

## Expenses and Financial Aid

All full-time graduate students within the Department of Biochemistry and Molecular Biology at LSUHS receive a full tuition waiver and a research fellowship stipend of \$26,000. Senior students may compete for fellowships that provide a stipend of \$28,000. Shreveport is one of the most affordable cities in the U.S., with a cost of living that is approximately 20% below the U.S. average.



## The Health Sciences Center Environment

LSU Health Shreveport is the premier center for biomedical education and research in northern Louisiana. The present campus, completed and occupied in 1975, contains the LSU School of Medicine, the Biomedical Research Institute (BRI), the Feist-Weiller Cancer Center, University Hospital, and other medical education buildings. Approximately

600 students are enrolled in the School of Medicine, the School of Graduate Studies, and the School of Allied Health Professions. The Research Core Facility provides researchers access to sophisticated research technologies, including Next Generation DNA sequencing, laser capture microdissection, flow cytometry and fluorescence activated cell sorting, real time PCR, mass spectrometry, confocal and multi-photon microscopy, microPet, microCT, bioluminescence imaging of small animals, high-throughput drug screening and DNA microarray analysis. Our institution also enjoys interactions with two undergraduate campuses in Shreveport, LSU-Shreveport and Centenary College, with a combined enrollment of over 4000 students.



Photo courtesy of the Shreveport-Bossier Convention & Tourist Bureau

## The City of Shreveport

Shreveport is located on the Red River in the northwest corner of Louisiana, 320 miles north of New Orleans and 180 miles east of Dallas. It is the commercial and cultural focal point of the Ark-La-Tex, the geographic region formed by the conjunction of Arkansas, Louisiana, and Texas. Shreveport is served by several airlines with convenient connections to all parts of the country. Along with Bossier City

just across the Red River, the Shreveport metropolitan area has a population of 300,000. Shreveport is home to the nationally recognized R.W. Norton Art Gallery and Sci-Port Discovery Center science museum and planetarium. Excellent recreation areas include the Ouachita Mountains of southern Arkansas, the forests and bayous of northern Louisiana, and Toledo Bend Reservoir on the Sabine River bordering Texas and Louisiana. Particularly notable is Cross Lake, within the city limits, which offers excellent fishing, sailing, canoeing, and water skiing opportunities. Shreveport is the site of numerous annual celebrations of the arts and sports, including Mardi Gras, the Red River Revel Arts Festival, the Mudbug Madness and Holiday in Dixie celebrations, the Independence Bowl football game, and the Super Derby, one of the nation's premier thoroughbred horse races. The Shreveport Symphony, the Shreveport Little Theatre, and the Shreveport Opera are highly regarded local performing arts organizations. Shreveport and Bossier City have more than 400 places of worship serving Protestant, Catholic, Jewish, Islamic, and independent faiths.

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## Please address correspondence to:

Graduate Student Admissions  
Department of Biochemistry and Molecular Biology  
Louisiana State University Health Shreveport  
1501 Kings Highway  
Shreveport, LA 71103-3932

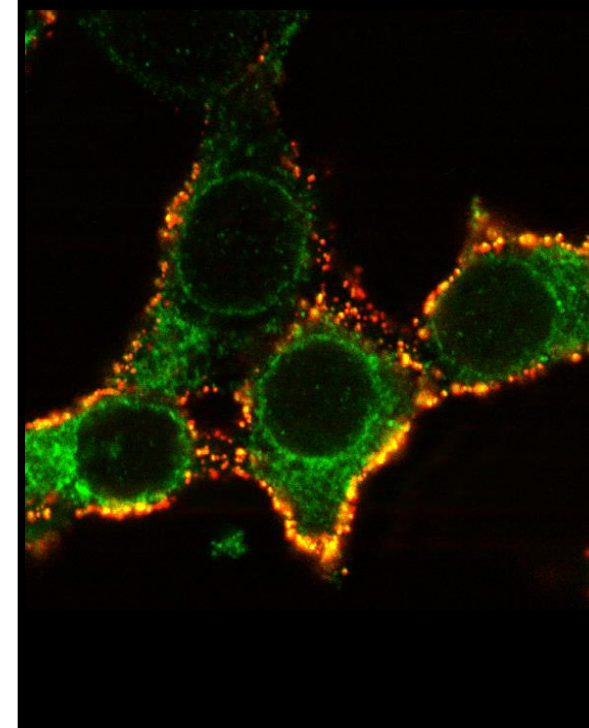
**Telephone:** (318) 675-5160

**FAX:** (318) 675-5180

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

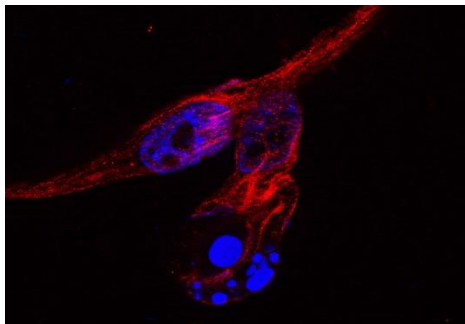
**E-mail:** [Admissions-BMB@lsuhsc.edu](mailto:Admissions-BMB@lsuhsc.edu)

# Department of Biochemistry & Molecular Biology



## Program of Study: Doctor of Philosophy

Our Ph.D. program emphasizes research training to prepare the student for a challenging scientific career, directing original independent research activities. During the first two years, students take courses in Biochemistry, Molecular Biology, Genetics, Cell Biology, Biochemistry and Molecular Biology Methods, Statistics, Protein Structure, and Scientific Writing. Advanced electives include courses in cell signaling, post-transcriptional control, transcriptional control, classical and molecular genetics, and bioinformatics. In addition to coursework, students rotate through three different laboratories in their first year, after which they select a faculty mentor for their Ph.D. research. Students have a wide selection of research areas to choose from, including gene expression, signal transduction, cancer biology, neurobiology, and synthetic biology. Interactions and collaborations among faculty members in all departments within the Medical School and area universities are encouraged.



BxPC3 cells depicting nuclear condensation, a classic feature of apoptosis

## Faculty

### Stephan N. Witt, Ph.D., Professor and Head

-Elucidating the role of  $\alpha$ -Synuclein in Parkinson's disease

### Arrigo De Benedetti, Ph.D., Professor

- Altered protein synthesis in solid tumors and mechanisms of DNA repair

### Eric First, Ph.D., Associate Professor

- Redesigning the protein synthesis machinery to use D-amino acids

### David Gross, Ph.D., Professor

- The role that epigenetics, chromatin structure and 3D nuclear architecture play in regulating gene expression

### Shile Huang, Ph.D., Associate Professor

- The role that mTOR plays in tumorigenesis and metastasis

### Sushil Jain, Ph.D., Professor

-Micronutrients, inflammation and insulin signaling in diabetes

### Nancy Leidenheimer, Ph.D., Professor

-The biogenesis, trafficking and function of GABA<sub>A</sub> receptors

### Cherie-Ann Nathan, M.D., Professor

-Targeted therapy for head and neck cancer with special emphasis on targets in the Akt/mTOR pathway

### Brent Reed, Ph.D., Associate Professor

-Functions of GLUT1CBP (GIPC), a myosin VI adapter protein

### Lucy C. Robinson, Ph.D., Associate Professor

-Control of cell growth and division, protein phosphorylation, vesicular trafficking

### Gulshan Sunavala, Ph.D., Research Associate Professor

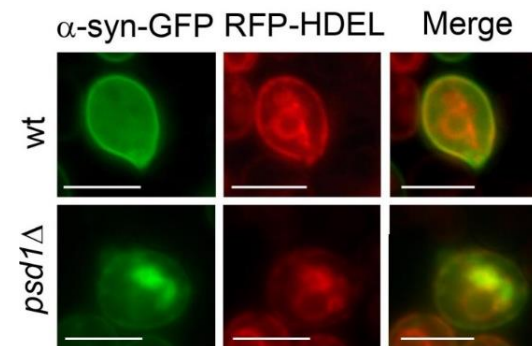
- Genotoxin-mediated DNA damage and repair, and salivary function

### Kelly Tatchell, Ph.D., Professor

-Type 1 protein phosphatase (PP1) in the yeast *Saccharomyces cerevisiae*

### Xiuping Yu, Ph.D., Associate Professor

-Elucidating the mechanism by which prostate cancer becomes resistant to androgen deprivation therapy



Yeast model of Parkinson's disease (PD). The RFP-HDEL protein is a marker for the endoplasmic reticulum. The PD protein alpha-synuclein ( $\alpha$ -syn-GFP) accumulates in the endoplasmic reticulum in *psd1* $\Delta$  cells that are deficient in phosphatidylethanolamine (PE). PE is required for the proper trafficking of  $\alpha$ -syn.



## Admission Requirements

Students entering graduate study in the Department of Biochemistry and Molecular Biology at LSUHS must have completed an undergraduate program with a cumulative grade point average of 3.0 or better on a 4.0 system. Undergraduate courses should include at least one year of general biology or biological science, one year of calculus, two years of chemistry (including one year of organic chemistry), and one year of physics. GRE is optional for applicants with Bachelor's degree from an accredited US institution but mandatory for international students. A composite score of 300 for the verbal and quantitative parts of GRE is required. Foreign students must also score at least 100 on the Test of English as a Foreign Language (TOEFL) examination. Interested students should complete the Preliminary Application Form on our departmental website. To be considered for an interview, the Preliminary Application Form, three letters of reference with rating forms, unofficial copies of college transcripts, and GRE & TOEFL (if applicable) score sheets must be received in the Department by March 28.