



Biology

Department of Biology
COLLEGE OF ARTS AND SCIENCES

KEY STRENGTHS

- Academically and professionally acclaimed professors who are highly regarded within their specialties, receive numerous research grants, and produce modern research
- Technologically-advanced facilities
- Variety of off-campus field experience opportunities, nationally and internationally
- Representation among some of the university's top academic performers

POINTS OF EXCELLENCE

- A hundred percent of ACU biology students who apply to graduate schools gain acceptance.
- About 80 percent of ACU biology students who apply to medical, dental or other special professional schools gain acceptance, which is well above the national average.
- Fifty percent of all biology graduates have continued their education to the doctoral level.
- ACU ranked 64th in the nation (first per capita in Texas) out of 914 category II universities (those dealing predominantly with undergraduates) in the number of students who went on to earn doctorates, according to the Franklin and Marshall Report.
- The department was invited by the Howard Hughes Medical Institute to participate in the 2007 Undergraduate Grants Competition. This invitation is extended to only 185 schools across the nation who have an established, proven record of sending graduate students on to medical school or to obtain Ph.D. degrees in biology, chemistry, physics and mathematics.
- Biology faculty members have consulted for various corporations, edited professional journals, have been recognized in Who's Who of American Education, and held offices and membership in numerous professional organizations such as the American Society for Microbiology, National Association of Advisors for Health Professions, National Association of Biology Teachers, and the American Association for the Advancement of Science.

DEGREES OFFERED

- Bachelor of Arts
- Bachelor of Science

MAJORS AVAILABLE

- Biology
- High School Certification Life Science (Grades 8-12)

CAREER OPPORTUNITIES

- Biological sciences
- Healthcare professions
- Pharmaceutical and scientific sales
- Pre-college biology teaching
- Research and university careers in the laboratory and field

STUDENT OPPORTUNITIES

Off-campus study and research opportunities

- A semester or summer of field study at the Au Sable Institute, with sites in Michigan and Washington state, considering Christian roles in environmental science.
- Big Bend National Park
- Florida Keys
- Friday Harbor Biological Laboratories, Washington state
- Opportunities through the ACU Study Abroad Program and the Coalition for Christian Colleges and Universities
- Roatan, Honduras

Medical Missions

- Guatemala
- Zambia

Summer research centers

- Baylor University Medical Center
- Friday Harbor Biological Laboratories
- Pepperdine University

Scholarships available, particularly for upper division majors

- Clark Stevens Scholarship
- J.R. Endsley Scholarship
- Wayne Jackson Scholarship
- ACT/SAT Academic Scholarship

Please consult with your admissions counselor for details on these and other scholarships available to you.

STUDENT SUCCESS

- Recent ACU biology students have attended medical or dental school at Baylor University, Texas A&M University, Texas Tech University, Tufts University (Boston), Case Western Reserve (Cleveland), Vanderbilt University (Nashville), University of Arkansas, University of Texas Southwestern, The University of Texas at Galveston and The University of Texas at San Antonio, University of North Texas, Southern Illinois University, University of Washington, Tulane University and others.
- Recent ACU biology students have attended graduate school at the University of North Texas, University of

Oregon, University of Florida (veterinary), University of Houston (optometry, law), The University of Tennessee, Texas A&M, Oklahoma State University and others.

- Of ACU biology graduates since 1990:
 - 39 percent are physicians, dentists or are currently attending medical or dental school.
 - 5 percent are Ph.D. scientists or are attending a graduate program that leads to a Ph.D.
 - 10 percent are employed as teachers.
 - 11 percent are employed in technological, environmental or sales jobs.
 - 15 percent are employed as medical technicians, physical therapists, pharmacists or other non-doctoral healthcare workers.

FACILITIES

The Biology Department lecture rooms feature Internet connections and video equipment. Laboratory rooms include high-quality microscopes (including research grade scopes), an ultracentrifuge, a polymerase chain reaction machine, gel electrophoresis equipment, a liquid scintillation counter, computerized autoclave, and computerized physiology recording stations. The ACU Natural History Collection is used extensively in the teaching program, a collection that has received the certificate of accreditation from the American Society of Mammologists.

DEMOGRAPHICS

Majors in the 2006-07 school year: 170

2006-07 graduates with jobs in their field or admitted into graduate/professional school within 12 months: 76 percent

DISTINGUISHED ALUMNI

Dr. Steven Hill, class of 1990; professor of anatomy, Tulane Medical School, New Orleans, La.

Dr. Steven Dallas, class of 1981; director, microbiology, Presbyterian Hospital, Charlotte, N.C.

Dr. Jerome Hall, class of 1978; Institute of Nautical Archaeology, San Diego, Calif.

RECENT GRADUATES

April Anderson, class of 2007; graduate school (marine biology), Texas A&M University at Corpus Christi, Corpus Christi, Texas.

Blake Bond, class of 2007; Texas A&M Health Science Center College of Medicine, College Station, Texas.

Dylan Carey, class of 2007; University of Texas Health Science Center in San Antonio, College of Dentistry, San Antonio, Texas.

Bethany Ferguson, class of 2007; Texas A&M University College of Veterinary Medicine, College Station, Texas.

Stephanie Maycock, class of 2007; Physician Assistant Program, Texas Tech Health Science Center, Lubbock, Texas.

FACULTY ACHIEVEMENTS

Junhui Bian, Ph.D. – Published: Tan, M., Bian, J., Guan, K. and Sun, Y. (2001) "p53CP is p51/p63, The Third Member of the p53 Gene Family: Partial Purification and Characterization." *Carcinogenesis* 22(2): 295-300.

Daniel K. Brannan, Ph.D. – Published: Brannan, Daniel K. (2006) "Biology of Microbes," in *Cosmetic Microbiology; A Practical Handbook*, 2nd edition. Informa Healthcare, Taylor and Francis Group, New York, N.Y. Chapter 2.

Patricia B. Hernandez, Ph.D. – Published: Beauford, Judith E. and Patricia Hernandez. (2005) "Identifying Mathematics in Elementary Science." *The Texas Science Teacher*, 2005: 36-424.

Thomas E. Lee, Ph.D. – Published: Lee, T. E. Jr., D. Alvarado-Serrano, R. N. Platt, and G. G. Goodwiler (2006). Report on a mammal survey of the Cosange River drainage, Ecuador. *Occasional Papers, Museum of Texas Tech University* 260:1-10.

James R. Nichols, Ph.D. – Published: Murphy, T., Pavlath, G., Wang, X., Boss, V., Abbott, K., Robida, A., Nichols, J., Xu, K., Ellington, M., and Loss, J. (2002) "Retroviral Vectors Applied to Gene Regulation Studies in G Protein Pathways: Part C, Effector Mechanisms." (Iyengar, R., and Hildebrandt, J. eds). *Methods in Enzymology*, 345: 539-51.

Thomas Pirtle, Ph.D. – Published: Pirtle, Thomas J. (2006). The contribution of the pleural type 12 interneurin to swim acceleration in *Clione limacina*. *Invertebrate Neuroscience*, 6:161-168.

FACULTY

Junhui Bian, Ph.D., *associate professor*; diploma in medicine, Peking Union Medical College, 1987; Ph.D., University of Maryland, 1993; molecular biologist, Parke-Davis Pharmaceuticals, 1995-97. Specialty – molecular biology.

Daniel K. Brannan, Ph.D., *professor*; B.S., University of New Mexico, 1975; M.S., Ohio State University, 1977; Ph.D., University of New Mexico, 1981; culture curator, Museum of Southwestern Biology, 1977-81; research microbiologist, Procter and Gamble, 1981-88. Specialty – microbiology, behavioral biology.

Patricia B. Hernández, Ph.D., *professor*; B.S., Texas A&M University at Corpus Christi, 1975; M.S., Corpus Christi State University, 1978; Ph.D., Texas Woman's University, 1989. Specialty – neurobiology.

Tom E. Lee, Ph.D., *professor*; B.S., Texas A&M University, 1984; M.S., Angelo State University, 1987; Ph.D., Texas A&M University, 1992; assistant professor, Pepperdine University, 1993-94. Specialty – ecology.

Charles W. Mattis, D.D.S., *associate professor*; B.S., ACU, 1981; D.D.S., The University of Texas at Austin, 1985. Specialty – anatomy.

James R. Nichols, Ph.D., *professor, chair*; B.S., ACU, 1966; M.S., University of Michigan, 1968; Ph.D., University of Missouri, 1973; visiting scientist, Department of Pharmacology, Emory University School of Medicine, 1998-99. Specialty – animal physiology.

Thomas Pirtle, Ph.D., *assistant professor*; B.S., M.S., ACU, 1990, 1992; Ph.D., Arizona State University, 2003. Specialty – physiology.

Roy E. Shake, professor emeritus; B.S., Eastern Illinois University, 1954; M.S., University of Wisconsin, 1956; arboretum botanist, University of Wisconsin-Madison, 1954-56. Specialty – botany.

Qiang Xu, Ph.D., *assistant professor*; B.S., M.S., Zhejiang University, China, 1996, 2003; Ph.D., Auburn University, 2007. Specialty – molecular biology.

FOR MORE INFORMATION

About the Department

James R. Nichols, Ph.D., *Chair*
Abilene Christian University
Department of Biology
477 Foster Science Building
ACU Box 27868, Abilene, Texas 79699-7868
325-674-2188 • nicholsj@acu.edu • www.acu.edu/biology

About ACU and Admissions

Abilene Christian University
Admissions Office
800-460-6228 • info@admissions.acu.edu • www.acu.edu