

Fall 2011

The Pulse

Editors: Circe McDonald
Kristyn Perry



Thirteenth Edition

The Department of Natural Sciences and Mathematics Newsletter

W.M. Keck Foundation Grant Supports Advanced Microscopy

Dominican University of California received a \$250,000 grant from the W.M. Keck Foundation's Undergraduate Education Program to purchase scientific equipment which will advance university research. This grant enabled the purchase of a laser confocal microscope which will integrate cutting edge microscopy methods across both biology and chemistry research as well as advance Dominican's partnerships within the Bay Area's biomedical community. The confocal microscope will also be central in two new undergraduate courses: Cell Imaging Technology and Stem Cell Technology. The grant is a further sign of Dominican's continued dedication to integrating undergraduate research throughout the science curriculum.



Dr. Roland Cooper Joins Dominican

This semester the Department of Natural Sciences and Mathematics welcomes the addition of a new full time faculty member, Dr. Roland Cooper. He comes to Dominican from Old Dominion University in Virginia where he taught for eight years. Dr. Cooper always knew he wanted to study biology because of his interest in how drugs work and tropical biology. Following these interests he studied general biology in as an undergraduate at the University of California, Santa Barbara, pharmacology/toxicology in his doctoral studies at the University of Arizona, and then attained his masters degree in public health at Harvard University focusing on biomedical parasitology. Afterwards, he did a postdoctoral fellowship at the National Institute of Health in Washington, D.C. in a parasitic disease laboratory, focusing mainly on researching malaria. Here at Dominican University he is continuing his research into malaria and molecular mechanisms of drug resistance focusing on how and why the malaria parasite can adapt to new drugs. In addition to this research, he is currently doing field research in Uganda studying the relationship between malaria and HIV. Dr. Cooper will be teaching Advanced Genetics, Biomedical Parasitology, and will soon start his first biology research methodologies rotation. When Dr. Cooper isn't busy in the lab or classroom, he enjoys running, traveling, and auto and motorcycle mechanics.

Dominican Announces the Lillian L.Y. Wang Yin Endowed Chemistry Professorship



The search continues for a professor to be honored with the new Lillian L. Y. Wang Yin, Ph.D. Endowed Professorship in Chemistry. As part of a two million dollar bequest from the estate of H.B. Yin and Dominican alumna Dr. Lillian L.Y. Wang Yin, the professorship provides recognition to an outstanding faculty member whose field of study is chemistry. The appointment to this professorship lasts six years and is renewable. Lillian L.Y. Wang graduated from Dominican University in 1951 with a B.S. in Chemistry after immigrating to the United States from China in 1948. She went on to obtain her M.S. and Ph.D. from University of Pennsylvania and completed postdoctoral training at University of Pennsylvania, Hahnemann Medical College, and the State University of New York. Dr. Yin joined the Food and Drug Administration (FDA) in 1968 and rose through positions until serving as the Director of the Division of Reproductive, Abdominal, Ear, Nose, and Throat,

and Radiological Devices from 1979 until 1999. The bequest also funds a scholarship assisting students pursuing a major in chemistry or a major in other sciences with a minor in chemistry.

Student Seizes Summer to Serve in Cambodia



The summer is a great opportunity for students to have fun, find internships, and forge relationships that can last a lifetime. Some of the biology and chemistry students do research internships while others are shadowing doctors to gain experience before medical school. Gabriel Navarrette, a senior biology student, volunteered this past summer at the gastrointestinal clinic at Sihanouk Hospital Center of Hope in Phnom Penh, Cambodia. The Sihanouk Hospital center is a charity hospital that provides care for the disadvantaged population of Cambodia. Gabe directly assisted a Kaiser doctor providing technical support and reworking the hospital's chart system to emulate Kaiser's system to make the system quicker and more efficient. He was able to participate in this unique opportunity because he knew the doctor personally, and she invited him to assist her over the summer. When asked about his experience he said, "I really enjoyed the experience, not just for the educational opportunity but also the chance to learn about a foreign culture."

Dominican MESA Program Expands to Inspire Marin Students

The Mathematics Engineering Science Achievement (MESA) program continues at Dominican University for a second year. This program is funded by grants from Marin Community Foundation, the San Francisco Foundation, and the Kimball Foundation. The goal of MESA is to inspire educationally disadvantaged students from elementary through high school. MESA provides Saturday academies at Santa Rosa Junior College as well as tutoring, study skill training, academic planning, and college guidance for MESA students. MESA students then compete on county and national levels designing robots and structures. While MESA has a focus on engineer, it has begun to expand into all Science Technology Engineering and Mathematics (STEM) fields. The program began with three sites and sixty students expanding this year to six sites and over one hundred students. These sites include schools throughout Marin County including San Rafael, Novato, West Marin, Sausalito, and Marin City. Mark Jaime, director of the Dominican MESA program, sees Dominican “serving as a bridge to inspire young students to pursue careers in science and encourage curiosity.”



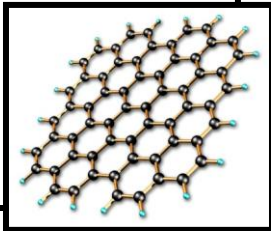
Kaiser Permanente Supports DU Pre-Med Scholars

The Kaiser Permanente Pre-Med Scholar Program enters its third year with another group of enthusiastic students and dedicated doctors. This competitive shadowing program gives students the opportunity to build a close relationship with a mentor in the student’s area of interest. Students also have an opportunity to do rotations throughout Kaiser facilities in Marin.

Student	Mentor	Specialty
Emmeline C. Academia	Irina DeFischer	Family Medicine
Yesenia Sandoval	Mary Mockus	General Surgery
Kristyn Perry	Roberto Gonzales	Internal Medicine
Stephanie Malone	Teres Caron	Internal Medicine
James McSweeney	Jeffry Cardneau	Vascular Surgery
Elicia Fernandez	Mike Parnes	General Surgery
Jackielyn P. Sabangan	Elizabeth (Betsy) Olle	Internal Medicine
Christopher S Bettiga	Rochard Dow	Pediatrics
Krystalyna Montano	Mike Mason	Family Medicine
Ava Bambico	Joe Zimmerman	General Surgery
Shiena E nerio	Lori Selleck	Internal Medicine
Christopher Galbick	RayBrow	Internal Medicine
Zehara Eckert	Jessica Keane	Internal Medicine
Cory Tiller	John Delson	Internal Medicine
Rubi MGarcia	Richard Christensen-Dalia	Internal Medicine
Rafi Laus	Raymond Damian	Internal Medicine
Alissa Gumbs	Carol Ekelund	Pediatrics

High Temperature Physics Collaborates with Dominican to Turn Carbon Dioxide into Graphenes

A new start-up company, High Temperature Physics (HTP), has found a partner in Dominican University. HTP has a patented procedure which uses carbon dioxide to produce graphenes, single atomic layers of carbon atoms which are arranged in highly symmetrical hexagonal patterns. Graphenes have high thermal and electrical conductivity along with being extremely strong. The HTP process is unique in that it uses carbon dioxide instead of graphite, which is costly to mine. This process is estimated to be able to produce graphene in large quantities at a significantly reduced price than the current manufacturing procedures. HTP plans to partner with manufacturers of high tech products, using graphene to help produce flat screen displays as well as lithium ion batteries. Dominican students have already begun interning with the new company.



Intergenerational Communication Project Continues the Conversations

Older residents in the Dominican neighborhood are about to see some new faces as the Intergenerational Communication Project continues for another year. This program pairs adults over sixty years old with pre-med students. The seniors and students meet on a weekly basis either on the Dominican campus or at the seniors' homes to have lunch, take walks, or even go to the movies. Students are trained to detect and report signs of elder abuse, dementia, and Alzheimer's disease. Along with health education, students are informed about resources for older adults in Marin, take part in discussions concerning the importance of diversity in society, and finally practice how to effectively communicate. All this training enables students to bridge the generation gaps between them and their senior partners and then use this communication link to provide resources and help for the seniors. Do not be misled into thinking the program is meant to benefit the seniors alone. "The project provides an opportunity to impress upon future doctors and health care professionals that experience and communicating with the elderly and improving their understanding of the life of older adults," reports Sandy Miller, a senator on the California Senior Legislator. Francey Capper, the senior who inspired the project, said "it's been a two-way street. We've learned from them, and they've learned from us." The program is a collaboration of The Marin County Department of Health and Human Services' Division of Aging and Adults Services and the Prevention Hub, Dominican University, Jewish Family and Children's Services, and the National Park Service.

PULSE Newsletter reserves the right to edit submissions for grammatical and stylistic errors.

Advisory Editors: Sibdas Ghosh, Mietek Kolipinski

Faculty Editors: Maggie Louie, Mohammed El Majdoubi

Faculty Advisors: Vania Coelho, James Cunningham, Bill King, Diara Spain

Layout and Logo: Circe McDonald

Writers: Circe McDonald, Kristyn Perry