298	*Seminar in Pharmacology*	1 Credit	S/U	_____

Spring: Semester 3

IDSP 212	*Cardiovascular System*	1.5 Credits	letter grade	_____
IDSP 213	*Renal System*	1 Credit	letter grade	_____
IDSP 214	*Respiratory System*	1 Credit	letter grade	_____
IDSP 216	*Gastrointestinal System*	1 Credit	letter grade	_____
IDSP 217	*Endocrine System*	1 Credit	letter grade	_____
IDSP 218	*Nervous System*	1.5 Credits	letter grade	_____
PHARM 270, 271, or 272 (Journal Club)		1 Credit	S/U	_____
PHARM 203	*Methods in Pharmacology*	3 Credits	letter grade	_____
PHARM 298	*Seminar in Pharmacology*	1 Credit	S/U	_____

Summer: Semester 4

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PHARM 258	*Pharmacokinetics & Pharmacodynamics*	1 Credit	letter grade	_____
PHARM 260	*Molecular Pharmacology*	1.5 Credits	letter grade	_____
IDSP 240B	*Ethics and Professionalism*	0.5 Credit	S/U	_____
PHARM 251	*Research in Pharmacology*	1-8 Credits	S/U	_____

Fall: Semester 5

PHARM 233 or 245 *Neuropharmacology/Neurochemistry or Toxicology*

		2 Credits	letter grade	_____
IDSP 235A	*Grant Writing*	1 Credit	letter grade	_____
IDSP 226	*Basic Statistics*	1 Credit	letter grade	_____
IDSP 227	*Advanced Statistics*	1 Credit	letter grade	_____
PHARM 270, 271 or 272 (Journal Club)		1 Credit	S/U	_____
PHARM 298	*Seminar in Pharmacology*	1 Credit	S/U	_____
PHARM 251	*Research in Pharmacology*	1-8 Credits	S/U	_____

Spring: Semester 6

QUALIFYING EXAMINATION

PHARM 270, 271, or 272 (Journal Club)	1 Credit	S/U	_____
PHARM 298 *Seminar in Pharmacology*	1 Credit	S/U	_____
PHARM 400 *Dissertation Research*	3 Credits	S/U	_____

Summer: Semester 7

PRELIMINARY EXAMINATION (Defense of the Research Proposal)

VI. ANNUAL REPORT AND EVALUATION

The students' progress will be evaluated annually by the faculty. The evaluation will be based on the Individual Development Plan (IDP), reports from the advisors, Research Advisory Committee Reports, grades in courses, and any other available information. Students must complete an Individual Development Plan (IDP) (forms are available from the Department of Pharmacology office) at the end of each spring semester, with the assistance of their mentors who contribute an evaluative paragraph. The student submits the IDP to the Department Head no later than June 30 of each year. A copy should be provided to the advisor and to the Graduate Program Director, who will place it in the student's file. Each student must meet with his/her committee shortly before submission of the IDP (spring semester meeting). If significant problems are identified in the Advisory Committee meeting, the Faculty may ask the student to meet with them for further evaluation. A decision will be made on the continuation of the student in the graduate program at the annual evaluation sessions. Feedback to the student, both positive and negative, will be given in the IDP by his/her advisor.

VII. QUALIFYING PROCESS

The qualifying process for students in the Department of Pharmacology, Toxicology & Neuroscience will be successful completion of the core curriculum and the Written and Oral Qualifying Examinations. As part of the process to qualify for the Ph.D. degree, the student must demonstrate that he/she is broadly competent in pharmacology. Although a student may be working in one area of pharmacology such as toxicology or neuropharmacology, he/she is expected to have a broad understanding of the concepts, experimental approaches, and major developments in all areas of pharmacology. To demonstrate this competence, the student must first pass the Written Qualifying Examination, and then the Oral Qualifying Examination.

Written Qualifying Examination

The Written Qualifying Examination will be taken in January of the second year or thereafter as appropriate. Students will have approximately 4-6 weeks after the conclusion of fall semester classes to intensively prepare for the exams. During this time students will not be required to be in the laboratory. The written exam will have a mix of required and optional questions. All prime departmental faculty will submit written questions for the examination, which will be compiled by a Qualifying Examination Committee appointed annually by the Department Head. The examination will be assembled by the Committee and reviewed for fairness and balance Individual answers will be graded by at least two faculty members, including the one who submitted the question. Grades will be A, A-,B+, B, B-, C+, C-, C, D+, D or F. Following completion of this grading process, the Faculty will meet to consider whether the student has passed the Written Qualifying Examination. To pass the examination, students must obtain a mean score of B (3.0) or higher on the entire examination.

Oral Qualifying Examination

Following successful completion of the Written Qualifying Examination, the Oral Qualifying Examination will take place about 2-4 weeks later. The purpose of the Oral Qualifying Examination is to demonstrate broad competence in pharmacology and specialized knowledge in the area of research that the student will pursue. The Oral Qualifying Examination Committee will be consist of five faculty composed of the following: the student's Major Advisor, two prime faculty of student's choice, and two faculty chosen by the Department Head. The Department Head will serve as the moderator of the exam and will ensure that the exams cover the appropriate areas and are fair and balanced. Committee members will ask multiple general and in-depth questions of the student, with follow-up questions as appropriate. The student should prepare for this examination by asking faculty to suggest reading material that should be mastered for this examination. He/she should also review carefully any areas identified as weak in the Written Qualifying Examination, consulting appropriate faculty as necessary. Passing of the examination will be decided by a majority vote of the faculty present at the Examination.

Failure of either oral or written examinations. Students who fail the Written or Oral Qualifying Examination may be dismissed from the program, or may petition to repeat the examination. Failure of a second Written or Oral Qualifying Examination will result in dismissal of the student from the program. A student who fails has the option to apply for admission into the Master's program. Upon acceptance into the Master's Degree program, the student should provide written notification to the Office of Graduate Studies. The student must then complete any remaining coursework and then register for Master's Thesis credits. A Master's Degree will require research, a written Master's Thesis based on that research, and a successful defense of the thesis.

VIII. PRELIMINARY EXAMINATION

The Preliminary Examination is the defense of the Research Proposal. After passing the Written and Oral Qualifying Examinations, the student must prepare and submit a Research Proposal. The Research Proposal must then be defended orally before the Preliminary Examination Committee. The Preliminary Examination Committee must consist of at least five members of the Graduate Faculty of LSU Health Sciences Center-Shreveport, at least one of which must have his/her primary appointment in a department other than Pharmacology, plus a faculty member from another institution who has expertise in the chosen area of research.

Preparation and Defense of the Research Proposal

A major component of a training program is to train students for a research career. Integral to this is the preparation and presentation of a Research Proposal describing the details and rationale for the proposed research project. Preparation of the Proposal allows the student to become familiar with the published research in his/her chosen field, to learn how to prepare a research grant, and to focus on his/her major research aims and the rationale and methods to achieve these aims.

The Research Proposal is to be prepared after successful completion of the Qualifying Examination and **should be completed within six months of it**. For most students, the Research Proposal will be completed during the second or third year of training. Students should consult with their advisors and Research Advisory Committee to determine the optimal timing. The Proposal will be written in the format of an NIH grant application. Students should familiarize themselves with the NIH grant application form. The submitted Research Proposal should include all the major components of the proposal, including an Abstract, Narrative, a complete Budget and Budget Justification, as well as the Research Plan (and, if appropriate, justification for the use of Human Subjects or Animals). It should be prepared under the direction of the major professor with the advice of the student's Research Advisory Committee. A copy of the proposal must be provided to each member of the Advisory Committee, and to the Graduate Program Director and the Department Head at least 6 weeks before the Defense to make sure that the committee agrees that it is sufficiently complete before the travel arrangements for the outside person are made. Students must complete the Grant Writing course (IDSP 235A) prior to writing their proposals.

The Department Head and the Dean of the Graduate School must approve requests for the Preliminary Examination. The student must complete and submit a *Request for Preliminary Examination* form to the Department Head for submission to the School of Graduate Studies **not less than 21 days** before the proposed date of the examination. A copy of the Research Proposal, and a notice of the proposed seminar, including the title, date, time, and place must accompany the Request form.

For the Defense, the student will present a seminar open to all faculty, students and staff at LSU Health Sciences Center-Shreveport describing the proposed research. The student in conjunction with the major advisor will be responsible for scheduling this seminar and for notifying all Departmental faculty, graduate students and postdoctoral research associates**. The member of the Committee from outside LSU Health Sciences Center-Shreveport must be present for this defense and prepare written comments on the strengths and weaknesses of the proposal.** The defense will be chaired by the Graduate Program Director, or in the event that the Graduate Program Director is the student's major advisor, by the Department Head or designee. Following completion of the seminar, the Preliminary Examination Committee will question the student further in closed session. This Committee will decide whether or not the student passes the Preliminary Examination based on the quality of the written Research Proposal and its oral defense. Students who pass the Preliminary Examination are nominated to become a "Doctoral Candidate". A student becomes a "candidate" after approval by the Dean of the Graduate School.

Failure of the Preliminary Examination may mean dismissal from the program or require a second examination. In this event, the Committee will provide the student with written reasons for the failure and may suggest revisions for the Proposal. If the second defense of the written Research Proposal is not successful, the student will not be allowed to complete the Ph.D. degree, but may petition the faculty to be considered as a candidate for a Master's Degree. Upon acceptance into the Master's Degree program, the student should provide written notification to the Office of Graduate Studies. The student must then register for Master's Thesis credits the following semester. A Master's Degree will require research, a written Master's Thesis based on that research, and a successful defense of the thesis.

IX. DOCTORAL DISSERTATION

Preparation and Defense of the Doctoral Dissertation

The dissertation research must be an original scholarly contribution to the field and is expected to contain original findings that address a fundamental question or questions. It is expected that the major findings of the study will be published in national or international peer-reviewed journals, and that the student will present his/her research findings at regional, national or international meetings of appropriate scientific societies.

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The Dissertation is to be prepared by the student with the guidance and advice of his/her major professor and Research Advisory Committee. Before starting to write the dissertation, candidates must call a meeting of their Research Advisory Committee to review all the experimental results they plan to include in the dissertation to ensure that they are of adequate quality and quantity for a doctoral dissertation. Upon completion of the dissertation, the student should provide copies of the Dissertation to all members of his/her Advisory Committee, and to the Department Head. After a minimum period of two weeks, the student should schedule a meeting of the Research Advisory Committee to determine whether the dissertation is adequate and sufficiently complete to allow scheduling of the Defense and Final Examination. If two or more members of the Research Advisory Committee feel that the dissertation is incomplete or inadequate to schedule the Defense, the Committee will make specific recommendations necessary to improve the dissertation.

The *Request for Dissertation/Thesis Defense and Final Examination* form, which nominates the Examining Committee, should be completed by the student and submitted to the Department Head. Because this request must be submitted to the Graduate School at least two weeks prior to the Defense date, the request must be submitted to the Department Head at least twenty-one days before the date of the proposed defense. Graduate School procedures require that notice of the Final Defense Seminar be distributed by the Major Professor to the Graduate Faculty of LSU Health Sciences Center-Shreveport announcing the seminar title, and the time, date, and location, at least one week before the presentation.

As part of the Final Examination the student will be required to present a research seminar open to all faculty, students, and staff. The purpose of this seminar is to allow the student to present an overview of the completed research and to demonstrate that the research is of high enough quality to merit a doctoral degree. An announcement of the seminar must be sent to all Department Faculty, postdoctoral fellows, and students at least one week before the seminar.

Timetable for the submission of a Ph.D. dissertation:

1. Six weeks before the proposed date of the defense and final examination, the student must provide copies of the complete dissertation to each member of his/her Research Advisory Committee and to the Department Head.
2. A meeting of the Research Advisory Committee must be scheduled to review the dissertation and to determine whether it is of sufficient quality to be submitted to the School of Graduate Studies.
3. The *Request for Dissertation/Thesis Defense and Final Examination* form must be completed and submitted along with a copy of the dissertation to the Department Head, at least 21 days before the proposed date of the Defense. This request includes the date, time and place for the presentation. The time must be scheduled early enough during the day to allow enough time for a full examination.
4. If approved, the Department Head will submit the Examination Request form to the School of Graduate Studies not less than 14 days before the proposed Defense.
5. Once approved by the School of Graduate Studies, the student must ensure that a notice of the seminar, which includes a 250 word abstract about the dissertation research that will be presented, is distributed to all faculty, students and postdocs in the Department of Pharmacology, Toxicology and Neuroscience and other interested faculty, students and postdocs.

The Dissertation Defense and Final Examination will focus on the dissertation research and the Dissertation itself. The student will be expected to answer questions about the work, defend the validity of the conclusions, and discuss suggestions for revisions to correct errors or to improve clarity. At the discretion of the Research Advisory Committee, the Defense and Final Examination may include general questions in pharmacology.

After the student has answered questions about the Dissertation, the Committee will discuss the Dissertation and revisions that may be necessary and vote whether the student has passed the Final Examination. Voting to accept the dissertation (with all recommended revisions) will be by ballot with no more than one negative vote permitted. If the dissertation is not acceptable and/or the student is judged to have failed the examination, the Examining Committee will inform the student in writing of the reasons for the failure, with a copy of this letter provided to the Department Head and the Dean of Graduate Studies. The Advisory Committee may vote to schedule a second Final Examination if major revisions and/or additional experimentation are required. In this case, the student is to be informed in writing of the deficiencies and of the work that must be accomplished before a second Defense and Final Examination may be scheduled. This information must be included in the letter given to the Head of the Department and the Dean of Graduate Studies.

When the student has passed his Defense and Final Examination, he/she will be certified to the Graduate Faculty, the Graduate School Dean and the Chancellor as having met all requirements for the degree of Doctor of Philosophy in Pharmacology, Toxicology and Neuroscience. Students are responsible for other incidental fees such as the costs of their dissertation binding, diploma costs, and other expenditures that are not covered by tuition unless payment is otherwise arranged by their advisors.

X. TEACHING

Teaching is an important aspect of the doctoral training program, and all students are required to participate in the teaching responsibilities of the Department. This may take the form of assisting in the teaching of medical and graduate student courses including small sessions, such as the Patient-Oriented Problem-Solving (POPS), in teaching the Allied Health students, participating in the training of new students in the laboratory, presenting quality topical seminars, and other such activities.

XI. OTHER SCHOLARLY ACTIVITIES

In addition to requirements concerning research, course work, and seminar, every graduate student is expected to participate in other scholarly activities. These activities will vary, but students are expected to participate in journal clubs, to keep abreast of major developments in their field and in related biomedical sciences, to present their research findings at meetings of professional societies in their field, to assist other students and staff in research techniques and in the use and maintenance of instrumentation, to help in the recruitment of graduate students into the program, to assist in teaching when asked, and to take an active role in maintaining the research environment of the Department and the University. It is expected that every doctoral candidate will publish at least one first-author paper on the findings from his/her dissertation research in a national/international journal. All students are expected to attend all guest seminars and guest lectures in graduate courses by faculty visiting the Department.

XII. SERVICE

Students are expected to participate and assist with departmental functions during each academic year. In addition, students are expected to serve on departmental, graduate/medical school or scientific society committees at some point in their graduate careers. At LSUHSC-S, we are in a unique position to provide the larger community with information and resources about health-related issues. We are the only medical school in an approximately 250- mile radius, and our location in the Arkansas-Louisiana-Texas (Ark-La-Tex) tri-state region means that we can provide educational opportunities and serve as a resource for a largely rural area. Students are encouraged to participate in community outreach activities as appropriate and in consultation with their advisor.

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Before entering the Ph.D. portion of the program, M.D./Ph.D. students must pass both the Years 1 - 3 Medical School curricula with a cumulative GPA of 3.0, and also must pass Steps 1 and 2 of the United Stated Medical Licensing Exam (USMLE). The Department of Pharmacology, Toxicology and Neuroscience will waive the standard Ph.D. requirements for Biochemistry and Molecular Biology (IDSP 110), Cell Biology and Signaling (IDSP 118) and the Foundations of Biomedical Sciences (IDSP 212-218) because of the overlap in content with the Medical School curriculum. All other requirements of the Ph.D. program apply.

M.D./Ph.D. students may opt to do research in a departmental laboratory during the summer breaks from medical school classes at the end of Year 1 and 2, or the summer before entering medical school. For each summer research experience in the department, one semester (3 credits) of a required PHARM 203 (Methods in Pharmacology) rotation will be waived.

The core curriculum for M.D./Ph.D. students will be:

	Course Name	Listing		Credits
1)	Methods in Pharmacology (Research Rotations)	PHARM 203	letter grade (3 each semester)	6-9
2)	Introduction to Research in Pharmacology	PHARM 209	S/U	1
3)	Basic Statistics	IDSP 226	letter grade	1
4)	Advanced Statistics	IDSP 227	letter grade	1
5)	Pharmacokinetics and Pharmacodynamics	PHARM 258	letter grade	1
6)	Molecular Pharmacology	PHARM 260	letter grade	1.5
7)	Neuropharmacology OR	PHARM 233	letter grade	2
	Toxicology	PHARM 245	letter grade	2
8)	Journal Club (1 each semester in first and second years)	PHARM 270, 271 or 272	S/U	4
9)	Pharmacology Seminar	PHARM 298	S/U	4+
10)	Grant Writing	IDSP 235A	S/U	1
11)	Ethics and Professionalism	IDSP 240A/B	S/U	2
12)	Dissertation Research	PHARM 400	letter grade	1-9
13)	Two advanced electives			

Note that to satisfy Graduate School requirements, each M.D./Ph.D. student must complete, with a passing grade, a minimum of 32 total credit hours, and that 20 hours of these credits must be letter-graded. Thus, the students will need to work together with the Graduate Program Director and their Research Advisory Committees to make sure that these requirements are met.

MASTER'S PROGRAM IN BIOMEDICAL SCIENCE

PROGRAM OF STUDY:

The School of Graduate Studies at the Louisiana State University Health Sciences Center in Shreveport administers a graduate program leading to the M.S. Degree in Biomedical Sciences. A minimum of 24 hours of letter grade credit is required with the coursework tailored to the student's individual needs, determined by his/her Advisory Committee. At least six credit hours must be Thesis Research performed in the Department of Pharmacology, Toxicology and Neuroscience at LSUHSC-S. A minimum total of 30 credit hours are required for the Master's Degree. Please note LSUHSC-S Graduate School and Department of Pharmacology, Toxicology, and Neuroscience policy states that a student must complete his/her Master's Degree within four years or one-year after a switch is made from the Ph.D. program, whichever is longer.

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FINANCIAL SUPPPORT:

Master's Degree students do not receive financial support for their Thesis Research from the LSU Health Sciences Center-Shreveport Department of Pharmacology, Toxicology & Neuroscience. During the time that the student is enrolled in Thesis Research, he/she must be enrolled as a full-time student and is therefore not eligible for full-time employment in the LSU system. The student may be employed either part-time within the LSU system or full- or part-time elsewhere. If employed within the LSU system, work performed under employment may not be part of the research work for the Master's Degree. For international students, VISA regulations will limit your employment to 20 hours per week, and your employment must be conducted within the LSU system.

TUITION:

Tuition and non-resident fees *will* be waived for M.S. students, depending on availability of funds.

HEALTH INSURANCE AND ACTIVITY FEE:

The School of Graduate Studies requires all students to be responsible for the payment of the University Activity Fee and to purchase Health Insurance or provide evidence of other health care coverage. Students are also responsible for other incidental fees such as the costs of their thesis binding, diploma costs, and other expenditures that are not covered by tuition.

EXIT PROCEDURES:

Graduate Students must follow the same exit procedures as any other employee. Human Resources Management requires a resignation letter, Employee Clearance Form, and Separation Summary. Turning in keys and ID Badge are part of the exit procedures. The student's advisor will be responsible for ensuring that exit procedures are completed appropriately. Please consult the Business Manager for more details on the Exit Procedure.

REQUIREMENTS FOR THE MASTERS DEGREE:

I. COURSE WORK

A minimum of 24 class hours is required, plus at least 6 research hours.
Courses to be taken are those required plus those determined by the student's Advisory Committee. Course descriptions can be found in the Ph.D. section of the handbook.

Required Courses:

IDSP 240 A/B	Ethics and Professionalism (1 credit)
IDSP 118	Cell Biology and Signaling (3 credits)
PHARM 209	Introduction to Research in Pharmacology (1 credit)
PHARM 258	Pharmacokinetics & Pharmacodynamics (1 credit)
PHARM 260	Molecular Pharmacology (1.5 credits)
PHARM 300	Thesis Research (6 credits)

Plus at least 5 credit hours from the following:

IDSP 212 Foundations of Biomedical Sciences - Cardiovascular System (1.5 credits)

IDSP 213 Foundations of Biomedical Sciences - The Renal System (1 credit)

IDSP 214 Foundations of Biomedical Sciences - Respiratory System (1 credit)

IDSP 216 Foundations of Biomedical Sciences - Gastrointestinal System (1 credit)

IDSP 217 Foundations of Biomedical Sciences - Endocrine System (1 credit)

IDSP 218 Foundations of Biomedical Sciences - Nervous System (1.5 credits)

Highly Recommended Courses:

Biochemistry and Molecular Biology. Students who wish to enter the Ph.D. program after completion of the M.S. will need to take IDSP 110

Neuropharmacology or Toxicology. It is recommended that students consult with the Graduate Program Director and/or their Research Advisory Committee and take one of the following:

PHARM 233 Neuropharmacology (2 credits)
PHARM 245 Toxicology (2 credits)

Optional Courses:

IDSP 235A Grant Writing (1 credit)
PHARM 220 Clinical Toxicology
PHARM 225 Advanced Topics in Pharmacology
PHARM 240 Behavioral Pharmacology I (1 credit)
PHARM 242 Pharmacology of Drugs of Abuse (1 credits)
PHARM 243 Environmental Toxicology (2 credits)
IDSP 226 Introductory Biostatistics (1 credit)
IDSP 250 Current Trends in Toxicology
PHARM 204 Brain Research through Advanced and Innovative Neurotechnologies

Journal Club:

Students must attend journal club and prepare at least one presentation per semester. Students need not register for the journal club course, but must participate appropriately.

PHARM 270 Discussions in Neurochemistry and Neuropharmacology (1 credit)
PHARM 271 Discussions in Toxicology (1 credit)
PHARM 272 Discussions in Pharmacology (1 credit)

Seminar:

Seminar is the one occasion on which all faculty, postdoctoral researchers, and graduate students meet regularly to discuss research findings and new developments in pharmacology. M.S. students will not be required to register for the seminar course, but must participate in seminar just as Ph.D. students.

PHARM 298 Seminar in Pharmacology (1 credit)
Oral presentations of research data
Faculty member in charge: Yunfeng Zhao Ph.D.

In the spring semester of the first year, students will present a brief (15 minute) seminar based on the poster the student will present at Graduate Research Day. It should be delivered in a

critical and informative manner such that the audience can appreciate the state of the art of the research. The student is expected to read a considerable body of literature so that he/she has a good understanding of the field and the techniques and experimental approaches being used to address the key questions. In the fall semester of the second year, students will present a 25 minute seminar based on the research being conducted in their resident laboratory. The talk is expected to cover research related to the student's anticipated project. In the spring semester of the second year, the student will present a full seminar (45-50 minutes) that will consist of background, methodological information and data collected thus far. This type of seminar will be repeated in the third year as needed. The Defense of the Master's Thesis will substitute for the yearly seminar as appropriate.

Students are encouraged to use computer-based presentations using such software applications as Microsoft PowerPoint. Slides should be prepared carefully, as for a professional presentation. The student is encouraged to practice the seminar with a senior student and/or his/her advisor. One week prior to the seminar, the student must provide the Departmental staff with an approved abstract that will then be distributed to all faculty, postdoctoral trainees, and graduate students in the Department. The abstract should give the date, time and place of the seminar and present a summary of the seminar topic.

Attendance at Departmental seminars and at seminars given by visitors to the Department is mandatory. Every student is expected to attend every seminar, and students are expected to participate actively in seminar by contributing to the discussion Students who are registered for the course are required to participate actively in seminar by contributing to the discussion or by writing a short seminar summary for speakers that are from outside of LSU Health Sciences Center-Shreveport. Summaries must be turned into the Seminar Coordinator within 7 days of the seminar or a grade of "U" will be given for the course.

II. THESIS RESEARCH

1. Selection of research project and research advisor.

The Research component of the Master's Degree program will consist of laboratory research performed by the student. The student may elect to perform the research in the laboratory of any particular faculty member in the Department provided that the faculty member is prepared to accommodate the student. The research advisor must be a member of the Graduate Faculty at LSUHSC-S and have a full-time or joint faculty appointment in the Department of Pharmacology, Toxicology & Neuroscience. Selection of the research project and research advisor may be made in one of two ways:

a. If a student has previous experience in the laboratory of a faculty member he/she may elect to complete the Master's Degree research in this laboratory. In this case, this faculty member would become the student's research advisor.

b. The student may elect to complete short (8 week) rotations in the laboratories of up to three different faculty members in order to gain experience in various research projects. The student will then choose one faculty member as the research advisor and complete the Master's Degree research in his/her laboratory. The research advisor should be selected by the end of the first semester or the middle of the second semester of studies at the latest.

2. The Advisory Committee

The Advisory Committee will consist of at least three members of the LSU Health Sciences Center-

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Shreveport Graduate Faculty: the research advisor, one faculty member from the Department of Pharmacology, Toxicology & Neuroscience and one graduate faculty member from another department at LSU Health Sciences Center-Shreveport. The student in consultation with the research advisor will select the other two committee members. The Committee must be approved by the Head of the Department of Pharmacology and the Dean of the School of Graduate Studies. The Committee should be selected within the first year of study. At least one meeting of the student with the Advisory Committee should be held during the time that Thesis Research is being performed.

III. THE M.S. PROGRAM AT A GLANCE

A typical schedule of courses for a Masters degree in Biomedical Sciences from the Department of Pharmacology, Toxicology & Neuroscience is presented below. We have provided the information in checklist form, so that the student can better prepare for registration. Note that this is merely an example of coursework that might be taken in the first 1-2 years of study. The bulk of the coursework that the student will take will likely be completed within the first 1-1.5 years of study. Also note that students must register for 6 h in summer and 9 h in fall and spring to be classified as a full-time student.

M.S. Degree Course Requirements Check List

Summer: Semester 1

PHARM 203	*Methods in Pharmacology*	3 Credits	letter grade	_____
PHARM 209	*Intro to Research in Pharmacology*	1 Credit	S/U	_____
PHARM 251	*Research in Pharmacology*	1-8 Credits	S/U	_____
IDSP 240B	*Ethics and Professionalism*	0.5 Credit	S/U	_____

Fall: Semester 2

IDSP 240A	*Ethics and Professionalism*	0.5 Credit	S/U	_____
IDSP 118	*Cell Biology and Signaling*	3 Credits	letter grade	_____
PHARM 270, 271 or 272	(Journal Club)	1 Credit	S/U	_____
PHARM 203	*Methods in Pharmacology*	3 Credits	letter grade	_____
PHARM 298	*Seminar in Pharmacology*	1 Credit	S/U	_____

Spring: Semester 3

PHARM 270, 271 or 272	(Journal Club)	1 Credit	S/U	_____
PHARM 203	*Methods in Pharmacology*	3 Credits	letter grade	_____
PHARM 298	*Seminar in Pharmacology*	1 Credit	S/U	_____

Choose 5 hours from:

IDSP 212	*Cardiovascular System*	1.5 Credits	letter grade	_____
IDSP 213	*Renal System*	1 Credit	letter grade	_____
IDSP 214	*Respiratory System*	1 Credit	letter grade	_____
IDSP 216	*Gastrointestinal System*	1 Credit	letter grade	_____
IDSP 217	*Endocrine System*	1 Credit	letter grade	_____
IDSP 218	*Nervous System*	1.5 Credits	letter grade	_____

Summer: Semester 4

PHARM 258	*Pharmacokinetics & Pharmacodynamics*	1 Credit	letter grade	_____
PHARM 260	*Molecular Pharmacology*	1.5 Credits	letter grade	_____

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PHARM 251 *Research in Pharmacology*	1-8 Credits	S/U	_____

Any subsequent Semesters

PHARM 270, 271 or 272 (Journal Club)	1 Credit	S/U	_____
PHARM 298 *Seminar in Pharmacology*	1 Credit	S/U	_____
PHARM 300 *Thesis Research*	1-9 Credits	S/U	_____
Choose from:			
PHARM 233 or 245 *Neuropharmacology or Toxicology*	2 Credits	letter grade	_____
Various electives	2 or more credits		

IV. THESIS DEFENSE

Based on his/her laboratory research, the student will write a thesis and present a public oral defense of the thesis to members of the Department of Pharmacology of LSU Health Sciences Center-Shreveport.

Preparation and Defense of the Master's Thesis

The Master's Thesis research must be an original scholarly contribution to the field and is expected to contain original findings that address a fundamental question or questions. The thesis is to be prepared by the student with the guidance and advice of his/her major professor and Research Advisory Committee. Before starting to write the thesis, candidates should call a meeting of their Research Advisory Committee to review all the experimental results they plan to include in the thesis to ensure that they are of adequate quality and quantity. Upon completion of the thesis, the student should provide copies of the thesis to all members of his/her Advisory Committee and the Department Head. After a minimum period of two weeks, the student should schedule a meeting of the Research Advisory Committee to determine whether the thesis is adequate and sufficiently complete to allow scheduling of the Defense. If one or more members of the Research Advisory Committee feel that the thesis is incomplete or inadequate to schedule the Defense, the Committee will make specific recommendations necessary to improve the thesis.

The *Request for Dissertation/Thesis Defense and Final Examination* form, which nominates the Examining Committee, should be completed by the student and submitted to the Department Head. Because this request must be submitted to the Graduate School at least two weeks prior to the Defense date, the request must be submitted to the Department Head at least twenty-one days before the date of the proposed defense. Graduate School procedures require that notice of the Final Defense Seminar be distributed by the Major Professor to the Graduate Faculty of LSU Health Sciences Center-Shreveport announcing the seminar title, and the time, date, and location, at least one week before the presentation.

Prior to the Final Examination the student will be required to present a research seminar open to all faculty, students, and staff. The purpose of this seminar is to allow the student to present an overview of the completed research and to demonstrate that the research is of high enough quality to merit a Master's degree. An announcement of the seminar must be sent to all Department Faculty, postdoctoral fellows, and students at least one week before the seminar.

Timetable for the submission of a Master's Thesis

1. Four to six weeks before the proposed date of the defense and final examination, the student should provide copies of a detailed thesis outline or a draft of the completed thesis to each member of his/her Research Advisory Committee and to the Department Head.

2. A meeting of the Research Advisory Committee must be scheduled to review the thesis and to determine whether it is of sufficient quality to be submitted to the School of Graduate Studies.

3. The *Request for Dissertation/Thesis Defense and Final Examination* form must be completed and submitted along with a copy of the full and completed thesis to the Department Head, at least 21 days before the proposed date of the Defense. This request includes the date, time and place for the presentation. The time must be scheduled early enough during the day to allow enough time for a full examination.
4. If approved, the Department Head will submit the Examination Request form to the School of Graduate Studies not less than 14 days before the proposed Defense.
5. Once approved by the School of Graduate Studies, the student must ensure that a notice of the seminar, which includes a 250 word abstract about the thesis research that will be presented, is distributed to all faculty, students and postdocs in the Department of Pharmacology, Toxicology & Neuroscience and other interested faculty, students and postdocs.

The Thesis Defense and Final Examination will focus on the thesis research and the thesis itself. The student will be expected to answer questions about the work, defend the validity of the conclusions, and discuss suggestions for revisions to correct errors or to improve clarity. At the discretion of the Research Advisory Committee, the Defense and Final Examination may include general questions in pharmacology.

After the student has answered questions about the thesis, the Committee will discuss the thesis and revisions that may be necessary and vote whether or not the student has passed the Final Examination. Voting to accept the thesis (with all recommended revisions) will be by ballot with no more than one negative vote permitted. If the thesis is not acceptable and/or the student is judged to have failed the examination, the Examining Committee will inform the student in writing of the reasons for the failure, with a copy of this letter provided to the Department Head and the Dean of Graduate Studies. The Advisory Committee may vote to schedule a second Final Examination if major revisions and/or additional experimentation are required. In this case, the student is to be informed in writing of the deficiencies and of the work that must be accomplished before a second Defense and Final Examination may be scheduled. This information must be included in the letter given to the Head of the Department and the Dean of Graduate Studies.

AWARDING OF THE MASTER'S DEGREE

When the student has passed his Defense and Final Examination he/she will be certified to the Graduate Faculty, the Graduate School Dean and Chancellor as having met all requirements for the degree of Master's Degree in Biomedical Science. The Master of Science Degree will be thus awarded by LSU Health Sciences Center-Shreveport. Students are responsible for other incidental fees such as the costs of their thesis binding, diploma costs, and other expenditures that are not covered by tuition unless payment is otherwise arranged by their advisor.

LSUHSC-S POLICIES

SCHOOL OF GRADUATE STUDIES POLICIES

GRADUATE STUDENT ATTITUDE AND RESPONSIBILITY

Graduate students are expected to behave in a mature and responsible manner and to exhibit a spirit of cooperation with the faculty, their fellow students, and all other members of the Departments in the School of Graduate Studies. Each student is ultimately responsible for his/her own career decisions. In addition, students should take an active part in fostering the development of the Graduate School at LSUHSC-Shreveport and in promoting the research environment. This participation should be at all levels – from assisting in the recruitment of new graduate students, to helping fellow students in coursework, to serving in elected positions on the Graduate Student Council or other LSUHSC-S Committees, etc. The student should realize that his/her professionalism as a developing scientist enhances the reputation of the LSU Health Sciences Center in Shreveport and that the proper environment for productive learning and research is attained by collaborative efforts of all members of the School.

Students are required to follow all institutional policies. Violation of institutional policies that would warrant dismissal of an employee would also lead to dismissal of a graduate student from the program. Institutional policies include use of institutional computers, telephones, e-mail system, etc., as outlined in the Chancellor's Memoranda (CMs), as well as the dress code, drug and alcohol policies and other policies described later in this handbook.

STUDENT HONOR CODE

The Honor Code was established by a student Honor Council and approved by the student body and faculty of LSUHSC. It governs all examinations and all aspects of academic life, and is applicable to all students enrolled in the School of Graduate Studies.

LSUHSC-S Student Honor Code

Preamble

We, the student body of the Louisiana State University Health Sciences Center in Shreveport believe that students in medical and graduate school should explicitly uphold basic principles of behavior that constitute acceptable academic, professional and ethical conduct, and hereby set forth this Honor Code. Agreement to the Honor Code by signature is required of each student before completing registration to enter the Medical and Graduate Schools. The Honor Code is not intended to be a mere listing of matters that constitute infractions but is intended to be a general statement by each student to uphold the high standards of integrity and honesty of the medical science professions.

I. Violations

To act in any way contrary to academic honesty or professional and ethical conduct is considered a violation of the Honor Code. Specific examples of violations include, but are not limited to the following:

A. To obtain an unfair advantage by (a) stealing, reproducing, circulating or otherwise gaining access to examination materials prior to the time authorized by the instructor; (b) stealing, destroying, defacing, or concealing library materials; (c) unauthorized collaboration on an academic assignment; (d) retaining, possessing, memorizing, using, or circulating previously given examination materials, where those materials clearly indicate that they are to be returned; (e) intentionally obstructing or interfering with another student's academic work, or (f) otherwise

undertaking activity with the purpose of creating or obtaining an unfair academic advantage over another student's academic work.

B. To cheat or attempt to cheat; to gaze at or look upon the work, exam or answer sheet of a classmate during an examination.
C. To communicate, in any manner with any unauthorized person, during an examination.
D. To plagiarize or to misrepresent the work of another person as one's own.
E. To misrepresent or falsify research data.
F. To misrepresent or falsify data or results concerning a patient's clinical status or to break the confidentiality of any person in treatment or rehabilitation.
G. To file a false complaint with malicious intent, or testify falsely under this Honor Code.
H. To treat patients or fellow colleagues in a manner contrary to those standards of integrity deemed necessary of the medical science professions.
I. To misrepresent oneself as a physician or degreed professional prior to completion of education.
J. To fail to report an observed violation of this Honor Code.
K. To falsify any document or form.
L. To misappropriate or steal the property of another.

II. Procedures and Policies for Alleged Honor Code Violations

A. General Policies

1. It remains the sole responsibility of the student to conduct him/herself in a manner which supports and promotes the high standards of integrity and honesty required in the medical science professions. Ignorance of a violation cannot be a defense for the accused.
2. Faculty members are responsible for specifying at the beginning of each course the basic rules and procedures for course work and examinations. The faculty should make a reasonable effort to deter violations of the Honor Code, using measures deemed appropriate. This could include, but is not limited to, the use of controlled seating arrangements and active proctoring during exams. It is the faculty's responsibility to provide adequate testing conditions including sufficiently large testing rooms and stated rules concerning restroom privileges and leaving the testing center. Students may issue a written complaint to the Assistant Dean for Student Affairs in the case of Medical Students or the Associate Dean, School of Graduate Studies in the case of Graduate Students if these measures are felt to be unsatisfactory or excessive. (Hereafter in this document the appropriate Assistant Dean or Dean for each student population will simply be referred to as the Assistant Dean/Associate Dean.) If an alleged Honor Code Violation occurs outside of the purview of an academic department, the Assistant Dean, with the approval of the Dean, will appoint a faculty member to act in lieu of a department head in reviewing the alleged Honor Code violation.
3. All faculty members are responsible for taking appropriate action in accordance with this Honor Code in ALL cases of suspected violations. The handling of suspected violations outside the provisions made in this Honor Code is strongly discouraged.
4. Procedures shall be implemented in writing through the Assistant Dean/Dean.
5. Should a student elect to withdraw from school rather than follow the procedures outlined herein, the circumstances of the withdrawal shall be noted in the student's academic transcript and in any subsequent letters of recommendation. The investigation, however, may proceed in the student's absence. Should any subsequent proceedings be deemed necessary, the involved party shall be notified and shall maintain all the rights guaranteed herein.
6. The investigative process (Section D) shall begin within two weeks of the written accusation being filed with the Assistant Dean/Associate Dean.

B. Report of Violations

1. If a faculty member observes a possible violation of the Honor Code, (s)he shall notify the Course Director who will review the evidence and the facts of the case promptly with the Head of the Department and then with the student suspect. The Course Director will then proceed, with the approval of the Head of the Department. If after speaking with the student, the Course Director believes that a violation has occurred, (s)he may (a) settle the case directly with the student as outlined below or (b) promptly report allegations of violations to the Assistant Dean/Dean in the form of a written statement including the description of the circumstances that gave rise to the charges. The Assistant Dean/Dean shall advise any person submitting a statement of their obligations in any investigation and hearing.
2. If a student observes a potential Honor Code violation, (s)he shall promptly report it the Course Director involved. Every reasonable effort shall be made to maintain in confidence the identity of persons who submit statements of violations during the preliminary stages of the investigation, although their confidentiality cannot be preserved during the hearing.

C. Settlement with the Course Director: A Course Director, with the concurrence of the Department Head, has the authority to settle a case where the alleged student misconduct has occurred within the departmental purview. Penalties imposed in this matter may only be selected from the following four items:

1) Retaking of the examination or exercise involved.
2) Scoring of zero on the examination or exercise involved.
3) Lowering of course grade.
4) Failure in the course.

The Course Director, after a thorough discussion of the matter with the accused student and the Department Chair, must submit to the Assistant Dean/ Associate Dean a document describing the nature of the violation and the penalty assigned. This document shall bear the signatures of the Course Director and the Head of the Department, with a copy to the student. This document shall be maintained in confidence by the student, Course Director, Department Head, and Assistant Dean/Associate Dean. If the penalty imposed is failure in the course, that grade may appear on the transcript as it would in the case of academic failure. However, in this settlement with the Course Director, no statement which connects the penalty imposed with an alleged honor code violation shall appear on the academic transcript of the accused. If the student concurs with the assigned penalty, (s)he shall sign the above described document with the Course Director and Department Head, indicating agreement with the penalty. In the event that a student feels that (s)he has not been treated appropriately or has not been allowed due process, (s)he may write an appeal letter to the Dean. After reviewing the student's appeal, the Assistant Dean/Dean shall either concur with the penalty imposed by the department, or shall return the matter to the Course Director and Chairman, who will have ten working days in which to file a written report of alleged Honor Code violations with the Assistant Dean/Dean for further resolution as outlined in this Honor Code.

D. Allegations Investigated by the Assistant Dean/Associate Dean: Upon receipt of the written report of alleged Honor Code violations, the Assistant Dean/Associate Dean shall give the accused immediate written notification of the nature of the charges that have been filed. The accused shall be provided with a written outline of all procedures and informed of his/her rights with respect to the same.

Investigation of alleged violations shall be conducted by the Assistant Dean/Associate Dean, who may select and convene an investigating committee composed of faculty and students. Students shall be selected from the membership of the Student Council when appropriate. Faculty shall be selected from the General Faculty. At such time that the Assistant Dean/ Associate Dean concludes that sufficient evidence exists, with the concurrence of the Dean of the School, (s)he shall formulate the charges against the accused in writing.

E. Hearing of Charges: The accused, the Department Head, the Elected Faculty Council Chair, and the Student Honor Council Chair shall be notified in writing that a hearing is to be conducted and a Hearing Panel chosen. At the time of written notification, the accused may choose a faculty advocate

to review the evidence, assist in preparing for the hearing, and assist at the hearing. A Student Honor Council member shall be available to meet with the accused to explain policies and procedures.

The assignment of a date for the hearing will be made by the Assistant Dean/Dean within four school weeks following written notification of the accused concerning the charges. The date of the hearing may not necessarily fall within the four-week period, but shall be as soon as is feasible, commensurate with other academic matters. The accused shall be informed of his/her rights with regard to the hearing. The Assistant Dean/Dean shall be responsible for notifying all witnesses, including those for the accused.

The Hearing Panel shall consist of the Chair of the Elected Faculty Council (or his/her designee from the Faculty Senate), four members from the Faculty Elected Faculty Council plus the Graduate School Representative to the Senate selected by lot (two selected from the Basic Science Departments and two from the Clinical Departments), the Chair of the Student Honor Council or his/her designee, and three members of the Student Honor Council selected by the Student Honor Council Chair. Should three members of the Student Honor Council not be available, student representatives shall be selected from among the class officers. No member of the Administrative Staff, the Assistant Dean of the Medical School or the Dean of the Graduate School, or anyone who is judged to have a conflict of interest shall serve on the Hearing Panel. Members of the investigating committee shall not serve on the Hearing Panel. Each of the nine Hearing Panel members shall have one vote. In the event of emergency absences, at least seven (7) of the members of the Hearing Panel must be present to constitute a quorum for vote, and a majority of the members present shall rule. The Chair of the Hearing Panel shall be the Faculty Senate Chair or his/her designee.

Persons to be present for the formal hearing include the members of the Hearing Panel, the designated witnesses, the Department Head or his/her designee who will present the case, and the accused; if the Department Head is a witness to the violation, (s)he shall function only as a witness, and shall designate a faculty member to present the case. The accused may be accompanied during the hearing by any one faculty member of his/her choice from LSU Health Sciences Center-Shreveport. The accused may not have any other advocates or observers in the hearing, except for witnesses. Witnesses shall be present one at a time during the time of witness testimony. Legal representation for either the accused or accuser(s) shall be prohibited in the hearing.

Evidence and personal testimony supporting the allegations shall be presented to the Hearing Panel by the Department Head involved or his/her designee. Thereafter, the accused may present a defense and offer evidence or testimony of witnesses that support the defense. The accused and accuser(s) are limited to three character witnesses each.

At any time during the presentation of evidence and personal testimony, any member of the Hearing Panel, the person presenting the case, or the accused may ask questions. Following the presentation of evidence and personal testimony, the accused and the person presenting the case shall orally summarize their positions. These final presentations shall not be interrupted by questioning.

The Chair of the Hearing Panel shall control the proceedings and shall conduct a hearing that is both thorough and fair. The hearing is intended to allow informal but complete presentation of all relevant information. The proceedings of the Hearing Panel shall be confidential. A professional stenographer shall take and transcribe written notes of the proceedings, which shall be maintained in confidence by the Chair. No tape recorders, other than the stenographer's, shall be permitted at these proceedings.

Following the presentation of the evidence and testimony, the Hearing Panel shall deliberate privately and determine the recommendation to be submitted to the Dean. The stenographer is not required for these deliberations. The Chair of the Hearing Panel shall submit to the appropriate Dean the written recommendation, its basis, and a transcript of the proceedings within five working days of the Hearing Panel's decision. A copy of the recommendation and its basis shall be submitted simultaneously to the

accused and to the Department Head involved. These persons may, at their request, receive a transcript of the entire proceedings.

Any member of the panel who dissents from the recommendation may submit his/her reasons in writing when the recommendation is submitted to the appropriate Dean.

F. Recommendations of the Hearing Panel: Should the Hearing Panel find that evidence does not support the charges, no mention of the accusations or proceedings shall be made on the student's permanent record. Should a student be found guilty, the Hearing Panel shall submit a recommendation of penalty to the appropriate Dean. The Dean of the School of Medicine or the Dean of the School of Graduate Studies may accept or reject the recommendation, in whole or in part, or may remand the matter to the Hearing Panel for further investigation, if appropriate.

One of the following penalties shall be imposed upon students found guilty of violations by the Hearing Panel:

1) Failure in the course
2) Failure in the course with suspension from school for one year.
3) Expulsion from school at LSUHSC-Shreveport.

Upon the Dean's concurrence with the recommendation of the Hearing Panel, the Registrar will place a notation of the designated penalty on the student's academic transcript. The notation will consist of the statement of penalty assigned (from the above list), naming the course involved, if any, followed by: Result of an Honor code Hearing,

III. Appeals: A student may appeal the decision of the appropriate Dean to the Chancellor of the Health Sciences Center. If there is an appeal, the transcript of the hearing, the recommendations of the Hearing Panel, and the decision of the Dean shall be transmitted to the Chancellor for review. The disposition of the case by the Chancellor of the Health Sciences Center shall be final.

IV. Amendments: Any member of the student body or faculty may propose amendments to the Honor Code described herein. Ratification of the proposed amendments shall require approval by two-thirds of the Student Honor Council, a simple majority of those voting from the student body, and a simple majority of a quorum of the General Faculty.

This revision was ratified as specified above: Approved by Student Honor Council, Student Body, and finally by the General Faculty at the May 20, 1997 meeting. In addition, the Elected Faculty Council and the Administrative Council have approved the amendments.

RESEARCH MISCONDUCT

Individuals involved in research projects must be aware of the institutional policies regarding reporting allegations of research misconduct. According to the Office of Research Integrity of the Federal Health and Human Services Division, research misconduct is defined as fabrication, falsification or plagiarism in proposing, performing or reviewing research, or in reporting research results.

- Fabrication is making up data or results and recording or reporting them.
- Falsification is manipulating research materials, equipment or processes or changing or omitting data or results such that the research is not accurately represented in the research record.
- Plagiarism is the appropriation of another person's ideas, processes, results or words without giving appropriate credit.
- Research misconduct does not include honest error or honest differences of opinion

Individuals who observe or learn of research misconduct by another individual, and have substantial evidence to support these observations, are required to immediately report an allegation of research misconduct to the Research Integrity Officer (RIO), John Maloy, J.D. Any allegation made in good faith will immediately be investigated by the RIO.

RIO at LSUHSC-S: Maloy, JD, Assistant Vice Chancellor jmalo1@lsuhsc.edu 318) 675-3464
The RIO and the institution will treat both the whistleblower (individual making the allegation) and the respondent (individual against whom an allegation of research misconduct is directed) with fairness and respect. During all proceedings, confidentiality will be maintained to the maximum extent possible.

INTELLECTUAL PROPERTY AND CONFIDENTIALITY

Many faculty members at LSUHSC-S are engaged in research that may lead to novel therapies or new medical devices. For these discoveries to be fully realized, it is important that patent applications be filed on the invention. For something to be patentable, it must be a new discovery, must have a use, and must not be obvious to someone skilled in the art. The first criterion, that it is a new discovery, is very important. For something to be new, it must not have been disclosed to anyone before the patent is filed. This means that the idea can only be discussed with LSUHSC-S faculty, students and other employees; it cannot be discussed outside of LSUHSC-S with friends, colleagues or even family members, without a confidentiality agreement in place. Otherwise, the discovery will be deemed to be in the public domain and no patent will be granted, potentially costing the university and the inventors revenue from the invention and also preventing it from reaching the marketplace. To protect everyone, it is important that no discussion of novel discoveries take place without permission of the mentor.

Another important outcome of protecting LSUHSC-S's intellectual property position is the formation of new start-up companies based on the new discoveries. The faculty member who made the discovery is often part of the founding team and may continue to play a role with the company. While faculty members do their best to separate their activities at the university from that of the company, you may notice their excitement about what is happening with their invention at the company. It is important that you not discuss this information outside of LSUHSC-S as well. Companies are always dealing with raising capital, whether they are a small company looking for initial funding or a large company hoping to boost their stock price, and the release of confidential information could result in a major investigation by the Security and Exchange Commission leading to lawsuits and potentially even prison.

While intellectual property and commercialization opportunities represent an important source of potential revenue and new therapies to better healthcare, care must be taken to protect everyone's interest involved. The best advice: don't assume that it is okay to talk about what discoveries you and your co-workers have made, **always check with your mentor before discussing or presenting any information to others outside of LSUHSC-S.**

Class Attendance Policy

Attendance at all classes in which the student is enrolled is mandatory. If the student is ill, has a physician note indicating such, or has another valid reason (as determined by the course director) for not attending a class, the student must contact the course director about the class absence. The course director may require a remedial activity such as a written report on the topic(s) covered in the lecture(s) that the student missed.

IDSP 240A and 240B, Philosophical and Ethical Issues in Science, are required for all trainees by the National Institutes of Health. If a student is absent from any of the lectures in this course, he/she will receive an Incomplete (I) grade for the course. As a remediation, the student must attend the equivalent topic lecture in the Postdoc Ethics course that is offered in the fall semester. The student is responsible for signing the attendance sheet in the Postdoc Ethics course lecture and notifying the IDSP 240 course

director that he/she has attended that lecture. If there is no equivalent lecture in the PostDoc Ethics course, the student must submit a 5 page paper on the topic covered in the lecture that was missed, to the class instructor, who will assign a Satisfactory (S) or Unsatisfactory (U) grade. The "I" grade will be converted to a "U" grade if the remediation is not completed in the fall semester. If the student's circumstances preclude removal of the "I" in the fall semester, the student or instructor may, before the end of the fall semester, petition the Dean for an extension.
(approved by the Graduate Advisory Council, July 1027)

Graduate School Policy for Grade Appeal

Faculty who are members of the Graduate Faculty are qualified to provide instruction to students and to evaluate the performance of students in coursework and in research. A student who questions a grade in a Graduate School course exam or a final course grade may follow the course of action described below.

This policy applies to all courses offered in the School of Graduate Studies, including departmental courses and IDSP (interdisciplinary) courses

1. The student will first meet with the course director to resolve the issue within 10 working days of receiving the grade.

2. If the issue is not resolved to the satisfaction of the student, the student may appeal to the Graduate Advisory Council in writing, within 5 days of meeting with the course director. The appeal must clearly state the specific basis for the student's dissatisfaction and the specific reparation sought. The Council will take into consideration 1) whether the method used to assign grades is the same for all students in the class, and 2) whether or not there is evidence of unjust or erroneous evaluation. The decision of the Council is final. If the decision reached requires changes in an official university record, all university regulations and procedures necessary to accomplish the change will be followed.

Approved by the Graduate Advisory Council, April 28, 2014

Students Complaints & Grievance Policy

All students in the School of Graduate Studies (Graduate School) at LSU Health Shreveport have the right to express a complaint / grievance on academic or non-academic issues. Students must provide evidence of error, miscalculation, omission, or other action negatively impacting the student. The purpose of the complaint / grievance process is to provide students with an opportunity for fair and objective consideration and review of their issue. Students are expected to follow established procedural guidelines for academic and/or non-academic complaints or issues.

Individuals wishing to remain anonymous can file a complaint in any manner, including online, by telephone, or by written communication. However, electing to remain anonymous may limit the Institutions ability to correct the issue. Faculty / staff have mandatory reporting and response obligations for **Title IX** offenses and may not be able to honor a complainant's request for confidentiality.

Grievance/Complaint Procedure

Please click the tab for appropriate protocol for filing a complaint or grievance. If a basis exists for an academic or non-academic complaint beyond the Department Chair, it is recommended that a student submit a complaint to the Associate Dean's Office by phone, email or in person, or via the

online **Graduate School Complaint form**. This policy applies to complaints by students in the School of Graduate Studies relative to:

- **ACADEMIC GRIEVANCES**
- **NON-ACADEMIC GRIEVANCES**
- **TITLE IX OFFENSES**

Academic Grievances

An academic grievance is defined as any situation affecting the status of a student in which the student believes his/her rights have been compromised or denied because of one of the following: a) an arbitrary and/or capricious action on the part of a faculty member/ program director or other administrator, b) application of standards different from those that were applied to other students in the same course or program, c) other issues that do not concern a grade.

Final resolution of academic and non-academic complaints

If a resolution cannot be reached by the faculty, Department Chair, or Associate Dean, the Dean will review the appeal from all levels, and take one of the following actions:

1. Render a decision based on the written appeal and review of all documentation and investigation.
2. Meet with all parties concerned, who may be accompanied by advisors if desired, and then reach a decision.
3. Refer the appeal to an ad hoc grievance committee for its recommendation.
   a. If the Dean chooses to convene an ad hoc grievance committee, the Dean will appoint a faculty chairperson and 5 members (3 faculty / 2 students).
   b. The panel will conduct a hearing to review facts from the concerned parties. After deliberation, the committee will make its recommendation in writing to the Dean within 5 working days of the hearing.
   c. The Dean's decision, which will be final , will be in writing. It will list the reasons supporting the decision.

Individual Development Plan (IDP) Policy for Graduate Students and Postdoctoral Fellows at LSUHSC-S

A mission of LSUHSC-S is to adequately prepare graduate students and postdoctoral fellows to compete and participate successfully in a broad-based and evolving research and research-related economy. The Individual Development Plan (IDP) provides a planning process that documents annual academic and scientific progress, and identifies professional development needs and career objectives for all trainees.

NIH annual progress reports received on/after October 1, 2014 must include a section to describe how individual development plans (IDPs) are used to identify and promote the career goals of graduate students and postdoctoral researchers associated with the award. Reporting on the use of IDPs will be in the Research Performance Progress Report (RPPR), Section B, Question B.4. The RPPR will include a brief description of how and whether IDPs are used to help manage the career development of students and postdoctoral fellows associated with that award. A similar response is required for all T, F, K, R25, R13, D43 and other awards designed to provide training and professional development opportunities for graduate students and postdoctoral fellows.

Thus, use of an IDP is one mechanism for the Graduate School at LSUHSC-S to meet its training mission, and can also be reported on NIH grant annual progress reports. Inclusion of the actual IDP is not required in the progress report, simply a report of how it is used.

The purposes of the IDP for trainees are to:

1. Identify long-term career goals
2. Devise a plan for improving skills in order to achieve these goals
3. Set short-term goals to improve efficiency and productivity for the upcoming year, and repeat the process on an annual basis
4. Assure that the trainee and the mentor communicate on a regular basis about the trainee's career goals and plans for achieving them.

The IDP benefits the trainee by helping to identify short-term goals, to provide a clearer sense of expectations, and to help identify milestones along the way to achieving specific objectives. Both mentors and trainees are actively involved in developing and implementing the IDP. The IDP also provides a tool for regular communication between the trainee and the mentor (PI).

The IDP process allows trainees to conduct a self-assessment of the past year, to set training and career goals for the upcoming year, to set longer-term career goals, and to discuss these steps with their mentor. Standardized forms have been developed for use by graduate students and postdoctoral fellows at LSUHSC-S (see attached documents). As part of the plan, the mentor and the trainee agree to meet on a predetermined basis to review the plan and the goals and to determine whether timelines are being met. If timelines are not being met, modifications in the plan should be discussed and implemented. Additional resources and an in-depth career-planning tool can also be found at http://myidp.sciencecareers.org.

The completed IDP form for graduate students will also serve as the Annual Progress Report required by the School of Graduate Studies.

Developing an IDP

To generate an IDP, the first step is to conduct a self-assessment. The IDP form for LSUHSC-S includes a section in which the trainee summarizes his/her research project and completes an annual progress report by answering several specific questions. The self-assessment tools on the myIDP website are helpful in further evaluating the individual's values, interests and scientific skills. The myIDP website also offers a section on career exploration, in which the trainees learn about career options for PhD-level scientists and then compare those options with their own interests, skills and values.

Setting goals is the next step in the process. The IDP form for LSUHSC-S includes a section for the trainee to set out their plans for the upcoming year. There is also a section devoted to setting short- and long-term career goals. At this stage, all students and postdoctoral fellows should discuss their career options with their mentors and outline strategies for achieving them.

Lastly, the students and postdoctoral fellows implement their plans, with the guidance and assistance of their mentors.

Graduate students are required to complete the IDP every year of enrollment in the program, at the end of each academic year. The completed IDP forms will be retained in the student's department and in the School of Graduate Studies. The trainees and the mentors will also retain copies so that progress can be evaluated throughout the training period.

Approved by the Graduate Advisory Council, April 16, 2015

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INSTITUTIONAL POLICIES

Chancellor's Memoranda (CM)

I. No Smoking Policy (CM-10)

Effective July 1, 2010, LSUHSC-Shreveport properties is a smoke free organization. Smoking will be prohibited on all properties, leased or owned, of the Health Sciences Center. This policy is in effect for all employees, students, patients, and visitors of the Health Sciences Center.

On an ongoing basis, the Health Sciences Center will make resources available to help employees with their personal smoking cessation efforts. Furthermore, it is the responsibility of supervisors to ensure that employees comply with the No Smoking Policy. Employees who violate the No Smoking Policy may be subject to disciplinary action, up to and including termination. Health Sciences Center administrative and supervisory personnel are directed to advise persons of the no smoking policy when they encounter violations and to inform Human Resources and/or the LSUHSCS University Police Department (UPD) as appropriate.

II. CM-14 - Usage of Electronic Mail

The use of electronic mail shall be consistent with the instructional, research, public service, patient care and administrative goals and mission of the Health Sciences Center. Incidental and occasional personal use of electronic mail may occur when such use does not generate a direct cost to the Health Sciences Center.

The following examples are prohibited uses of E-Mail:

- Personal use that creates a direct cost to the Health Sciences Center.
- Personal use for monetary gain or for commercial purposes not directly related to Health Sciences Center business.
- Sending copies of documents or including the work of others in E-Mail communications that are in violation of copyright law.
- Obtaining or attempting to access the files or electronic mail of others. Capturing or attempting to open the electronic mail of others except as required to diagnose and correct delivery problems.
- Harassing, intimidating or threatening others through electronic messages.
- Constructing a false communication that appears to be from someone else. This is called spoofing.
- Sending or forwarding unsolicited E-mail to lists of people you do not know. This is called spamming. Bulk mailing is almost always considered spam. It places considerable strain on the E-mail system. Bulk mailing of information can be selectively used for business related communication but must be approved at a level appropriate to the scope and content of the information. Authorized bulk mailings will be tagged with the statement “This message has been authorized by LSU Health Sciences Center administration for mass distribution as a service to our faculty, staff and students.”
- Sending or forwarding chain letters.
- Violation of the above policy in any part may be sufficient grounds for disciplinary action and/or termination.

Signed: John C. McDonald, MD Chancellor, June 1, 2001

III. CM-18 - Information Technology (IT) Infrastructure

I. Scope

This policy applies to any person or any device that connects to the LSUHSC-S IT infrastructure and is meant to augment, but not replace, any existing policy, laws, or regulations that currently refer to computing and networking services.

Any policy at a division or department level of the organization should build upon the foundation of this policy, and may be more restrictive than this policy, but should not be less restrictive.

All IT infrastructure strategic decisions shall be in concert with the appropriate leadership in the affected areas.

LSUHSC-S Operational Computer Services provides management and operation of the IT infrastructure in partnership and cooperation with the major divisions of LSUHSC-S. All IT infrastructure designs must be coordinated and approved by the Assistant Dean for Information Technology. All new network cable plants must adhere to the cabling and wiring standards, and must be installed by the Telecommunications Section of Auxiliary Enterprises.

The owner of an LSUHSC-S user ID shall be held accountable for any violations associated with that ID, regardless of the ownership or the location of the equipment where the violation may have occurred.

II. Purpose

The LSU Health Sciences Center Shreveport (LSUHSC-S) information technology (IT) infrastructure supports mission-critical and business-critical services for patient care, education, public service, research, and administration.

Staff, researchers, clinicians, students, and faculty depend on the LSUHSC-S IT infrastructure for the electronic classroom, telemedicine, healthcare, clinical and administrative database applications, high-speed data and image exchange, and collaborative initiatives with both internal and external entities.

The purpose of this document is to institute an enforceable policy to protect the performance, integrity, security, reliability, and continuity of vital services that rely on the LSUHSC-S IT infrastructure through good citizenship and legal and ethical use.

Definitions and Terms

Authorized Use - Use of the IT infrastructure must be consistent with the instructional, research, public service, patient care, and administrative goals of LSUHSC-S, and for the express purpose of conducting business related to one's job duties.

Authorized User - Staff, student, faculty, contractor, vendor, or entity that has an official affiliation with LSUHSC-S and has been assigned a network user ID and/or has been specifically authorized to use an infrastructure resource by the group responsible for operating the resource.

Business Use/Need - That which is consistent with one's role in the organization.

Operational Computer Services (or "Computer Services") - The LSUHSC-S central computer services group that provides non-academic IT support such as the network infrastructure, administrative applications, web services, E-mail infrastructure, IT security, etc. Computer Services reports to the Assistant Dean for Information Technology.

LSUHSC-S Information Technology Infrastructure - Information technology (IT) is a compilation of products and services that turn data into functional, meaningful, available information. The IT infrastructure is the network, the communication physical media, the protocols, the associated

software/applications/firmware, the hardware devices that provide connectivity, and all equipment attached thereto regardless of ownership or location.

Network - A network is that system of products and services by which all computers and peripherals are connected. Due to the current need for high-speed networking, it is critical that cables and wiring adhere to industry wiring standards to provide a reliable service.

Network User ID - A network account assigned by Computer Services Security that provides authentication and access to the LSUHSC-S network and applications on the IT infrastructure. A user must fill out an account application through his/her local supporter and sign a statement attesting to having read and understood the proper use of his/her user ID and password.

Academic Computing - Provides consulting services for the research and education missions of LSUHSC-S in areas such as statistics, electronic course design, electronic grading, and distance education. Academic Computing reports to the Assistant Dean for Information Technology.

III. Policy

Use of the LSUHSC-S IT infrastructure is a revocable privilege granted to those with an official affiliation with LSUHSC-S. Access to specific services on the IT infrastructure is based on a business need. Access to the IT infrastructure, and any components on the infrastructure, requires authorization. The LSUHSC-S IT infrastructure must be used in a manner consistent with protecting patient care and the critical business functions of the organization. No one should perform any activity on the IT infrastructure that undermines the public's confidence in LSUHSC-S to fulfill its mission.

Online Privacy Statement

Authorized LSUHSC-S staff may, at any time, for any reason, or without reason, access any device connected to the LSUHSC-S network such as a computer, its hard drives and component parts, monitor all contents, copy (download) any and all contents and use any such contents, for any purpose it deems necessary.

All users are advised that by using a computer on the LSUHSC-S IT infrastructure, they acknowledge that they are subject to the terms of this policy and that they give their unrestricted consent to the monitoring, copying, and unrestricted distribution of any transmission/communication or image generated, received by, sent by, or stored in the computer. Such use is subject to this same policy even when access to the LSUHSC-S network is through dial-up or the Internet and even when the computer that is used is personal property and not the property of LSUHSC-S. Such computer may be scanned, and network access may be denied.

Acceptable Use Statement

All users of the IT infrastructure are expected to exhibit responsible behavior and shall:

* Comply with all federal and state laws, LSUHSC-S rules and policies, terms of computing contracts, and software licensing rules.
* Obtain authorization to use LSUHSC-S computing resources.
* Actively participate and cooperate with Computer Services in the protection of the IT infrastructure against threats. For example, not opening E-mail from an unknown source, safeguarding passwords, reporting any violations of the acceptable use statement to the local support staff, and cooperating with the local support staff to keep security patches up to date on applications and computers.
* Take reasonable precaution to avoid introducing computer viruses into the LSUHSC-S network. For example, files downloaded from the Internet, received from E-mail, or brought in from outside LSUHSC-

S must be scanned with approved virus-scanning software. Anyone suspecting they may have a computer virus should contact the Help Desk (5-5470) immediately.

* Erase the hard-disk drive of any computer scheduled for surplus using an approved method as described by the State Office of Information Technology. All users of the IT infrastructure shall **NOT**:

* Engage in any activity that jeopardizes the availability, performance, integrity, or security of the IT infrastructure. Examples would be installation of a server without the express permission of Computer Services; using peer-to-peer (P2P) applications that take up bandwidth for the downloading of music, games, and video; releasing computer viruses or worms; and deliberately or recklessly overloading access links or switching equipment through the use of streaming media such as web radio and other mechanisms.

* Use computing resources in a wasteful manner that creates a direct cost to LSUHSC-S. Some examples of waste are unnecessary backgrounds on E-mail taking up valuable storage space, spending time on the Internet for personal use, playing computer games, engaging in non-business related online chat groups, or printing multiple copies of documents.

* Use LSUHSC-S IT resources for personal monetary gain or commercial purposes not directly related to LSUHSC-S business or for functions that are not related to one's job.

* Install, copy, or use any software in violation of licensing agreements, copyrights, or contracts.

* Send copies of documents or include the work of others that are in violation of copyright law in electronic communications.

* Obtain or attempt to access the files or electronic mail of others unless authorized by the owner or as required for legitimate business need, security issues, or investigative purposes. Disclosure of any information obtained must abide by existing policy, laws, and regulations.

* Harass, intimidate, or threaten others through electronic messages.

* Construct a false communication that appears to be from someone else.

* Send or forward unsolicited E-mail to lists of people you do not know. It places considerable strain on the E-mail system. Bulk mailing of information can be selectively used for business- related communication but must be approved at a level appropriate to the scope and content of the information. Contact Information Services (5-5408) for help with bulk mailings.

* Send, forward, or reply to E-mail chain letters.

* "Reply to all" to mass E-mail mailings.

* Retransmit virus hoaxes.

* Directly connect to LSUHSC-S computers by dialing to a modem installed on such computer or by using any other unapproved method.

* Create or transmit (other than for properly supervised and lawful research purposes) any offensive, obscene or indecent images, data or other material, or any data capable of being resolved into obscene or indecent images.

IV. Amendments and Revisions

This policy shall be amended or revised as the need arises.

V. Enforcement of Policy

Noncompliance with this policy could result in disciplinary action up to and including termination of employment, dismissal from an academic program, and civil or criminal liability.

This memorandum is effective January 16, 2004.
Signed: John C. McDonald, MD Chancellor

IV. CM-21 - Student Responsibilities and Rights

Preamble

The Louisiana State University Health Sciences Center (LSUHSC) in Shreveport is dedicated to providing its students, residents, faculty, staff, and patients with an environment of respect, dignity, and support. The diverse backgrounds, personalities, and learning needs of individual students must be considered at all times in order to foster appropriate and effective teacher-learner relationships. Honesty, fairness, evenhanded treatment, and respect for students' physical and emotional well being are the foundation of establishing an effective learning environment.

Student Responsibilities

Students are responsible for complying with all policies/procedures, rules and regulations and other information published by the Health Sciences Center. In addition, students are expected to abide by all federal, state and local laws.

Students are expected to:

A. Exhibit the highest standard of personal, academic professional and ethical behavior.
B. Treat faculty, staff, peers, clients, patients, and others with dignity and respect.
C. Abide by the Code of Conduct that applies to their specific professional discipline.

Students who violate any of the above when involved in any school or school related activity/function, whether on or off campus, will be subject to disciplinary action.

Students Rights

Mistreatment and abuse of students by faculty, residents, staff or fellow students is contrary to the educational objectives of the LSUHSC in Shreveport and will not be tolerated. Mistreatment and abuse include, but are not limited to, berating, belittling, or humiliation; physical punishment or threats; intimidation; sexual harassment; harassment or discrimination based on race, gender, sexual preference, age, religion, physical or learning disabilities; assigning a grade for reasons other than the student's performance; assigning tasks for punishment or non-educational purposes; requiring the performance of personal services; or failing to give students credit for work they have done.

Students have rights as guaranteed by the U.S. Constitution and all appropriate federal, state and local laws. Primary among those is the right to a fair and impartial hearing, if the student is accused of misconduct or violating university regulations. Additionally, students have the right to file a complaint for alleged mistreatment. The Health Sciences Center has existing policies and procedures that relate to the following: financial aid; sexual harassment; final grade appeal; student housing; parking; drugs; alcohol; firearms; student's access to records, and privacy; computer/internet use; dress and professional conduct; health insurance; and liability insurance. Issues that relate to these specific policies, which may be found on the Health Sciences Center website, should be addressed to the appropriate office. The Office of Student Affairs of the appropriate school can help students with information about those policies.

V. Conflict of Interest in Research (CM-23)

Increasingly, financial incentives involved in research may lead to conflicts of interests. This policy was developed to promote objectivity in research by establishing standards to ensure that there is no reasonable expectation that the design, conduct, or reporting of research, will be biased by any conflicting financial interest of an investigator.

Thus, as a graduate student involved in research, you must complete the institutional Conflict of Interest disclosure form every year, at the beginning of the academic year on July 1. Instructions are found on the Office of Legal Affairs web site in the 'my HSC' section. A reminder to obtain training and complete

the disclosure form will be sent to you through the e-mail system. If you have any questions, contact your mentor, or Head of your Department.

OTHER LSUHSC-S POLICIES

I. Inclement Weather Policy

When weather conditions render surface transportation hazardous, the Dean of the Medical School may declare a weather emergency. A declared weather emergency has the effect of establishing a holiday routine in the Health Sciences Center. It cancels classes, closes nonessential offices, and reduces staffing to the level necessary to support essential operations in the School and Hospital. The decision to declare such an emergency rests solely with the Dean or his designated representative. Local radio and television stations will be informed if the Dean declares a weather emergency. Members of the Student Executive Council will be informed through the President of the Student Executive Council (who confirms the action with the Dean for Student Affairs). The Student Executive Council members from the Graduate School will communicate this information to all other graduate students.

II. Dress Guidelines

A. PURPOSE

To establish minimal acceptable standards of dress for employees of Louisiana State University Health Sciences Center – Shreveport.

B. POLICY

1. LSUHSC-S identification badges must be worn while on duty, displayed on the front portion of the outer garment, clearly visible and not obscured in any way. (See Administrative Directive 2.8.3.)
2. No sweat suits, shorts, athletic wear or non-approved lab jackets/scrub suits may be worn (see individual department policy for definition.)
3. No hats, bandannas, or headgear, including earphones, radios, etc. may be worn unless required for safety or as part of the uniform.
4. No sleeveless (muscle) shirts may be worn. T-shirts may be worn in some departments (see department dress code) but must be free of slogans and objectionable language.
5. Halter or low-cut tops are not permitted.
6. See-through apparel is not allowed.
7. Jeans, including colored jeans, may be worn if the employee has no patient contact as part of their duties. They should be neat, clean and free of holes or patches. Individual departments may elect to ban jeans.
8. No shorts or spandex attire shall be permitted. Skorts and culottes are permitted if they are appropriate in length and present a professional appearance.
9. Shoes are to be neat and clean. Tennis shoes are acceptable unless not permitted by safety regulations. Open-toed shoes may be worn unless prohibited by Infection Control or Safety regulations. Thongs are prohibited.
10. Make-up, jewelry, and cologne/perfume shall not be excessive so as to cause disruption to patients or co-workers.
11. Novelty buttons and badges with slogans are prohibited.
12. Hairstyles, beards and mustaches are to be clean, well-groomed and conform to infection control and safe work practices.
13. Dress and personal hygiene that are considered in poor taste or disruptive may be addressed by the supervisor as a violation.
14. Specific department requirements shall be followed.

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III. Social Media Guidelines

In general:

1. LSUHSC-S resources should be used only for school-related purposes. This includes school e-mail accounts, and any school approved/affiliated web presence.
    a. Web presence is herein defined as any forum, page, social media outlet, RSS feed, or other information outlet accessible from electronic devices on the Internet.
2. Protected Health Information (PHI) **must** remain protected, irrespective of the technology used.
3. Faculty approval is required in order to create any web presence that represents the school, or claims affiliation with the school.
4. Appropriateness – messages/posts should be appropriate for school-related communication. Offensive language, bullying, and defamatory information are all considered unprofessional. Students are expected to maintain professionalism standards when using school-related/affiliated forms of social media.
5. Students have an obligation to uphold professional standards online, and should behave online in a manner that reflects expected behavior in real life.

E-mail:

1. Impersonating another individual's account is considered fraud.
2. Students should limit the size of messages to respect file-size limitations.
3. Message distribution should limited to "targeted" recipients.
4. Humor – humorous messages (especially political, religious, etc.) are not appropriate for general (mailing list distribution) transmission in school e-mail.

Social Media:

1. Staff shouldn't be specifically named or nicknamed.
2. Iimpersonating another individual's account is considered fraud
3. Students should ensure that privacy settings are enabled
4. It is highly recommended that your account be visible only to friends.
5. Images
    a. Don't post images of classmates/staff that are unbecoming, unprofessional, or represent the school in a negative light.
    b. Students are responsible for material that is purportedly self-affiliated (including, but not limited to, images/text/drawings, etc.). If a friend posts a picture of you online, you are responsible for requesting the removal of the image if it is unprofessional.
6. Posts/Messages
    a. Posts related to schoolwork, school functions, staff, or other students should remain professional, and should not portray the school in a negative light.
    b.
        i. Approved = "I'm so sick and tired of studying"
        ii. Inappropriate = "I hate Dr. Smith's lectures, I can't understand a word he says."

Violations - A violation of these appropriate use guidelines will result in immediate referral to the Head of the appropriate Department and the Dean of the School of Graduate Studies

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D. STATE AND HEALTH SCIENCES CENTER REGULATIONS

The following regulations concern the definition of "Contraband" and its prohibition on campus, and an Administrative Directive on Substance and Alcohol Abuse. It is extremely important that you carefully read each of these regulatory statements, and follow them to the letter.

CONTRABAND R.S. 14:402.1

It is unlawful for any person to introduce or attempt to bring into or upon the grounds or buildings of any state owned or administered hospital or medical facility except as authorized by the Dean or Administrator any of the following articles hereby declared contraband:

1. Any intoxicating beverages or any beverage that causes an intoxicating effect. (Examples - beer, liquor, wine, alcohol).
2. Any narcotic or hypnotic or exciting drug of any kind (Examples - heroin, cocaine, marijuana, barbiturates, amphetamines, sleeping pills, some nasal inhalers).
3. Any firearm or other dangerous weapon (Examples - gun, pocket knife with a blade exceeding six inches, razor, nunchaku, sap, club).

Penalty - Violators of this statute, R.S. 14:402.1, can upon conviction be imprisoned up to three years with hard labor.

If you know a fellow worker, patient or visitor who in violation of this law, please contact the University Police at 6160 or 6165. You have a right to a safe and secure workplace. Protect that right.

DRUG AND ALCOHOL ABUSE PREVENTION PROGRAM

I. Introduction

Purpose: The Drug Free Workplace Act of 1988 requires employers who contract with or receive grant funds from federal agencies to insure they meet certain requirements for providing a drug-free workplace by good faith effort. The Drug Free School and Communities Act of 1989 requires that as a condition for receiving funds or any other financial assistance under any federal program, an institution of higher education must certify that it has adopted and implemented a program to prevent the unlawful possession, use or distribution of illicit drugs or alcohol abuse by students or employees.

Provision: The performance of employees/students who engage in substance abuse in the health sciences center environment is or may be adversely affected. In an academic health science setting, an impaired employee's job related activity can result in errors deleterious to the missions of the institution.

Because of the potential for errors of omission or commission and because unlawful manufacture, distribution, dispensing, possession or use of a controlled substance violates state and/or federal laws, it is the policy of Louisiana State University Health Sciences Center in Shreveport to maintain an environment free of drugs and alcohol. The illegal use, possession or distribution of illicit drugs and alcohol abuse by students and employees on the university premises or as any part of its activities is prohibited.

All employees, students and faculty, whether paid, unpaid or gratis must understand that continued employment is contingent upon willingness to comply with the Drug Free Workplace Act of 1988 and the Drug Free Schools and Communities Act of 1989. Director of Human Resources Management within five (5) days following a conviction of any drug related criminal charge which is work related. The Director will notify the Grants Office which must comply with the provisions for notice to the federal funding agency or federal contractor within ten (10) days. Notice to the federal agency or federal

contractor should include the sanctions imposed on the employee convicted of a drug related work-related crime. All students convicted of a drug related criminal offense which is health sciences center related must report the circumstances within five (5) days of the conviction to the Assistant Dean for Student Affairs - School of Medicine, Dean for Graduate Studies - School of Graduate Studies, or the Director of Student Affairs - School of Allied Health Professions, depending on the school in which the student is enrolled.

Scope: Laboratory drug tests of appropriate body fluid specimens may be required of an employee/student should there be reasonable suspicion to believe a chemical abuse problem exists. Such reasonable suspicion to believe such a problem exists may include, but is not limited to, the appearance of impairment or intoxication the job or aberrant behavior. Testing may also be required after an accident, near accident or incident.

Louisiana and the US Drug Enforcement Administration Classify Drugs in Schedules

- Schedule I and II drugs consist of opiates, opium derivatives, hallucinogenic substances, depressants and stimulants.
- Schedule III drugs consist of stimulants, depressants, nalorphine, limited narcotic drugs, anabolic steroids and muscle building substances.
- Schedule IV drugs consist of barbital, phenobarbital, mebutames, etc.
- Schedule V drugs consist of narcotic drugs containing nonnarcotic active medicinal ingredients.

Penalties for Possession with Intent to Distribute, Dispense or Manufacture

- Heroin: 20 years (no minimum mandatory); $1 million fine; 3 years min. mandatory
- (Less than 100 grams) Term of Supervised release; $50 mandatory assessment
- Cocaine: 20 years (no minimum mandatory); $1 million fine; 3 years min. mandatory
- (Less than 500 grams) Term of Supervised Release; $50 mandatory assessment
- Cocaine Base: 20 years (no minimum mandatory); $1 million fine; 3 years min. mandatory
- (Less than 5 grams) Term of Supervised Release; $50 mandatory assessment
- Phencyclidine (PCP): 5 years (no minimum mandatory); $250,000 fine; 2 years min. mandatory
- (Less than 10 grams pure: Term of Supervised Release; $50 mandatory assessment
- or less than 100 grams diluted)
- Marijuana: 5 years (no minimum mandatory); $250,000 fine; 2 years min. mandatory
- (Less than 50 kilograms) Term of Supervised Release; $50 mandatory assessment
- Methamphetamine: 20 years (no minimum mandatory); $1 million fine; 3 years min. mandatory
- (Less than 10 grams, or Term of Supervised Release; $50 mandatory assessment
- less than 100 grams diluted)
- Any Schedule III Controlled: 5 years (no minimum mandatory); $250,000 fine; 2 years min. mandatory
- Substance; Depressants Term of Supervised Release; $50 mandatory assessment
- Any Schedule IV: 3 years (no minimum mandatory); $250,000 fine; 1 year min. mandatory
- Controlled Substance Term of Supervised Release; $50 mandatory assessment
- Any Schedule V: 1 year (no minimum mandatory); $100,000 fine; $25 mandatory
- Controlled Substance assessment (misdemeanor)

Employee/student assistance programs are available for faculty, staff and students. These programs provide options for formal referral, informal suggestions and/or self-referral for substance or alcohol abuse problems.

Disciplinary Sanctions: The Health Sciences Center will impose disciplinary sanctions on students and employees (paid and unpaid) who violate the policy. Among the disciplinary sanctions which may be

imposed on students are the following: reprimand, probation, restriction, suspension, expulsion and referral for prosecution. Among the disciplinary sanctions which may be imposed on employees are the following: oral warning, written reprimand, suspension, termination and referral for prosecution. Faculty members will be disciplined in accordance to Bylaws and Regulations. The Health Sciences Center may require completion of an appropriate rehabilitation program for continued participation in Health Sciences Center programs or employment.

Rehabilitation

1. Management may, as a condition of continued employment, require the employee to enter a treatment/rehabilitation program. If time off is required for the treatment program, the Health Sciences Center's leave of absence and sick leave policies will apply. The employee must provide permission for the treatment center to provide continuing communication and regular reports to the Health Sciences Centerís Medical Review Officer and Director of Employee Assistance Program.

2. After successful completion of the treatment/rehabilitation program, the employee must continue with an appropriate follow-up program that usually runs one to three years. The follow-up treatment program will be determined by the treatment/rehabilitation center and the Health Sciences Center's Medical Review Officer and Director of Employee Assistance Program.

3. Withdrawal or failure to successfully complete the treatment program will result in immediate termination.
4. Submission to periodic random drug screens upon request is required and is a condition for continued employment.

5. Personnel returning to work will not be allowed to have possession of narcotic keys nor to work with controlled substances until the employee demonstrates to the satisfaction of management that he/she can handle narcotics.

6. Any continuing evidence of chemical abuse will result in notification to state or federal law enforcement agencies and/or National Licensing Boards, if appropriate.

Administrative Directive on Substance and Alcohol Abuse

A. Purpose: The Drug Free Workplace Act of 1988 requires employers who contract with or receive grant funds from federal agencies to insure they meet certain requirements for providing a drug free workplace by good faith effort. The Drug Free School and Communities Act of 1989 requires that as a condition for receiving funds or any other financial assistance under any federal program, an institution of higher education must certify that it has adopted and implemented a program to prevent the unlawful possession, use or distribution of illicit drugs or alcohol abuse by students or employees. While these are two separate pieces of federal legislation they do have common goals and expectations which we have attempted to capture in a single policy. The following are the provisions of the LSUHSC-S policy to provide for these lawful requirements. Failure to follow stipulated guidelines could result in institutional losses of federal support to research and education.

B. Provision: The performance of employees/students who engage in substance abuse in the health sciences center environment is or may be adversely affected. In an academic health science setting, an impaired employee's job-related activity can result in errors deleterious to the missions of the institution.
Because of the potential for errors of omission or commission and because unlawful manufacture, distribution, dispensing, possession or use of a controlled substance violates state and/or federal laws, it is the policy of Louisiana State University Health Sciences Center in Shreveport to maintain an environment free of drugs and alcohol. The illegal use, possession or distribution of illicit drugs and

alcohol abuse by students and employees on the university premises or as any part of its activities is prohibited.

All employees and students whether paid, unpaid, or gratis must understand that continued employment is contingent upon willingness to comply with the Drug Free Workplace Act of 1988 and The Drug Free Schools and Communities Act of 1989.

All employees are required to notify the Director of Human Resources Management within five (5) days following a conviction of any drug related criminal charge which is work related. The Director will notify the Grants Office which must comply with the provisions for notice to the federal funding agency or federal contractor within ten (10) days. Notice to the federal agency or federal contractor should include the sanctions imposed on the employee convicted of a drug related work related crime. All students convicted of a drug related criminal offense which is health sciences center related must report the circumstances within five (5) days of the conviction to the Assistant Dean for Student Affairs. Alcohol abuse and the illegal use and abuse of other drugs are associated with numerous health, safety and social problems. The more common health problems seen affect the cardiovascular system resulting in heart disease or stroke; central nervous system involvement which leads to deteriorating mental as well as physical capabilities, gastrointestinal system involvement producing irritation, ulcers and cirrhosis of the liver. The fetal alcohol or drug abuse syndrome is a particularly serious and life threatening condition to the unborn child. Mental health and social problems are perhaps one of the more common manifestations of alcoholism and drug abuse and lead employees/students to the markedly impaired in their performance.

The employees and students use and abuse of these substances will prevent this institution from accomplishing its goal that is the provision of the highest quality medical care. It is for these reasons we are mandating a "Drug Free" campus.

Employee/student Assistance Programs for faculty, staff and students are available. These programs provide options for formal referral, informal suggestion and/or self-referral for substance or alcohol abuse problems.

The provisions of this policy will be disseminated to each faculty member, employee and student at time of employment, orientation, and a copy placed in each Employee Handbook.

C. Scope: Laboratory drug tests of appropriate body fluid specimens may be required of an employee/student should there be reasonable suspicion to believe a chemical abuse problem exists. Such reasonable suspicion to believe such a problem exists may include, but is not limited to, the appearance of impairment or intoxication on the job or aberrant behavior. Testing may also be required after an accident, near accident or incident.

D. Procedures

1. Any employee/student who suspects substance abuse by another employee should report this to their supervisor, department head, or appropriate campus administrator.
2. Any report of suspected chemical abuse on the part of an employee/student will be reported to the Occupational Health Nurse or the Employee Assistance Program person and will be treated in a confidential manner and investigated thoroughly by the Occupational Health Nurse or the Employee Assistant Program person.
3. Should an investigation indicate the probability of chemical abuse, the employee/student in question will be confronted with the information and provided an opportunity to respond.
4. Refusal to submit for testing when requested may result in immediate termination of employment.
5. All evidence may be submitted to state or federal law enforcement agencies and/or National Licensing Boards, if appropriate.

E. Disciplinary Sanctions: The Health Sciences Center will impose disciplinary sanctions on students and employees (paid and unpaid) who violate the policy. Among the disciplinary sanctions which may be imposed on students are the following: reprimand, probation, restriction, suspension, expulsion and referral for prosecution. Among the disciplinary sanctions which may be imposed on employees are the following: oral warning, written reprimand, suspension, termination and referral for prosecution. The Health Sciences Center may require completion of an appropriate rehabilitation program for continued participation in Health Sciences Center programs or employment.

F. Rehabilitation

1. Management may, as a condition of continued employment, require the employee to enter a treatment/rehabilitation program. If time off is required for the treatment program, the Health Sciences Center's leave of absence and sick leave policies will apply. The employee must provide permission for the treatment center to provide continuing communication and regular reports to the Health Sciences Centers Medical Review Officer.
2. After successful completion of the treatment/rehabilitation program, the employee must continue with an appropriate follow-up program that usually runs one to three years. The follow-up treatment program will be determined by the treatment/rehabilitation center and the Health Sciences Center's Medical Review Officer.
3. Withdrawal or failure to successfully complete the treatment program will result in immediate termination.
4. Submission to periodic random drug screens upon request is required and is a condition for continued employment.
5. Personnel returning to work will not be allowed to have possession of narcotic keys nor to work with controlled substances until the employee demonstrates to the satisfaction of management that he/she can handle narcotics.
6. Any continuing evidence of chemical abuse will result in notification to state or federal law enforcement agencies and/or National Licensing Boards, if appropriate.

Administrative Directive on Sexual Harassment

A. Policy: LSU Health Sciences Center - Shreveport is committed to providing a professional work environment that maintains equality, dignity and respect for all members of its community. In keeping with this commitment, the Health Sciences Center prohibits discriminatory practices, including sexual harassment. Any sexual harassment, whether verbal, physical or environmental, is unacceptable and will not be tolerated. The purpose of this policy is to define sexual harassment and to establish a procedure whereby alleged sexually harassed employees, staff and students may lodge a complaint immediately.

B. Definition: Sexual harassment is illegal under federal (section 703 of Title VII of the Civil Rights Act of 1964), state and local law. It is defined as any unwelcome sexual advance, request for sexual favors or other verbal or physical conduct of a sexual nature when:

1. Submission to the conduct is made either explicitly or implicitly a term or condition of an individual's employment;
2. Submission to or rejection of such conduct by an individual is used as basis for an employment decision affecting the individual; or
3. The conduct has the purpose or effect of unreasonable interfering with the individual's performance or of creating an intimidating, hostile or offensive working environment.

Types of behavior that constitute sexual harassment may include, but are not limited to: unwelcome sexual flirtations, advances or propositions; derogatory, vulgar or graphic written or oral statements regarding one's sexuality, gender or sexual experience; unnecessary touching, patting, pinching or

attention to an individual's body; physical assault; unwanted sexual compliments, innuendo, suggestions or jokes; or the display of sexually suggestive pictures or objects.

C. Procedures: Any member of the Health Sciences Center Community who has a sexual harassment complaint against a supervisor, coworker, visitor, faculty member, student or other person, has the right and obligation to bring the problem to Health Sciences Center's attention. Any supervisor who witnesses such conduct or receives a complaint must report the incident to Human Resource Management, an appropriate administrator or the Dean of the respective school. It is the responsibility of all LSU Health Sciences Center employees in a supervisory capacity to insure that the work/academic environment is free from sexual harassment.

A staff member who believes he or she has been sexually harassed, should immediately report the incident to the Assistant Director of Employee Relations, Human Resource Management (318-675-5611) or to the Director of Human Resource Management (318-675-5610) or to an appropriate administrator or the Dean of the School of Graduate Studies. In addition, staff members may report the incident to any supervisor. A recipient of such a complaint shall notify Human Resource Management.

The Department of Human Resource Management will be responsible for investigating complaints of sexual harassment occurring between staff members; complaints made by staff against students; and complaints made by staff against other third parties. Human Resource Management will either investigate or assist those responsible for investigating complaints made by or against faculty members, students or House Staff Officers.

Actions taken to investigate and resolve sexual harassment complaints shall be conducted confidentially to the extent practicable and appropriate in order to protect the privacy of persons involved. An investigation may include interviews with the parties involved, and if necessary, with individuals who may have observed the incident or conduct or who have other relevant knowledge. The individuals involved in the complaint will be notified of the results of the investigation.

The Health Sciences Center will not tolerate discrimination or retaliation against any individual who makes a good-faith sexual harassment complaint, even if the investigation produces insufficient evidence to support the complaint, or any other individual who participates in the investigation of a sexual harassment complaint. If the investigation substantiates the complaint, appropriate corrective measures and/or disciplinary action, up to and including termination, will be taken swiftly.

LSU Health Sciences Center Shreveport will make every reasonable effort to insure that all members of the Health Sciences Center Community are familiar with this policy. You are encouraged to address questions or concerns regarding this policy with the Assistant Director for Employee Relations, Human Resource Management.

NOTIFICATION OF RIGHTS UNDER FERPA

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their educational records. They are:

The right to inspect and review the student's education records within 45 days of the day the LSUHSC receives a request for access. Students should submit to the registrar requests that identify the records they wish to inspect. The LSUHSC Office of the Registrar will notify the student of the time and place where the records may be inspected. If the records are not maintained in the Office of the Registrar, the student will be advised of the correct office to contact.

The right to request the amendment of the student's educational record that the student believes are inaccurate or misleading.

Students may ask the LSUHSC to amend a record that they believe is inaccurate or misleading. They should write the LSUHSC official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading.

If the LSUHSC decides not to amend a record as requested by the student, the LSUHSC will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

The right to consent to disclosures of personally identifiable information contained in the student's educational records, except to the extent that FERPA authorizes disclosures without consent.

One exception which permits disclosure without consent is disclosure to school officials with legitimate educational interests. A school official is a person employed by the LSUHSC in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person or company with whom the LSUHSC has contracted (such as an attorney, auditor, medical consultant, therapist, or collection agent); a person serving on the LSU Board of Supervisors; or a student serving on an official committee, such as for academic awards, disciplinary or grievance committees or assisting another school official in performing his or her tasks. A school official has legitimate educational interest if the official needs to review an educational record in order to fulfill his or her professional responsibility.

Upon request, the LSUHSC discloses education records without consent to officials of another school in which a student seeks or intends to enroll. (Attempts are made to advise the student of the disclosure before it is made.)

The right to file a complaint with the U.S. Department of Education concerning alleged failures by the LSUHSC to comply with the requirements of FERPA. The name and address of the office that administers FERPA is: Family Policy Compliance Office, U.S. Department of Education, 600 Independence Ave., SW, Washington, DC 20202-4605.

PUBLIC INFORMATION

In compliance with the Privacy Act, public information regarding students attending the LSUHSC includes the student's: name, current local address and phone number, date and place of birth, field of study, most recent previous school attended, dates of attendance, degrees and awards, photographs, e-mail address, class schedule and anticipated graduation date. Public information pertaining to any individual student will be released by the Office of the Registrar upon inquiry, unless the student has requested that specific items not be released. A student's request to have "public" information withheld must be filed at the Office of the Registrar no later than the third class day of classes following each registration. Partial or whole lists of students by name and address will not be released for commercial purposes other than by contractual agreement with the LSUHSC (currently there is no such agreement).

POLICIES AND PROCEDURES FOR DISMISSAL OF STUDENTS

Each student's academic performance, degree progression, and professional performance is reviewed at least annually by the student's Department. Reviews may occur more frequently, if judged appropriate or necessary by the Department. A student who does not meet the minimal grade point average requirements specified by the Graduate School and Department (a minimum grade point average of 3.0) or does not successfully pass the qualifying/preliminary examination may be academically

dismissed from the program. Other reasons for dismissal (in addition to inadequate academic performance) include, but are not limited to, ethical and legal violations.

ETHICAL VIOLATIONS

Any student or faculty member has an obligation to report a perceived violation of ethical standards and of Departmental and institutional policies. The report should be made to the Department Head and to the Dean of the Graduate School. Certain ethical violations may be sufficiently serious to warrant immediate dismissal from the Program. They include, but are not limited to violation of the following ethical principles: (1) unethical student-faculty relationships that are related to grades in a course or to student or faculty evaluation; (2) academic dishonesty, including, but not limited to, falsification and fabrication of research data and plagiarism; (3) violations of institutional policies.

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DESCRIPTION OF THE BUILDINGS OF THE LSUHSC-S COMPLEX

MAP of CAMPUS

Building A is also referred to as the Comp Care Building; it is occupied mainly by Comprehensive Care and Family Medicine Clinics, but also houses Employee Health and the the Clinical Skills Center. Building A is separate from Building B, connected only through the Ground floor, and a covered exterior walkway at the first-floor level.

Building B is the bulk of the Med School Complex. It holds the classrooms, departmental offices, faculty offices, laboratories, and other administrative offices. Other important places in "B" Building are the following:

G floor: Mailroom, student lounge, exercise room, bookstore, Wow Café and PJ's Coffee, the Donald Zadeck Conference Center (Room G-221).

First floor: Registrar's office, Medical Student Affairs office, School of Graduate Studies office, Student Financial Aid office, cashier's counter (Bursar's Office), Chancellor/Medical School Dean's office, Quality Enhancement Plan (QEP) office, Information Services office, Vice Chancellor for Academic Affairs office

Building C is directly connected to "B" Building on the first and third floors. Some classes are held in the Core Teaching Laboratory on the Ground Floor in Building C. The Library, Student Activities Office, and the Auditorium are on the first floor. The Testing Center is on the third floor. Medical Communications, faculty offices and laboratories, the Psychiatry, Neurology and Neurosurgery Departments are also found in "C" Building.

HOSPITAL COMPLEX

The cafeteria, ATM machine, Campus Federal Credit Union, and pharmacy are all located on the ground floor of the hospital complex.

ADMINISTRATION BUILDING

This building, as its name implies, houses administration offices such as Human Resources, Budget and Finance and Grants Accounting, Payroll as well Parking. A number of clinical department offices of the Medical School are also located here. The Administration Building is connected to "B" Building by a small corridor between the first floors only.

BIOMEDICAL RESEARCH INSTITUTE (BRI) BUILDING

Each floor of the BRI is connected with the corresponding floor of the Medical School at the center of Building B. On the ground floor, tables near The Atrium Deli and Coffee Bar exit are available for lunch, etc. On each of the higher floors of the BRI atrium, there are tables and comfortable seating. You should feel free to use these areas, but take "extra-good" care on this "non-university" property. (Specifically, do not leave litter and keep feet off of tables, chairs, couches, etc.). The Dean's Offices and Office of Sponsored Programs and Technology is located on the first floor of this building.

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APPENDICES

Appendix A Graduate Advisory Council 20-21

KELLY TATCHELL, PhD,
Associate Dean, School of Graduate Studies

STEPHAN WITT, PhD,
Head, Biochemistry and Molecular Biology

BRENT REED, PhD,
Graduate Program Director, Biochemistry and Molecular Biology

KEVIN MCCARTHY, PhD,
Head, Cellular Biology and Anatomy

HONG SUN, PhD,
Graduate Program Director, Cellular Biology and Anatomy

MARTIN SAPP, PhD,
Head, Microbiology and Immunology

DAVID MCGEE, PhD,
Graduate Program Director, Microbiology and Immunology

D. NORMAN HARRIS, PhD,
Head, Molecular and Cellular Physiology,

CHRISTOPHER PATILLO, PhD,
Graduate Program Director, Molecular and Cellular Physiology

NICHOLAS GOEDERS, PhD,
Head, Pharmacology, Toxicology and Neuroscience

KENNETH MCMARTIN, PhD,
Graduate Program Director, Pharmacology, Toxicology and Neuroscience

CHRISTOPHER SCHMOUTZ, PhD,
Elected Member, Pharmacology, Toxicology and Neuroscience

YUPING YU, PhD,
Elected Member, Biochemistry and Molecular Biology

LUKE WHITE, MD / PhD Student Member,
Department of Microbiology and Immunology

Maggie MOTT, Student Member
Department of Pharmacology, Toxicology and Neuroscience

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Appendix B Graduate Faculty members 2020-2021

Biochemistry and Molecular Biology	Status
Arrigo DeBenedetti, PhD	Member
Steven A. Conrad, MD PhD	Associate Member
Eric First, PhD	Member
David Gross, PhD	Member
Shile Huang, PhD	Member
Sushil Jain, PhD	Member
Nancy Leidenheimer, PhD	Member
Cherie-Ann Nathan, MD	Associate Member
Brent Reed, PhD	Emeritus Member
Lucy Robinson, PhD	Member
Kelly Tatchell, PhD	Member
Stephan Witt, PhD	Member
Xiuping Yu, PhD	Member

Cellular Biology and Anatomy	Status
Sharon Dunn, PhD	Associate Member
Kathryn Hamilton, PhD	Member
Christopher Kevil, PhD	Member
David Krzywanski, PhD	Associate Member
Kevin Lin, PhD	Associate Member
Kevin McCarthy, PhD	Member
Sumitra Miriyala, PhD	Associate Member
A. Wayne Orr, PhD	Member
Manikandan Panchatcharam, PhD	Member
Joseph Penny, PhD	Associate Member
Krista Rodgers, PhD	Associate Member
Hong Sun, PhD	Member
Peimin Zhu, MD, PhD	Associate Member

Microbiology and Immunology	Status
Michelle Arnold, PhD	Member
Jason Bodily, PhD	Member
Robert Chervenak, PhD	Emeritus Member
Monica Cartelle Gestal, PhD	Associate Member
Stanimir Ivanov, PhD	Associate Member
Jeremy Kamil, PhD	Member
David McGee, PhD	Member
Martin Muggeridge, PhD	Member
Kenneth Peterson, PhD	Member
Martin Sapp, PhD	Member
Rona Scott, PhD	Member
Matthew Woolard, PhD	Member
Andrew A. Yurochko, PhD	Member

Molecular and Cellular Physiology	Status
J. Steven Alexander, PhD	Member
Shenuarin Bhuiyan, PhD	Associate Member
Diana Cruz-Topete, PhD	Associate Member
Ana-Maria Dragoi, MD, PhD	Associate Member
Paari Dominic, MD	Associate Member

Lynn Harrison, PhD	Member
Norman Harris, PhD	Member
Christopher Kevil, PhD	Member
Li Guohong, PhD	Associate Member
Christopher Pattillo, PhD	Member
Changwon Park, PhD	Associate Member
Karen Stokes, PhD	Member
Yuping Wang, PhD	Member

Pharmacology, Toxicology & Neuroscience	**Status**
Elizabeth Disbrow, PhD	Member
Donard Dwyer , PhD	Member
Nicholas Goeders, PhD	Member
Nadejda Korneeva, PhD	Associate Member
Xiao-Hong Lu, PhD	Associate Member
Nancy Leidenheimer	Associate Member
Kenneth McMartin, PhD	Member
Kevin Murnane	Member
Hyung Nam, PhD	Associate Member
James C. Patterson II, MD	Associate Member
Sandra Roerig, PhD	Emeritus Member
Christopher Schmoutz, PhD	Associate Member
John Vanchiere, MD, PhD	Associate Member
Yunfeng Zhao, PhD	Member

Allied Health Professions	**Status**
Clif Frilot, PhD	Affiliate Associate Member

Appendix C Student Council Members 2021-2022

2020-2021 Graduate Student Council Representatives

Executive Officers

President and Social Media Chair: Maggie Mott, Pharmacology, Toxicology and Neuroscience
Vice President: Ashton Jorgensen, Pharmacology, Toxicology and Neuroscience
Secretary: Ashley Wilkins, Microbiology and Immunology
Fundraising Chair: Sarah Soorya, Microbiology and Immunology
Social Chair: Tyler Reekes, Pharmacology, Toxicology and Neuroscience

Departmental Representatives

Biochemistry and Molecular Biology: Vickky Pandit
Cellular Biology and Anatomy: Sudha Sharma
Microbiology and Immunology: Lauren Henderson
Molecular and Cellular Physiology: Shripa Amatya
Pharmacology, Toxicology and Neuroscience: Alicia Thomas

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Appendix D POLICIES FOR USE OF THE STUDENT UNION

- The hours will be 7:00 am to 11:00 pm every day of the week unless there is a special function, such as a class party, in which case the hours may be extended to 2:00 am.

- Special functions that are booked for the entire student body or an individual school, may be booked on a yearly basis. Conflicts in the yearly schedule will be resolved by a meeting of representatives from each of the schools. However, no group can reserve the Union for recurring weekly functions (such as TGIFs) without the consent of the Student Union Committee.

- Union reservations will be made through School of Medicine, Student Affairs - Ms. Laura Mackowiak (318) 675-5341

- When given a schedule of functions at least two weeks in advance Environmental Services will provide cleanup after parties. It is the responsibility of the contact person from each school to notify Environmental Services directly.

- For each special function, one student shall be designated to be responsible for making sure that everything is in order at the conclusion of the function. The contact person making the reservation will obtain the name of this person. **All folding tables and stacking chairs must be placed back in storage after each special function.** Access must not be blocked to any breaker type boxes, vents, air handler units, etc. in the 2 storage rooms outside the Student Union Building. The chairs must not be stacked so high as to block any of these boxes, etc. These rooms must be kept in order or the privilege of using these rooms for storage may be revoked.

- There is a "panic" button for University Police on the curved kitchen counter. This panic button should be used only for emergency situations. There is an ac/heat override button on the curved kitchen counter to activate the ac/heat should it be needed.

- There is a wall phone in the kitchen area (675-8990).

- It is the responsibility of the designated responsible student to post a sign at the Student Union announcing special functions.

- Private functions will not be allowed in the Student Union.

- Consuming alcoholic beverages is not allowed unless there has been prior approval from the Chancellor of the Health Sciences Center.

- Excessive noise cannot be tolerated.

- No parking is allowed on the grassy areas or on the two (2) wide sidewalks leading up to the building. Parking is available in institution lots after 4:30 p.m. Monday through Friday and 24 hours on weekends and holidays.

- Please make sure you place no kegs or keg coolers inside the building. They must remain on the porch.

- All lights/ceiling fans must be turned off, inside and outside, and the building must be secured before you vacate the building. The security lights remain on at all times.

- It is a violation of university policy CM-10 to smoke on Health Sciences Center properties, including inside and outside the Student Union building.

* *These policies have been established by the Student Union Committee that consists of student and administrative representatives from each of the schools that make up the LSU Health Sciences Center.*