RATIONALE FOR THE DESIGN OF A SCIENCE WING

Designing a science lab that comfortably allows for the delivery of both practical and theoretical components is key. Each lab must be of adequate size plus, and flexible to allow hands on experimentation, group involvement of students, and individual desks for both lecture note taking and privacy.

–

Spaces must allow room to draw and diagram, carry out experiments, and 'force' the learning of science at a higher level. The science lab is, first and foremost, a place for experiments. Teachers must have flexibility to demonstrate to their students, and students must be able to carry out their work in comfort and safety. Pragmatically, the students must be able to immerse themselves in the possibility of a career in the future in science.

The space must also be flexible to provide opportunities for both solo practical experiments and provision for collaborative group work. Thus, the laboratory will allow practical science to take the lead in the delivery of the curriculum.

As we said before, we need separate labs for each of the sciences, all of which lead to excellence in a allied health/premed curriculum. One way of providing safety and efficiency to the system is to have a central preparation room where those things which are shared by two or more labs can be stored, cleared and organized. By freeing up space in this manner, safety ventilation and equipment can be built into a shared efficient facility and the supplies and equipment managed by fewer employees. Decluttering and increasing storage can increase the science learning space to some extent as well.

Trying to rotate teachers and subjects into single lab spaces is both counterproductive, inefficient and lacking in sense. Teachers need their own space to prepare lab work, obtain supplies and disposables along with equipment beforehand of a class session, and then time to clean up and organize everything at the end without clashing with other teachers wanting and needing to prepare their lessons.

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LABORATORY PARTNERSHIP OPPORTUNITIES

A wise and sage philosopher of olden days once said, and I paraphrase, "What's the big deal of investing a mere $2,000,000 on a ONE TIME BASIS to merge with the millions and trillions of dollars pledged, used and often wasted by our governments and public systems? The more our taxes are spent by those government systems who have no personal involvement in our families and community, the more is lost among trivial and even improper expenses.

HOWEVER, our students in Galveston have the unique opportunity currently, AND ONLY AT THIS TIME, to design and build an advanced science wing and teaching/learning system to lead our schools and our community in the development of higher education. We can attract educated professionals to our Island. This exciting new program will offer their children and families unusual and unique opportunities to develop and become better trained and educated than what was available to their parents and grandparents.

We can now offer pathways to certification and rigorous coursework to begin our students on the path to many Health Sciences and Science schooling and Professions. We even have a pipeline to formal Medical School education. To realize this educational goal, however, requires that we Galvestonians and Texans make it happen.

In addition to rapid enrollment in these courses, the District has recognized early growth and potential by contributing monies and support in the acquisition of a second synthetic anatomic dummy called "Earl". It teaches physiology in addition to anatomy and has the commitment of a second lab in the construction of the New Ball High. Since that building is completed, now is the only time.

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CONSIDERATION OF SPONSORSHIP

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Since each lab is a separate need…
It becomes a separate ask.
Of course, you may choose to sponsor as many or as few labs as you see fit.
Every one of the nineteen labs, in combination, adds up to the Ball High School Allied Health Sciences and Science Pathways.

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GALVESTON INDEPENDENT SCHOOL DISTRICT

THE NEW BALL HIGH SCHOOL

HEALTH SCIENCES AND SCIENCES PATHWAYS

PROPOSED BUDGET

TO EQUIP

17 NEW LABORATORIES AND 2 REDESIGNED LABS

SUMMARY OF NEEDS/ TOOLS/ EQUIPMENT REQUIRED

It should be noted that several costs are shared and absorbed by mutually shared classrooms and laboratories which are planned into the design of the science wing.

Written agreements now exist among The University of Texas Medical Branch, Galveston College (with a newly constructed Health Sciences building and a certified four- year school of Nursing), and the administration and faculty at GISD

BUDGET and DONATION AMOUNT REQUESTED

Our budget of nearly $2,000,000 is attached.

Included is our success to date to collect about $350,000 towards that goal.

We are requesting any possible assistance to our total projected need to complete and establish the Pathways. A gift of any size would be most appreciated and a valuable offering to the community. Of course, it will be recognized in print.

A larger gift could result in a named area of the science department, recognizing your generosity and involvement in education in Galveston Texas.

1. Equipment: We have had equipment donations in the past and we put a sticker or tag on each item to recognize the donor. We are willing to continue that practice if requested.
   Sample Donation Levels might include:
   a. $250: Dissection Kits
   b. $500: Blood typing and diagnostic kits
   c. $2000: Microscope
   d. $5000: Medical simulation equipment
   e. $25000- $50000: Naming rights to a Classroom or Special Lab.

2. Classroom: If someone wants to sponsor an individual classroom (Chemistry, Physics, Health Science, etc.) there would be a $25,000 minimum donation required.

3. Special Lab: For the Cell Culture Lab, Synthetic Cadaver Lab, or other specialized student instructional space, a $50,000 minimum donation would be expected. Naming rights would be guaranteed for at least ten years.

SUMMARY OF BHS LAB NEEDS TABLE

	A	B	C	D	E	F	G	H
1	LABORATORY	PER LAB NEEDS	20% HANDLING	TOTAL COST PER LAB	NO. OF LABS	TOTAL $$ REQUIRED	MONIES RAISED INITIALLY	CURRENT REQUEST
2								
3	PHYSICS LAB	$14,603.10	$2,920.62	$17,523.72	2	$35,047.44		**$35,047.44**
4								
5	BIOLOGY LAB	$26,355.31	$5,271.06	$31,626.37	5	$158,131.85		$158,131.85
6	MICROBIOLOGY LAB	$146,109.40	$29, 221.80	$175,331.20	1	$175,331.20		$175,331.20
7	CELL CULTURE LAB CURRENTLY IN OPERATION			$172,571.09	1	$172,571.09	($117,742.66)	$54,828.43
8								
9	CHEMISTRY LABS	$26,437.42	$5,287.48	$31,724.90	4	$126,899.60		$126,899.68
10								
11	HEALTH SCIENCE LABS	$126,037.40	$25,207.40	$151,244.80	2	$302,489.60		$302,489.60
12								
13	CURRENT SYNDAVER GROSS LAB	$387,957.00		$387,957.00	1	$387,957.00	($166,000.00)	$221,957.00
14	ANATOMY II LAB	$111,719.00	$22,343.80	$134,062.80	1	$134,062.80		$134,062.80
15								
16	FORENSIC LAB	$11,005.95	$2,201.19	$13, 707.14	1	$13,707.14		$13,707.14
17								
18	AQUATICS/ ENVIRONMENTAL LABS	$21,821.78	$4,364.36	$26,186.14	1	$26,186.14		$26,186.14
19								
20								
21	FURNITURE UNIQUE TO	$281,993.58	$56,398.72	$338,392.30		$338,392.30		$338,392.30
22	LAB TEACHING/LEARNING							
23	HEALTH LABS							
24	EMERGENCY ROOM SETUP							
25	HOSPITAL ROOM SETUP							
26	FORENSICS, ETC.							
27								
28	TO REPLACE NON-TRANSFERABLES*					$66,451.13		$66,451.13
29	TOTAL FOR 19 LABS					$1,937,227.29	($283,742.66)	$1,653,484.63
30								
31	*Money raised originally raised but not							
32	transferable from old account.							

Proposed Name for Facility

Board approval will be required for the naming or renaming of all District facilities including schools or distinct portions thereof, such as a library or auditorium.

This form will be used by person(s) proposing names for new or existing facilities or distinct portions of facilities.

Section A: Identify the facility or portion of the facility to be named.

Type of Facility to be Named:

- ❑ Elementary, Middle, or HS Campus
- ❑ Athletic Facility
- ❑ District-wide Facility
- ❑ Portion of Existing Facility

Current name of facility (if applicable):

Name for Consideration:

☐ Trustee (Name)_____, has been notified of the name change and is in consensus with thechange.

Section B: Include a statement containing the following information:

- Biographical or Historical Data,
- Nominee's significant contribution(s) or event's or geography's significance,
- Impact statement explaining why a facility, school, or portion thereof should be named accordingly.

Section C: Contact information for person/family being recommended:

PERMISSION FROM FAMILY AND/OR NOMINEE

Name

Address:

Phone #

Email address

Relationship

Please provide a photograph of nominee if available.

Section D: Contact information for person(s) making the recommendation:

Submitted by
(please print name)

Address Email

_____

Phone #

Signature Date

Forms should be submitted prior to January 1 for naming considerations going into effect the following school year (September 1). Nominations will only be accepted with completed exhibits.

Completed applications may be sent to the following address:

Support Center Galveston ISD
RE: Superintendent
3904 Ave T
Galveston, TX 77550

This exhibit was last amended on January 16, 2024.

BIOTECH CELL LAB IMPORTANCE

To quote a retired high school science teacher when she was shown plans for the Biotech Cell Lab at Ball High School: “That Ball High School students would be given the opportunity to grow and nourish their own cell lines is nothing less than astonishing. I so envy those students given this amazing opportunity." Cell growth and cell specialization are the basic building blocks of life. Nothing is more fundamental and there can be no more legitimate scientific inquiry.

Students will be given cell lines of plant cells (from, for example, a carrot, a grape, or tomato), animal cells (from, for example, a hamster, a rabbit, or mouse), harmless bacterial cells, or fungus cells, (such as yeasts) that were begun elsewhere. They will be afforded thorough training and supervision and given access to all the sophisticated equipment used in a modern scientific laboratory necessary to keep the cell line healthy and reproducing.

The focus from day one will be providing a hands-on experience for every student. The emphasis, from day one, will be individual student responsibility for his/her own cell line. Acquiring the skill set to keep a cell line alive and growing, though obviously of critical importance, is simply the first step for students. Additional challenges in a second and third step have enormous learning, as well as motivational and inspirational potential.

Step two will focus on manipulation, employing cells from the cell line as principal subjects in experiments.
Students will learn that changes in the environment, such as the reduction or total elimination of oxygen, exposure to chemical substances, such as vitamins and minerals, can be of enormous influence on cell vitality and growth.

Step three will be applying what was learned from step two to better understand human biomedical applications. By way of example, one's understanding of heart failure and what may be done from a cellular standpoint to repair damaged heart muscle, is likely to be vastly different after a student is a cell line veteran. As we have proclaimed repeatedly, learning in a real scientific laboratory is vastly different from lecture and textbook learning. You may recall from your own high school science class viewing various types of cells under a microscope. A new experience for sure, but of very limited long-term impact.

Now imagine the thrill of returning from Thanksgiving holiday break to discover that the cells you have been growing in your grape cell line have tripled in quantity while the yeast cell exposed to a simple sugar has, in contrast to the yeast cells, been exposed to a non-fermentable sugar reproduced over and over again.

Further imagine the skills you are learning in this high school laboratory will allow you to mentor in a medical college course on their campus.

These skills, taught in the biology labs, offer at least three advantages to the motivated student:

1. Plenty of career options from clinical roles, like physical therapy to administrative positions like health management.
2. Many health science careers are experiencing rapid growth due to an aging population and increased focus on wellness, leading to job stability and attractive salaries.
3. Careers in health science often require specific degrees and certification. Pathways are available for students with biology backgrounds. It allows them to enter the field at multiple levels beginning in lower-level jobs in laboratories to higher-level ones such as cell biology, these careers are evident in a very broad spectrum of professionals and integral to every aspect of community well-being, leveraging their expertise and specialties to ensure individual receive timely and optimal care. As a result, these experts to fulfilling opportunities in which all biology skills and knowledge that we're talking about lead to careers such as administrator, a public health specialist, therapists and technicians. A foot in the door, by design, leads to a strong job. The health sciences in general provide stability and versatility. It allows graduates to pursue careers in patient care, health, care, administration, medical research, and beyond whether you're looking to enter the workforce immediately or plan for a further education degree. You will be equipped with knowledge and skills to make a meaningful impact in the field.

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IMPORTANCE OF THE SYNDAVER GROSS ANATOMY LABS

In our Biomedical Sciences Community, Ball High School has opened a gross anatomy laboratory with a SynDaver Human Cadaver, featuring hands-on, real world learning activities.

This cadaver models the human body, utilizing an education-grade synthetic human cadaver complete with all bones, joints, muscles, organs, and tendons in normal human anatomy. It is made from materials that mimic the mechanical, thermal, and physiochemical properties of live tissue. It enhances the student-centered experience to both teach and motivate students in the biological sciences with a body that they would not experience through a textbook or computer. Further, it is a first in public high school education in Texas and perhaps the United States.

In addition, to the human cadaver we have now added a virtual augmented imagination/virtual reality synthetic body to teach physiology in addition to anatomy. This is always exciting to the students because it stimulates learning by creating emergency medical simulations.

The additions we are requesting upgrade the initial lab with trend-setting educational tools and equipment. Not only to be available for learning, this also offers pathways to certification and rigorous courses for those who would desire to gain higher education in the Health Sciences, including medical school. We are asking for support to upgrade the original lab and to purchase another SynDaver synthetic anatomic cadaver for the second lab to increase our capacity to teach this exciting course. Both requests are detailed in the following pages.

These lab opportunities will increase college readiness, reduce barriers to college access and align programs to regional work and career needs. Thus, they also enhance economic development in our community, which is no small achievement.

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ANATOMY LABORATORY TWO

1. Description of benefits provided.
   This project will benefit College of Health students and faculty by providing:
   - Access to technology found in flagship universities, medical schools, and research laboratories that allows evidence-based practices to be applied and defined.
   - High-impact learning experiences that translate into demonstrable clinical and research knowledge, skills, and abilities.

2. Description of how success/impact will be measured.
   - Assessment of course usage through syllabi analysis
   - Assessment of student knowledge through course assignments and examinations.
   - Implementing assessment rubrics for the application of evidence-based practices in clinical skills.
   - Tracking of UWF students accepted into Medical, Dental, Optometry, Pharmacy, and Physician Assistant programs.

3. Detailed description of resources required including hardware and software requirements and personnel costs (faculty compensation is not an allowed cost).

   A summary of the hardware expenses is provided here:

Item	Technology Fee Funds	
SynDaver Synthetic Human Anatomy Model	(x 3) @ $60,000 =	$180,000
Onsite Install and Training	(x 3) @ $ 2,500 =	$ 7,500
Shipping		$ 1,800
Project Total		$189,300

Each SynDaver Synthetic Human Anatomy Model includes a tank table and storage chemicals.

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IMPORTANCE OF THE PHYSICS LABORATORIES

Two physics labs are planned for the Science Wing at the new Ball High School. Opportunities to experience rigorous coursework at both the Honors and A/P levels will prepare them to enter college and will position them to acquire college credits through the Advanced Placement program. ANY STUDENT WHO HAS THE DESIRE TO MEET THE DEMANDS OF CHALLENGING COURSEWORK IS ELIGIBLE TO ENROLL IN THESE HONORS AND A/P COURSES.

These modern physics labs are to be equipped for hands on investigative experience in the concepts of natural, physical, and chemical phenomena. A course in Integrative Physics and Chemistry is required introduction to these labs.

The labs concentrate on the interactions between matter and energy and the organization of observed phenomena into useful and meaningful relationships. For example, equipment to supply solar, wind, and turbine energy give the students the ability to create and modify lighting, HVAC and further experimentation of their own design. The study of light, reflection, refraction and magnification will be available through a series of adjustable lenses, prisms and mirrors. A heat source will assist in the study of thermal energy, convection, radiation, conduction and the like.

The rooms are adaptable to teaching the physics of light and sound; equipment to teach energy transfer, insulation, harmonies and the like are included in this pian. Many other physical properties are taught through hands on and student involvement in design and creativity in the completion of experimentation as well. The rooms are designed with appropriate input of electricity and appropriate equipment in a high end "college" level course instruction and success.

What kind of jobs can students in physics obtain? Common job titles include Accelerator Operator, Applications Engineer, Data Analyst, Design Engineer, Physics Teacher, IT Consultant, and Lab Technician among others. . While not always necessary for entry-level positions, a bachelor's degree can be your step in the Pathway to open more advanced roles, leadership positions, or work in specialized fields like biotech technology or forensic science. Degrees alone do not get your jobs. Skills and experience get your jobs. When you have a background in physics, if you don’t plan to go graduate school, you’re going to have to advertise the skills you learned on the Pathways in high school. These can lead to many different jobs or suggested careers.

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IMPORTANCE OF THE BIOLOGY LABORATORIES

Biology is the foundation of all premedical and living science study. Our science wing has five separate laboratories to accommodate the classes and needs of our Biomedical and Technology Pathway. Such a curriculum will shine the most favorable light on Ball High and the BIOMED program. It has now been blessed and conferred association with the medical school, UTM B, in Galveston. They are a committed partner with a FORMAL agreement to work with Galveston Independent School District. Their cooperation and collaboration, along with the medical/ biology department at Galveston College, will achieve the highest quality of instructors and instruction for our required core of biology and medical science curriculum.

In a word, a Ball High graduate who earns the right to have a career in Medical Technology, Nursing, or as a Physician is every bit as important to create an environment where changing lives for the better is the primary business of the pathway at Ball.

This academically rigorous tract of learning will contribute immensely to an impression of a favorable public education in Galveston. Overall, you can agree that the study of the medical sciences is the most demanding of all studies, and we will now have the means to excel in these areas for our students. This is the unique offering at Ball High, only with your support .

To quote a retired high school science teacher when she was shown these plans for Ball High School, “That high school students could be given the opportunity to grow and nourish their own cell lines is nothing less than astonishing. I so envy those students given this amazing opportunity".

These are the building blocks of life and there can be no more fundamental nor legitimate scientific inquiry. Ball students have that opportunity now.

The focus from day #1 will be hands on experience for EVERY student. They will have their own cell lines and given access to the sophisticated equipment of an advanced (college) laboratory to keep their cell lines healthy and producing.

They will learn the manipulation and application of cell biological lines to biomedical applications. For example, damaged heart muscle requires understanding of basic muscle biology, heart failure of that muscular organ in the living body, and what may be done to heal and repair damaged heart muscle. As we must emphasize, learning in a real scientific laboratory is different and involving over learning from a textbook and lecture alone.

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IMPORTANCE OF THE MICROBIOLOGY LABORATORY

If you have a passion for scientific research and understanding, the microscopic world a degree in microbiology can open a world of exciting career opportunities. Microbiology is multidisciplinary in that it combines biology, chemistry, and medicine to study microorganisms such as bacteria, viruses, fungi, etc.

Depending on the career path that a student chooses, he may also need a diploma or degree in microbiology, chemistry, or biology to qualify for employment opportunities. With this Pathway background, he may seek improvement of his science skills. Both are available and possible, and students who gain relevant experience in this laboratory become more attractive candidates for roles in their chosen microbiology field.
If as a research laboratory technician, for example, he can become a quality control analyst or a clinical microbiologist or an immunologist in a medical school and health sciences setting. Microbiologists are needed for environmental laboratories, testing foods and dairy, the relevant DNA technology, research science, and the like. It often requires at least a bachelor's in the medical lab sciences, but it allows the foot in the door to advanced career opportunities as well.

Microbiologists typically work in laboratories, offices, and industrial or academic settings. Some travel to collect samples from the field, which may require working outdoors in a variety of settings. Other microbiologists, who work with more dangerous organisms follow safety procedures to avoid exposure. In Galveston, the National Laboratory for environmental research at UTMB is one of only two such institutes in the United States. Working in microbiology at Ball High school can lead one down the pathway to the door of the National Lab as well as other labs at UTMB. Students will be prepared by their laboratory experience in microbiology to enter training and careers only available to persons with this background.

THE ASK

For a total gift of at least $50,000, it is possible to sponsor a laboratory, and have it named after you or the person/institution of your choice.

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A table listing each piece of equipment, its cost, and a short description of its usefulness in the classroom and laboratory along with an illustration of each piece is included in pages to follow this note.

CONSIDERATION OF SPONSORSHIP

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IMPORTANCE OF THE CHEMISTRY LABORATORIES

Four chemistry classroom/laboratories are under construction at the new Ball High School in the Science Wing. Chemistry is both basic and integrative to the study of biomedical and technical sciences, as one uses chemistry together with biology and physics to understand and recall the basis of this study. This grouping of studies is the underlying principle of "clustering" where the science programs are grouped together in our curriculum because many of the people in them share similar interests and strengths. The pathway of study is flexible, overlapping in nature, and allows students to change as new knowledge and experience is acquired. They help provide a focus and guidelines for future planning at the high school level and, most importantly, to see into the future of their career choices. That may be the single most important innovation of the new science curriculum made possible by the variety and integration of advanced scientific courses and experience.

Our chemistry labs will feature the latest and greatest teaching material to give our students an understanding of the basic makeup of scientific elements, what those elements are and can do in the real world of science. This will teach students how they can work with the elements in learning and experimenting with the combined efforts that they have available to them in the biology and physics labs.

Isolating facts, as opposed to fully integrating them into scientific understanding with the facilities of our other sciences at Ball High, create a unique and motivating environment where the student becomes at one with his environment through knowledge. The motivation is to see the future in which that student can imagine a career and, most importantly, his success!

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THE IMPORTANCE OF THE HEALTH SCIENCES

Professionals in the field of health sciences are integral to every aspect of community well-being, leveraging their expertise in numerous and varied specialties to ensure that individuals receive timely and optimal care. As a result, these experts discover. positions, research opportunities, and public health initiatives everywhere they seek them.

According to the Bureau of Labor Statistics, overall employment in the healthcare occupations is projected to grow much faster than the average for all occupations in the next decade. About 1.9 million openings are projected each year, on average, in these occupations. With such a strong job outlook , degrees in health science provide both stability and versatility to a student willing to train. It allows graduates to pursue careers in patient care, healthcare administration, medical research, and beyond.

Whether you're looking to enter the workforce immediately out of high school or planning to further your education, a health science degree equips you with the knowledge and skills to make a meaningful impact in the field. Careers in the health sciences often require specific degrees or certifications, some available with Pathways. Pathways are available for various educational backgrounds, allowing individuals to enter the field at multiple levels. While the degree from high school alone offers career opportunities, many graduates choose to further education pursuing advanced degree these include a master of healthcare administration (MHA), the Master of Science and Health Informatics, the Master of Science in Clinical Research, Master of Public Health (MPH), Master of Physical Therapy (PT) or Doctor of Physical Therapy These degrees are representative of other paths in executive leadership and management positions in healthcare.

BSHS degrees can also consider certificate programs and specialized areas such as medical coding clinic, research, coordination, healthcare management, or healthcare quality improvement. These are just some of the career paths and continuing educational opportunities that could be available to the student who chooses to learn at our health care. it is clearly a launching pad for further educational presents. Once the door is open, countless opportunities allow you to follow your passion and contribute to the health and well-being of individuals and communities.

The health sciences laboratory requires a considerable variety of equipment, especially when you consider the number of career pathways possible.

*Equipment has been carefully documented by our science faculty and, and the cost is clear from 2024/2025 catalogs. It is certainly reasonable to consider adding 25% to that number in to anticipate future arise in cost and maintenance of the laboratories.

THE ASK

We ask you to consider sponsoring one or both Health Sciences Labs and equipment as listed. With a gift of at least $100,000, sponsorship of a classroom or laboratory would allow you to name that space as you desire.

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THE IMPORTANCE OF LEARNING IN A FORENSIC SCIENCE LABORATORY

What high school student would want to work and learn in a forensic science laboratory? The short answer is everyone in high school wants to be Colombo or a CSI detective. There are almost unlimited. Pathways for a student of forensic sciences to have training and a career that is both exciting, profitable, and challenging. These are the detectives of our world, those who take subtle clues and use them to solve problems on multiple levels.

For example: by illustration, openings in forensic science technology are projected to grow 14% nationally in private investigation, and in detective work 5% nationally. In information security. Growth is estimated at an astonishing 33% nationally according to the Bureau of Labor Statistics.

Where do forensic scientists work? Depending on rank and responsibilities, they can be found working in laboratories or at a crime scene, private investigators in armored vehicles or insurance offices, and information security analysts behind screens and in boardrooms of private and public administrative offices.

They are scientists, computer And information technology specialists, nurses, artists, accountants, and many other types of professionals who use their primary areas of expertise to pursue careers in forensic science.

As an example, a forensic ballistics expert is a detective in many crimes.
He is knowledgeable about firearms and ammunition, but more importantly about evidence that can be left on a crime scene, bodies, and objects by their usage.

A forensic autopsy technician can be a partner with those who study in our high school Gross Anatomy lab. Forensic biologists examine bodily fluids, bones, hair, insects, plants, and animals; forensic chemists use scientific methods to investigate physical evidence by analyzing that which is collected from various crime scenes, even giving testimony based on laboratory test results. There are literally dozens of forensic professionals in differing areas of Technology, Biology, Microbiology, Chemistry, Engineering, Environmental, etymology, and so many more areas.

The scientific investigators are among the sexiest of scientists, and the Pathway from our forensic science laboratory into so many careers is nearly limitless.

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IMPORTANCE OF THE AQUATICS LABORATORIES
ENVIRONMENTAL SCIENCES

In our two aquatics laboratories, we conduct studies to examine the relationships between environmental factors and the structure and function of aquatic invertebrates and vertebrate communities. We work to develop strategies that minimize environmental influences of land use practices by examining the effects of anthropogenic and natural disturbances on aquatic ecosystems. We also examine biogeography, taxonomy. Students learn about the environment as well as developing social skills and relaxing activity knowledge which is bot attractive and beneficial to anyone living on the Gulf Coast. Learning with actual testing material for water content and quality fish diagnostics and parasitology and disease diagnostics is basic to these labs. and habitat preference of common and rare aquatic organisms in springs and rivers. We work closely with local, state, federal and non-profit organizations to assist them in creating management strategies for aquatic projects.

That's a lot of words to say that we are involved in understanding water chemistry to support fisheries and agriculture, water clearing treatments, parasitology and bacterial invasion and habitats in the waters surrounding our land.

Studying the planet's oceanic and freshwater environments teaches our students how to relate to water, living species in or near water or taking place in water and, by necessity, other environmental science in and around our planet.

Many scientists today consider this study to be the MOST IMPORTANT scientific inquiry of all. They overwhelmingly support the manmade problems in our environment as critical to the continuation of human life as we know it into the next millennium and beyond. This may be our most important science lab to support.

As an aside, it becomes attractive to teaching the sciences because the students also learn hands on about fish, fishing activity, and size limits for catching in season as a means to understanding and controlling our aquatic environment. In Galveston, association with the Texas A & M Sea Turtle facility is a part of the program as well.

The main campus of Texas A and M University Marine Sciences Departments are fortuitously situated on Pelican Island. This location is within the City of Galveston and, conveniently, it accrues to our benefit to cooperate and consult with the GISD Aquatics and Environmental Sciences as we expand the GISD Health Sciences and Biotechnical Pathways at Ball High School.

Ongoing discussions and agreement continue currently.

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