BIOLOGY FACULTY AND STUDENTS EXPLORE DEEP-SEA CORAL IN THE GULF

Imagine spending eight hours with two other people in a space that is 6 feet in diameter. Now imagine that the space is about a mile beneath the surface of the Gulf of Mexico.

That scenario describes the spring 2014 research voyage of CST faculty and students aboard Alvin, a U.S. Navy-owned submersible. “We looked for corals that show an ability to grow under very harsh conditions,” explains Erik Cordes, associate professor of biology, whose research is funded by the National Science Foundation (NSF). “These coral reefs are already more acidic—due to their depth and rise in atmospheric carbon dioxide levels—than any on Earth, yet they survive.”

In addition to Cordes, the CST team included Rob Kulathinal, assistant professor of biology and co–principal investigator on the NSF grant, and Professor of Biology Robert Sanders. “I'm a lab-reared genomicist, so these opportunities typically do not present themselves,” says Kulathinal, who is examining gene-expression changes of Lophelia pertusa coral at different levels of acidity.

Sanders—whose research focuses on the microbial food web in oceans and lakes—gathered data on organisms that feed on bacteria in surface waters and in the deep chlorophyll maximum, a depth stratum rich in phytoplankton and other microbes and near oil seeps on the ocean floor. Cordes and his team completed 18 dives, gathering coral specimens to conduct experiments at sea and perform genomic analysis back at Temple University. A small film crew was on hand to chronicle Cordes’ work for Acid Horizon, a documentary about his research.

Four graduate students from the Cordes lab, Alanna Durkin, Carlos Gomez, Sam Georgian and Danielle DeLeo*, were also on the voyage. “For most people in our field, getting an Alvin dive is the pinnacle of their careers,” Georgian said. “For graduate students, it’s a rare experience.”

—Greg Fornia

*More about Danielle DeLeo on page 28, In Their Words.
SPRING 2014 GRADUATION

The College of Science and Technology held its 15th graduation ceremony on May 15. Held in McGonigle Hall, the ceremony honored more than 300 CST graduates from around the world. The featured speaker was James Edward Maceo West, a pioneer in acoustic research who attended Temple in the 1950s and was recognized with an honorary degree in 2014. West’s many awards and honors include the National Medal of Technology and Innovation, the highest honor bestowed on an inventor in the U.S.; the Acoustical Society of America’s Gold Medal; and the Industrial Research Institute’s Achievement Award.

Kevin Chemidlin, a computer science major, was this year’s student speaker. He earned a Temple Merit Scholarship in 2010, the Adeline and Marvin Wachman Scholarship in 2011, and the Jules J. Sheldon, DDS, Scholarship in 2013. Chemidlin is now systems analyst/project manager for Cigna.
Which are the world's most cited scientific research papers? The journal Nature asked Thomson Reuters to compile the top 100 from its Web of Science database, which goes back more than a century.

The list includes four papers from three CST Carnell professors. They are John Perdew, Department of Physics, with #16 and #93; Sudhir Kumar, Department of Biology, with #45; and Dean Michael Klein, Department of Chemistry, with #79.

“Academic scholarship is being more and more quantified by the number of citations to a given publication,” said Dean Klein. “This achievement is a testament to the quality of recruiting that has taken place recently at CST.”

**PHYSICS DEPARTMENT HIGHLIGHTED AT APS MEETING**

A video showcasing the faculty, research, facilities and growth in Temple’s Department of Physics debuted at the March meeting of the American Physical Society (APS) in Denver.

The video was produced by APSTV and highlights the cutting-edge research of Rongjia Tao, former chair of the Physics Department; John Perdew, Laura H. Carnell Professor of Physics and Chemistry; Xiaoxing Xi, Laura H. Carnell Professor and new department chair; and professors Marjatta Lyyra, Zein-Eddine Meziani and Bernd Surrow.

In addition to the faculty and their research, the video also focuses on the Science Education and Research Center and its impact on the Physics Department. Tao says the video was received positively by his APS colleagues at the meeting, which was attended by approximately 10,000 physicists, scientists and students.

**LARGEST-EVER SCIENCE AND TECH JOB FAIR**

The College of Science and Technology’s spring 2014 Science and Technology Job Fair attracted more than 400 Temple students and 50 top employers—both records for the event, which has been held since 2008. Participating companies included Agilent Technologies, Children’s Hospital of Philadelphia, Cigna, GlaxoSmithKline, Independence Blue Cross, JPMorgan Chase, Prudential, the Wistar Institute and Vanguard.

**INTERNATIONAL RESEARCH COLLABORATION**

CST faculty participated in the International Workshop on Advanced Materials and Nanotechnology in Tsukuba, Japan, a collaboration between Temple University and Japan’s National Institute for Materials Science. Speakers included Dean Michael Klein, Professor Eric Borguet, Professor and Chair Robert Levis, Carnell Professor John Perdew, Assistant Professor Adrienn Ruzsinszky, Professor Daniel Strongin and Assistant Professor Michael Zdilla.

This same group, along with Professor Irina Mitrea, Assistant Professor Benjamin Seibold and Professor Laura Toran, then traveled to Seoul, South Korea, to participate in the first Temple-Yonsei Joint Symposium at Yonsei University.

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ALUMNI MENTORS POINT THE WAY FOR STUDENTS

The grade-point average of Phimy Pham, a chemistry major who wants to become a pharmacist, increased a full point from one semester to the next after Jim Guare (BA ’77, MA ’83, Chem) began mentoring her through CST’s Owl to Owl Mentor Program.

Spearheaded by Guare, president of CST’s alumni board and chair of its mentoring committee, the program pairs CST students with CST graduates. Its popularity—56 mentors and 63 students in its second year—is one reason other Temple colleges and schools are considering replicating the program.

Among many achievements during his 28-year career at Merck & Co. Inc., Guare helped develop Crixivan, one of the drugs that transformed AIDS from a fatal disease to a chronic condition. “I had a wonderful career, but I didn’t do it by myself,” Guare says. “I had people all along the way, from high school to Temple to Merck, who mentored me.”

He arranged for Pham to do research in the Temple School of Pharmacy’s Moulder Center for Drug Discovery Research. “He motivated me to push myself more,” Pham says. “I’m really grateful that I met him.”

Alumni board member Jennifer Gresh (BS ’98, Geo) manages the Philadelphia office of Duffield Associates, an engineering firm. She has met multiple times with geology major Chelsea Rush—over lunch, at a Society of Women Environmental Professionals networking event and out in the field to assess groundwater for possible petroleum contamination. “The business of geology wasn’t obvious to me as an undergraduate, so I’d like to give Chelsea the full picture,” Gresh says.

Madison Martin, a senior biology major who hopes to go to medical school, was paired with Risa Altman (BA ’81, Bio), a Lehigh Valley pediatrician associated with Children’s Hospital of Philadelphia. “We’ve talked over lunch about the process of becoming a doctor, and I shadowed her seeing patients,” Martin says. “It’s interesting to see in practice what I’d get to do rather than just reading it online.”

—Bruce Beans

A mentor makes a huge impact on a student’s life and career. Find out more about Owl to Owl at cst.temple.edu/owl2owl.