

Exploring the Natural Sciences

at St. Edward's

Scientists, scholars and students at St. Edward's University share the core belief that scientific inquiry is seldom a solitary pursuit by one-dimensional characters. Albert Einstein spoke eloquently about the invaluable nature of such curiosity: "The most beautiful thing we can experience is the mysterious. It is the source of all true art and science." The John Brooks Williams Natural Sciences and Technology Center embodies this powerful sense of discovery and the collaborative spirit that enriches it.

Beginning the Journey

The North Building

The center's North Building provides students and faculty with first-class facilities on par with the exceptional teaching and research that has long been a hallmark of the university's science programs. When the building was completed in 2006, professors and students alike immediately responded to the comfortable, innovative learning environment:

- Freshman enrollment in the natural sciences increased from 9.5 to 14.5 percent in the building's first year.
- The next year, St. Edward's received a \$260,000 grant from the W.M. Keck Foundation for undergraduate research on HIV drug resistance.
- Research conducted in the facility has received attention at national conferences, including those of the American Chemical Society and the American Society for Microbiology.

Completing the Vision

The Sciences and Technology Center–South Building

But the university's vision for the sciences and technology is not yet complete. When the Sciences and Technology Center–South Building opens, its expansive floor plans, state-of-the-art infrastructure and innovative laboratories complementing the "see-through science" in the North Building will engage all who teach and learn inside its walls. Professors will showcase today's best teaching practices in an academic space readily adaptable to tomorrow's emerging approaches. Students will solidify the personal values and professional talents they'll need for success in the sciences — problem solving, collaboration and creativity. Brick by brick, classroom by classroom, student by student, the John Brooks Williams Natural Sciences and Technology Center–South Building will inspire the curiosity of future generations of learners and leaders.

"The Sciences and Technology Center–South Building will encourage discovery and the collaborative spirit that enriches it."

— Professor of Computer Science and Chemistry and Coordinator of SCIE 2320
Richard Kopec

Sciences and Technology Center–South Building: First Look

Here's a preview of features in the South Building that will ensure active, hands-on learning:

Spacious, state-of-the-art home for Math, Computer Science and Physics students and faculty

Multi-use auditorium and exposition galleries for research presentations

Technology-rich classrooms, cozy study lounges and a tutoring lab

High-powered computing laboratories for projects in disciplines as diverse as robotics, environmental science and medicine

The John Brooks Williams Natural Sciences and Technology Center–**South Building**

Inspiring **Discovery** and **Collaboration**

Contact Us

University Advancement

512-233-1443 or 800-964-7833

advancement@stedwards.edu

Computer Science

Solving Human Problems with Integrated Technology

One tenet that sets the Computer Science program at St. Edward's apart is its focus on the human factor. Faculty members combine rigorous coursework with a strong liberal arts foundation rooted in communication, teamwork and moral reasoning. This powerful approach creates graduates who are prepared to enter the workforce as thoughtful problem-solvers.

Expanding opportunities for collaboration will be a key component of the Sciences and Technology Center–South Building. In fully equipped labs, students will conduct advanced research not only in the computing sciences but also in other areas. They may, for example:

- Explore robotics technologies that help surgeons perform intricate procedures or soldiers detect and disarm land mines.
- Study how quickly cells diffuse oxygen, which will improve the technology first responders use during natural disasters.

Students and faculty from all disciplines will work together in a facility of the highest caliber to pursue today's cutting-edge research — and explore tomorrow's emerging fields as they tackle many of the world's tough problems.

“Because we are a liberal arts university and not isolated within an engineering program, our students work well independently and in partnership with others. They have the chance to participate in collaborative technology development, not just computer training.”

— Professor of Computer Science
James McGuffee

Vital Resources for Computer Science in the Sciences and Technology Center–South Building

Advanced Computing Laboratory
Resources: This well-equipped classroom and work lab will feature servers, workstations, scanners, and equipment for digital technology and graphics.

Key Benefit: This space is ideal for fostering relationships with high-tech companies interested in pursuing and funding research opportunities.

Advanced Projects Dry Laboratory
Resources: This open space will support advanced research projects such as robotics, forensics, swarm technology, lasers and mechanics.

Key Benefit: Faculty and students will have the ability to modify the lab arrangement and resources for projects that require flexibility.



“In mathematics, there are a huge number of unsolved questions out there, and a lot of my job as a teacher is supporting my students as they search for answers. Whether or not they end up with a workable solution, they learn about themselves and their own values in the process.”

— Professor of Mathematics
Jean McKernie

Mathematics

The Common Language of the Sciences

No matter their discipline, students in the sciences speak a common language: mathematics. More than generating variables or performing calculations with a simple click of the mouse, students at St. Edward's explore this language through in-depth, hands-on research under the careful eye of faculty mentors.

The Sciences and Technology Center–South Building will enhance this journey by encouraging inquiry, creating connections among disciplines and redefining how students learn. As servers and software replace slide rules and calculators across the field, students will benefit from a state-of-the-art space dedicated to the study of applied and advanced mathematics. They may, for example:

- Study and build synthetic blood cells, called respirocytes, that help patients with diseases such as diabetes to absorb oxygen.
- Model the effect of global warming on fragile ecosystems.

As students complete such high-impact research, they ready themselves to address pressing global challenges in industry, business, health care, public service and academia with creativity, innovation and teamwork.

Learning Spaces for Advanced Mathematics in the Sciences and Technology Center–South Building

Computational Math Lab

Key Benefit: This lab will allow math students, without interruption, to run complex calculations that may take hours or days to complete.

Math Tutoring Lab

Key Benefit: Unlike the existing lab, this one will be a permanent space dedicated to Math majors; the friendly, informal environment will supplement upper-level learning.

The John Brooks Williams Natural Sciences and Technology Center–South Building

Holy Cross Learning through Interdisciplinary Design

The completion of the Sciences and Technology Center–South Building will give students in all disciplines the innovative learning space crucial for developing their hearts and minds, a basic tenet of the Holy Cross tradition. Faculty and students from all majors will enjoy the resources and room to share ideas. They will solve problems creatively in classrooms and laboratories designed specifically to support such cross-discipline collaboration — and they will look beyond their major to pursue real-world projects with their peers in areas as diverse as health care, public safety, psychology, robotics and ecology. They will, at last, learn and discover in a first-class facility designed to transcend disciplines, encourage teamwork and inspire creativity.



The John Brooks Williams Natural Sciences Center–North Building opened its doors to students in Fall 2006.

“The Sciences and Technology Center–South Building will provide the innovative learning space crucial for cultivating hearts and minds in the tradition of Holy Cross.”

— University Trustee and Executor of the Estate of John Brooks Williams
John H. Bauer '62

For All Students

In the university's rich liberal arts tradition, every student will explore the sciences through general education or advanced courses in the South Building:

Four Computer Science classrooms

**Two general education/
Math Lab classrooms**

**Two general education science/physics
lab classrooms**

Two general education classrooms

135-seat auditorium

For Faculty

Faculty members in the School of Natural Sciences will benefit from work and meeting spaces that foster collaboration and community:

30 faculty offices

Dean's office

Director's office

Conference room

Continue the Momentum

Expand opportunities for students and faculty by supporting first-class teaching and research facilities — make a gift today to the John Brooks Williams Natural Sciences and Technology Center–South Building.