

# Natural Sciences & Mathematics



## SPOTLIGHT

### NSM Faculty Re-elected to NAS Committee

Dr. Katherine Kantardjieff was recently elected to a second term as member of the United States National Committee for Crystallography at the National Academy of Sciences, where she will continue to serve as chair of the Education Subcommittee. Dr. Kantardjieff is also Co-PI on a recently renewed NSF grant funding the Center for Workshops in the Chemical Sciences. This grant allows the Center for Molecular Structure here at CSUF to host professional development workshops in crystallography for undergraduate faculty from around the country.

Dr. Kantardjieff is a professor of physical chemistry in the Department of Chemistry and Biochemistry. Her research focuses on determination of macromolecular structure of groups such as bacterial toxins, bovine ceruloplasmin and cytochromes from photosynthetic bacteria. She is also director of the W.M. Keck Foundation Center for Molecular Structure.



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## Department News



### Chemistry

\*\* Dr. Fu-ming Tao congratulates his Troy High School intern students for outstanding work on their projects. Three students were semifinalists in the Siemens Westinghouse Competition west regional division. One student, Angela Shih, won the west regional final for her project: Theoretical mechanisms and kinetics for the reaction of dimethyl sulfide and ozone in water vapor. Dr. Tao will accompany her to Washington DC this weekend for the national title among the 6 regional finalists. See the website for details: <http://www.siemens-foundation.org/whatsnew/default.html>

### Physics

\*\* Congratulations to Dr. Mark Shapiro, who has now reached over ONE HUNDRED publications in refereed journals. He has recently had his 101st paper accepted for publication.

### Geology

\*\* **Scientific presentations to be made in December by students and faculty of the Department of Geological Sciences**  
[\*Undergraduate Students, †Graduate Students]

#### American Geophysical Union, national meeting San Francisco, CA

1. Matthew E. Kirby, Steve P. Lund; Christopher J. Poulsen, *A Holocene Sediment Record From Lake Elsinore, Southern California: Evidence for Relative Lake Level Change and the Onset of ENSO.*
2. David Bowman, Geoffrey King, Yann Klinger, and Paul Tapponnier, *Slip Partitioning and the Regional Stress Field.*
3. Nancy Ikeda<sup>†</sup>, and David Bowman, *Forecasting Earthquake in Southern California Using the Stress Accumulation Method*
4. Geoffrey King, David Bowman, and Arnaud Mignan<sup>†</sup>, *Which Works Best, ETAS or SAM?*
5. Shoshana Z. Levin, Charles G. Sammis, and David D. Bowman, *An Observational Test of the Stress Recovery Model for Seismicity Preceding Landers.*

#### AGWSE national meeting Orlando, FL

1. W R Laton, and Joan Dolmat\*, *Deep Multiport Research Monitoring Well, CSF-1, Fullerton, CA: Stratigraphy, Lithology and Geologic Setting*
2. Otto Figueroa<sup>†</sup>, and W R Laton, *Ground Water Modeling of a Coastal Aquifer Malibu, California*
3. Steve Williams<sup>†</sup>, and W R Laton, *Hydrogeologic Investigation of the Shallow Aquifer System Using long term aquifer tests and water level monitoring, Lower Borrego Canyon Wash, IRP Site 2, El Toro Naval Base, Irvine CA*



The following exam dates/times were omitted from the Fall 2003 Class Schedule

M, W, and/or F classes starting at 12:00 pm  
take final exam on  
Friday December 19, 12:00-1:50 pm

Friday only classes starting at 2:00 pm  
Take final exam on  
Friday December 19, 12:00-1:50 pm



## Research Happenings

### *Students Undertake Environmental Science Research in Thailand*

Six NSM undergraduate students will travel to Thailand in January to conduct research in environmental science at Chiang Mai University in northern Thailand. Drs. Richard Deming (Chemistry) and Brady Rhodes (Geology) will lead the group that includes Son Nguyen and Xingyu Peng (Chemistry/Biochemistry), Tim Smith and Alissa Beach (Geology), and Rebecca Schwartz and Andrea Ruse (Biology), as they conduct research in a variety of projects related to environmental issues in Southeast Asia. The students are part of a unique opportunity funded by the Associate Students Instructionally Related Activities program.

The goal of the program is to expose CSUF students to real-life environmental problems in a country experiencing development pressures in its industrial and agricultural sectors. Students learn about the unique characteristics of Thailand's rural, coastal and urban ecosystems and spend time visiting field sites as well as conducting laboratory studies. The Thai faculty mentors provide detailed supervision and the CSUF students work closely with Thai undergraduates, master's students and doctoral candidates apply their knowledge from studies at CSUF, learn new skills of observation and data collection, and utilize state-of-the-art instrumentation and computer systems. The students are also exposed to the cultural, legal and governmental contexts of environmental issues.

Research projects will include toxicological studies of air pollutants, flow-injection analysis of trace metals and organic pollutants, location and characterization of geological formations that reflect earthquake hazard potential, characterization of algal species as indicators of water quality, and studying endangered animal populations in tropical ecosystems.

This is the second year of the program. Last year Rosa Aguilera, Maura Corcoran, Mike Nguyen, Jason Newmark, Jennie Walcek, Jason Bodine, Sean Hunt and Josh Moeller spent time at Chiang Mai University and Khon Kaen University (northeastern Thailand) and explored coastal islands as well as the urban center of Bangkok.

In recent years, several NSM students and faculty members have traveled to Thailand and a number of Thai students and faculty members have spent time in our classes and laboratories under agreements for academic exchange signed by President Gordon in 1999. For more information about these programs and how you can participate in these opportunities, contact Drs. Deming or Rhodes.

If you're a student who really, REALLY likes research in your major, there are many ways to be involved in research projects: laboratory sponsored research, scholarship programs, even graduate school. However, many programs (and all graduate schools) require applications.

An important component of many applications is a letter of recommendation. The NSM Opportunity Center just happens to have information on **HOW TO ASK FOR A LETTER OF RECOMMENDATION**.

Stop by the Opportunity Center, MH 488 (714) 278-7082 (which, coincidentally, also has information on laboratory research, scholarship programs, and even graduate school) .

## MONEY

Scholarship and Employment Info

**The Financial Aid Office** has recently released updated information on scholarships available to students. Scholarships of special interest to NSM students are listed below. For detailed criteria and application information, please see the financial aid website, <http://www.fullerton.edu/financialaid/>. Printed information will also be available starting December 15.

Department	Scholarship	Amount	Deadline
Any NSM Department	A. James Diefenderfer Memorial Scholarship	\$500	March 1
	Natural Sciences and Mathematics Scholarship	\$500	March 1
Health Professions	Reginald Newton Newkirk Memorial Scholarship	\$500	March 1
Biological Science	Jewel Plummer Cobb Scholarship	\$500	March 1
	Dr. and Mrs. Donald B. Bright Environmental Scholarship	Approximately \$4,000	February 27
	Rachel Carson Scholarship in Conservation Biology	\$400	April 1
	Coppel Graduate Science Award	Up to \$500	April 1
	Donald Gardner Memorial Scholarship	Up to \$500	February 27
	Judith A. Presch Endowment Desert Research Scholarship	\$250 & 1 yr. fee waiver for use of Desert Studies Center	October 14
	David L. Walkington Memorial Scholarship	\$700	March 5
	Jerome Wilson Memorial Scholarship	\$700	February 27
Chemistry & Biochemistry	American Society of Quality Control Scholarship Award	\$250	N/A
	Glenn Nagel Scholarships	\$3,000	February 28
	Glenn Nakaya Scholarship	\$800 cash + \$200 book credit	February 28
	James Sternberg Scholarship	\$500	February 28
	Gloria Welch Scholarship	\$1,000	February 28
Geological Sciences	Dr. Margaret Skillman Woyski Award	Approximately \$300	February 28
Mathematics	Actuarial Studies Scholarship	\$500	March 15
	Applied Math Scholarship in Honor of Lila B. and Major Theodore Hromadka	\$1,000	N/A
	The Klein Family Academic Excellence Award	\$100	N/A
	Math Club Scholarship / Service Award	\$100	March 28
	Outstanding Mathematics Scholarship	\$200	N/A
	Santa Ana / Cal State Fullerton Mathematics Scholarship	\$300	March 2
	The Brandon Nghi Tran Memorial Scholarship	\$1,500	February 15
Physics	Constance Beech Eiker and Raymond V. Adams Creativity Award	\$300	March 2
	Dan Black Physics/Business Scholarship	\$10,000	May 14
	Dan Black Scholarship	\$400/ month for academic yr.	September 13
	Edward Lee Cooperman Memorial Scholarship	Approximately \$250	March 2
	Robert W. Kedzie Award	Approximately \$250	N/A

## NSM Career Trends

Featured industry trends, presented by Dr. Gloria Sims, Industry Specialist: Science, Engineering and Technology ~ Career Planning and Placement Center

*This month:*

### Careers in Biotechnology - Research & Development

There are tremendous career opportunities in biotechnology-related fields available now and in the near future. The industry is growing rapidly, on a global scale, and analysts are predicting that it will have a profound impact on health care, agriculture, energy, and environmental management.

The United States is currently the world leader in the research, development, and commercialization of biotechnology products. These advances have brought to market life-saving health care products and microbial pesticides, and will soon offer healthier foods, disease- and insect-resistant crops, additional energy resources, environmental clean-up techniques, and more.

Students interested in a career in biotechnology should make an appointment with their academic advisor to discuss a study plan and see Dr. Gloria Sims ( 714.278.3766, [gsims@fullerton.edu](mailto:gsims@fullerton.edu) ) in the Career Planning and Placement Center .

Speaking of planning... .

All Seniors Majoring in Biology **MUST TAKE** the **BIOLOGY EXIT EXAM** in Order to Graduate!

The Exam Is Only Offered **ONCE A YEAR**, So Please Don't Wait!

2004 Exam Dates:

Thursday, March 18, 4:00 pm-7:00 pm

Friday, March 18, 1:00 pm-4:00 pm

Sign up in the Biology Department Office,  
MH-207, (714) 278-3614

#### **Sample Career Opportunities include:**

**Laboratory Assistants** are responsible for performing a wide variety of research laboratory tasks and experiments, making detailed observations, analyzing data, and interpreting results. The assistant maintains laboratory equipment and inventory levels for laboratory supplies. They may also write reports, summaries, and protocols regarding experiments. A laboratory assistant also performs limited troubleshooting and calibration of instruments. An entry-level laboratory assistant position requires at minimum an bachelor's degree in a science and 0 to 2 years' laboratory experience.

**Research Associates** are responsible for research and development in collaboration with others on projects. They make detailed observations, analyzes data, and interprets results. Research associates prepare technical reports, summaries, protocols, and quantitative analyses. An incumbent maintains familiarity with current scientific literature and contributes to the process of a project within his or her scientific discipline, as well as investigating, creating, and developing new methods and technologies for project advancement. Associates may also be responsible for identifying patentable inventions and acting as principal investigator in conducting his or her own experiments. A research associate may also be asked to participate in scientific conferences and contribute to scientific journals.

**Research Assistant's** job description is similar to that of a research associate. At the entry level, the job requires a bachelor of science or advanced degree in a scientific discipline or equivalent, with little or no related experience.

*Information Source: Access Excellence, The National Health Museum, [www.acessexcellence.org](http://www.acessexcellence.org)*



★ GOOD TO KNOW... ★



## Volunteer and Service Center December Activities

### **December 1-11**

Boxes of Love Titan Student Union Rm. 2

CSUF volunteers are needed to help the needy by picking up a box in the VSC and filling it with food supplies. Boxes will be delivered during the holidays.

### **December 17**

CommUNITY Connection

5:45-8:00pm

Volunteers provide activities and develop connections with the teens whom have been removed from their homes and are temporarily residing at Orangewood Children's Center.

### **December 20-22**

Salvation Army Holiday Packaging

Orange County Community

Sort and pack food and toys for needy families in Orange

County. Time is flexible, contact the VSC to receive additional details.

### **December 31-January 31**

Recycle Holiday & all Occasion Cards

TSU Rm. 2

Turn your old cards into the VSC to be donated to St. Jude's Ranch. Cut off the front picture of the cards as they will be re-used to help abused and neglected children bolster their self esteem and creativity.

Please contact the Volunteer & Service Center, TSU Rm. 2, one week prior to event to sign-up and reserve your spot or to receive additional details on volunteer activity.

Volunteer & Service Center, (714) 278-7623, volunteer@fullerton.edu

## Winter Donations for Wildfire Victims at Local Reservations

The Biology Graduate Student Club is seeking donations of **hygiene supplies** (toothpaste, shampoo, soap, deodorant, towels), **baby items** (diapers, juice, wipes, cereal), **clothing** (especially large size adult and winter clothing), **blankets**, and anything else you think a family that lost everything would need.

Please drop off items at the Biology Office by December 18.



THE OPPORTUNITY CENTER WISHES STUDENTS GOOD LUCK ON THEIR FINAL EXAMS,



AND TO EVERYONE A SAFE AND HAPPY HOLIDAY SEASON!

