



Student Organizations

Nu Beta Chapter of Tri Beta National Biological Honor Society

Beta Beta Beta emphasizes a three-fold program: stimulation of scholarship, dissemination of scientific knowledge and promotion of biological research. UST's chapter hosts a variety of invited lectures by scientists from the Texas Medical Center and research labs from around the U.S. Past talks have focused on neuroscience, cancer research, behavioral disorders and graduate programs.

In addition, members participate in at least one major volunteer event each semester, ranging from beach cleanups and tree planting to organizing medical supplies at Medical Bridges, volunteering at San Jose Clinic's annual Art for Heart fundraiser and participating at the Houston Zoo's annual Zoo Boo. Each year UST Beta Beta members attend and present their research at the regional and national Tri-Beta Meetings.

Biology Career Opportunities

UST graduates have an excellent admittance record into state medical, dental and veterinary programs. Currently UST alumni are attending every medical and veterinary school in Texas.

Biology alumni are enrolled in graduate programs for neuroscience, biotechnology, biochemistry, bioinformatics and a variety of other disciplines. Many alumni are employed in the Texas Medical Center, serving the biotech, research and medical communities of Houston.

Choose UST

For information on admission to the University of St. Thomas, contact the Office of Undergraduate Admissions at 713-525-3500 or visit our website at www.stthom.edu/admissions.

If you are interested in learning more about biology and bioinformatics, contact:

Dr. Rosie Rosell, Chair
rrosell@stthom.edu
713-525-3166

www.stthom.edu/biology

The University

The University of St. Thomas is truly a Shining Star in the heart of Houston.

- **The Newman Guide to Choosing a Catholic College:** Among 22 U.S. Catholic colleges and universities recommended by the Cardinal Newman Society, and among 28 such institutions worldwide
- **Range of choices:** Degree programs focused on business, sciences, liberal arts and education at the undergraduate and graduate levels
- **Specialty areas:** High acceptance rate in medical and dental schools for Pre-Med and Pre-Dental students
- **Personal instruction:** Average class size of 17
- **Personal approach:** Faculty know students by name
- **Nationally ranked:** Ranked 33rd among universities offering master's degrees in the Western region by the *U.S. News & World Report* 2014 edition of "America's Best Colleges"
- **Nationally ranked:** Ranked by *The Princeton Review* as Best in the West in its Best Colleges: Region by Region online profile found at www.princetonreview.com
- **Study abroad:** The University of St. Thomas periodically ranks among the top 20% of U.S. universities whose students study abroad
- **Catholic tradition:** Houston's only Catholic university, founded by the Basilian Fathers in 1947



UNIVERSITY
ST. THOMAS

Educating Leaders of Faith and Character

3800 Montrose Blvd.
Houston, TX 77006
www.stthom.edu

The University of St. Thomas is a private institution committed to the liberal arts and to the religious, ethical and intellectual tradition of Catholic higher education.

Biology and Bioinformatics



UNIVERSITY
ST. THOMAS

Educating Leaders of Faith and Character



College Initiative Begins Here

Biology and Bioinformatics

This is the era of biology — characterized by rapid and amazing advances in every aspect of this dynamic field. The vital and exciting life sciences curriculum at University of St. Thomas emphasizes the full range of studies from the biology of ecosystems and organisms to cells and molecules within an evolutionary context. Students apply the scientific method to investigate biological phenomena while developing critical thinking, oral communication, writing and computational skills. Students also develop an ethical approach to the practice of science. The major program is designed to prepare students for graduate and professional schools and for entry-level biologist positions. Students successfully completing any biology major master the basic subject areas of biology and important biological concepts.

Bioinformatics is a fast-growing and newly emerging field in the life sciences that uses mathematics and computer science applications to analyze and store the vast amounts of information produced from the various genome, proteome and other “omics” projects. In a unique combination, the major, housed in the Biology Department, comprises a concentration of courses in biology, chemistry, mathematics, computer science and physics. Majors become solidly grounded in the biologically relevant areas of genetics, molecular and cell biology and are trained in both the theoretical and practical aspects underlying data manipulation. Bioinformatics graduates are prepared to enter professional or graduate programs in bioinformatics, as well as for entry-level positions in biotechnology firms, genome projects or the pharmaceutical industry.



“I had a very positive experience as a biology student at St. Thomas. My biology professors were accessible and approachable. The biology curriculum, especially cell biology, helped me gain a significant head start, in medical school, making the course load much easier to bear. Conducting research as a freshman, I was able to form a strong relationship with my faculty mentor and learn about various facets of genetics and molecular biology that many students do not learn until their junior and senior years.

Attending St. Thomas allowed me to combine my love for science and my love for God.”

Jonathan Zalamea, class of 2012

Degree Programs

- B.A. and minor in Biology
- B.S. in Biology
- B.S. in Bioinformatics

The biology faculty believe that students achieve a deep understanding of biological concepts only by “doing biology.” Thus the application of knowledge through classroom activities, research and laboratory experiences plays an extremely important role in all the degree programs. Students are encouraged to apply their knowledge through engaging in research with biology faculty members. Students use modern techniques to address timely and important research questions. They develop maturity, self-confidence and independent thinking and emerge from the experience as critical thinkers, scientific writers and confident speakers. The department has an endowment that supports faculty and student research through the Cullen Trust Chair in Biology. Also, students are encouraged to seek funding for their research from sources both inside and outside the University. The majority of our graduates have presented the results of their studies not only at the UST Research Symposium held each April but also at regional and national meetings.



Examples of undergraduate research topics in biology:

- XRCC4 and XLF interact with TRF1 and TRF2 at telomeres
- SNP-Mapping of trembler mutation in *C. elegans*
- Isolation and identification of naturally occurring multi-drug resistant bacterial isolates from fish guts
- A purification plan for predicted *E. coli* membrane proteins YecN and YidH
- Investigation of the cytotoxic mechanism of poly-glutamine aggregates
- Determining the lethal concentration of toluene on *Drosophila melanogaster* and the resulting morphological effects of toluene exposure to fly offspring

“I would not be where I am today without the mentors and opportunities I had at University of St. Thomas. The Biology Department faculty members are always ready to help students with research opportunities. As a freshman I was able to join a research group and started my very own project with another biology student. After just two years, my research partner and I were awarded the President’s Prize in undergraduate research at the Annual Entomological Society of America meeting.

“My St. Thomas education has enabled me to excel in my classes at University of Texas Medical School at Houston. My upper level UST biology classes prepared me for classes like Biochemistry in medical school. I know the small class size at UST gave me a personal education that I could not have received anywhere.”

Adeel Faruki, class of 2012