

# Natural Sciences & Mathematics

## Academic Advising

**! Important Reminder!**

All Students in the College of Natural Sciences and Mathematics must see their advisor every semester! To avoid a hold on your registration see your advisor!

## Advisement Dates

Biological Science  
October 25-November 19

Chemistry and Biochemistry  
October 11-29

Geological Sciences  
October 11-22



Mathematics  
October 18-30

Physics  
E-mail  
jfeagin@fullerton.edu  
with advisement questions

### Biological Science Lecture Series

**Place :** McCarthy Hall 468  
**Day:** Wednesday  
**Time :** 4 pm  
**Schedule for October:**

**Oct. 6th :** SCERP Seminar – Speaker TBA

**Oct. 13th:** Dr. Amybeth Cohen, Dept. of Biological Science, CSUF, **Topic:** To be Announced

**Oct. 20th:** Dr. Jeanine Donely, Mira Costa College, **Topic:** Mechanics of steady swimming”

**Oct. 27th: MARC Seminar:** Dr. Julie M. Stone, Assistant Professor Biochemistry & Plant Science Initiative University of Nebraska - Lincoln, **Topic:** TBA

### Chemistry and Biochemistry Lecture series

**Place:** McCarthy Hall 238  
**Day:** Thursday  
**Time:** 4 pm  
**Schedule for October:**

**Oct 7th:** Dr. Stanley P. Sander, JPL, California Institute of Technology, **Topic:** Reaction Kinetics of Atmospheric Hydrogen

**Oct 14th:** Dr. R. Daniel Little, Department of Chemistry & Biochemistry, UCSB **Topic:** Having fun with Reactive Intermediates

**Oct. 21st:** Grad Student, CSUF Dept. of Chemistry, **Topic:** TBA

**Oct. 28th:** Dr. Barbara Gonzalez, CSUF, **Topic:** "Learning Theories Applied: Exploring the Impact of Visualization"

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## News from the College and Departments

### Chemistry and Biochemistry

Professor Gene Hiegel and senior Justin Lewis along with Jason Bae, have recently published an article in *Synthetic Communications* this month. The following is the citation:

Gene A. Hiegel, Justin C. Lewis, and Jason W. Bae, "Conversion of  $\alpha$ -Amino Acids into Nitriles by Oxidative Decarboxylation with Trichloroisocyanuric Acid," *Synth. Commun.*, 34 (19), 3449-3453 (2004).

The Chemistry and Biochemistry Department at CSUF was recently featured on the Molosoft Website. Check it out at: <http://www.molsoft.com/full073004.html>

### Mathematics

Twelve faculty members from the Department of Mathematics will be giving presentations at the California Mathematics Council, Southern Section, at Palm Springs in November, 2004. This year's presenters include Dr. Marty Bonsangue, Dr. Armando Martinez-Cruz, Dr. Harris Shultz, Dr. David Pagni, Ms. Kathy Lewis, Dr. Jerry Lege', Dr. Margaret Kidd, Dr. Jerry Gannon, Dr. Larry Weill, Dr. Bill Leonard, Dr. Scott Annin, and Dr. Cherlyn Converse

### Physics

Dr. Morty Khakoo recently gave an invited talk at the Annual Irish Gaseous Plasma meeting in Dublin at the Dublin City University entitled "Electron Scattering from Fundamental Molecular Targets used in Industrial Plasmas" and also attended the sorters meeting for the Gaseous Electronics Conference.

Dr. Heidi Fearn attended bi-weekly lectures at the Kavli Institute for Theoretical Physics (KITP) at UC Santa Barbara. She was there for 3 weeks at the start of August 2004. She attended a meeting of "QCD and string theory" which started in August and will continue on through November 2004.

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## CSUF Graduate Students Investigate Delays in GPS Signals

**Ten Cal State Fullerton graduate students majoring in math have forsaken the beach to spend the summer in a computer lab, working on a project for Raytheon Co.**

The students utilized what they've learned in the classroom, putting it to practical use in the culminating project required for their master's degree.

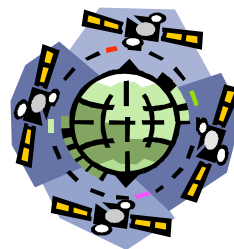
They have been investigating the delays in Global Positioning System (GPS) signals as they travel through the ionosphere, an area of the earth's atmosphere where incoming solar radiation affects the transmission of radio waves.

"When the signals go through the ionosphere, it can throw off the measurement of the position," says John G. Pierce, professor of mathematics, one of two faculty members working with the students. To compensate for the delay in the signal, GPS sends and receives two frequencies. But the delay, adds Pierce, "can be very crucial when GPS is being used for airplanes and measuring altitude."

The main purpose of the students' work was to develop a computer program that would help Raytheon determine how best to place new ground stations to estimate the delays, says William B. Gearhart, professor of mathematics.

Raytheon awarded an \$18,414 summer contract for the students' efforts.

Participants in the project were: Edward Can and Michael Vodhanel, Tracy Grover, Hannah Hong, Jay Nguyen, Lorena Ortiz, David Peterson, Eric Ratzlaff, Kevin Takeuchi, and Tyler Wilson .



## Opportunity Center (MH-488) Fall 2004 Tutoring Schedule

	M	T	W	TH	F
8:00 am	Rosanne (after 8:30)		Rosanne (after 8:30)		
9:00	Julia Rosanne		Rosanne		
10:00	Julia Rosanne (until 10:30)		Rosanne (until 10:30)	Anthony	A.D. Rosanne
11:00		Andrew (after 11:30)		Andrew (after 11:30) Anthony	A.D.
12:00	Anthony	Andrew	Anthony	Andrew	
1:00 pm	Anthony	Andrew (until 1:30)	Anthony Julia	Andrew (until 1:30) Anthony	
2:00	A.D. Anthony (until 2:30)		A.D. Anthony (until 2:30) Julia	Anthony	
3:00	A.D	A.D.	A.D.	A.D. Anthony	
4:00					
5:00					
6:00					

### Biology

A.D. 171, 172, 273  
Julia 172  
Rosanne 171, 172, 173,  
274

### Chemistry

A.D. 421  
Andrew 120 a/b, 310, 421  
Anthony 120a, 301a/b, 421, 423a  
Julia 120 a/b  
Rosanne 120 a/b, 421

### Physics

A.D. 211  
Andrew 211, 212  
Rosanne 211, 212

Accurate as of 9/14/2004

## **Physics Alumna Makes News as a Ringmaster (...at JPL, not Barnum & Bailey)**

The Physics Department is very proud of our alumna, Dr. Linda J. Spilker, who has recently been making headlines as Deputy Project Scientist on the Cassini mission to Saturn and as a co-investigator on the Composite Infrared Team. Linda has been involved with the Cassini Mission since 1988. In her role as Deputy Project Scientist, she coordinates the work of 260 researchers in 17 countries. She continues to conduct studies on Saturn's rings.

Throughout her early schooling she excelled in science and mathematics, but was discouraged by her high school counselor from pursuing a career in science. Linda remarks that: "I felt some pressure not to go into science because, at that time, it was not a field that women traditionally pursued. I was told that science would be too hard for me in college..." even though she had done very well in all of her classes. She came to Cal State Fullerton in the early seventies as a math major, but her talent for science became obvious when she took her first physics class. Linda had the good fortune to be able to work for two years in Professor Dorothy Woolum's laboratory. Upon graduating from CSUF, Linda was immediately hired by NASA Jet Propulsion lab in Pasadena and has remained there since.

After arriving at JPL, Linda worked for 13 years on the Voyager Infrared Imaging Team as Voyager flew by Jupiter, Saturn, Uranus, and Neptune. While raising her family and continuing to work full-time at JPL, she went back to school, completed her MS in physics at Cal State Los Angeles. She then went on to the Ph.D. program in geophysics and space science at UCLA. She received her Ph.D. from UCLA in 1992 earning highest honors at graduation.

When she graduated from CSUF in 1977, Linda was the recipient of the Physics Department Faculty Prize for Scholarship. That, however, was only the first in a long series of awards that she has won, including a NASA Exceptional Service Medal, a NASA Scientific Achievement Award, 10 NASA Group Achievement Awards for her work on the Voyager and Cassini Missions, Distinguished Alumna Award for Natural & Social Sciences at Cal State Los Angeles, and the Hall of Fame Award from the Placentia-Yorba Linda Unified School District. She has published thirty-three scientific papers in refereed journals, and presented nearly one hundred papers at scientific meetings.

Linda enjoys hiking, volleyball and traveling with her husband, Tom, also a JPL scientist, and her two daughters, Jennifer and Jessica. She also likes sky-diving and bungee-jumping, although that does not take her quite as high as the rings of Saturn!

Linda's advice to young women interested in science: "I would encourage young women to listen to themselves and follow their dreams. If I had listened to those around me who tried to discourage my interests in science, I would have missed the opportunity to be part of the scientific search for new knowledge."

## Important Information

Student Health Profession Association will be hosting a Red Cross Blood Drive.

The Blood Drive will be held October 5th-7th in the TSU Pavilion C from 10:00am to 4:00pm. It takes about one hour for the entire process including registration, 7-10 minutes giving blood, eating pizza and snacking. The Blood Drive is one of the biggest events of the year and the support we receive will help to make a difference in the lives of others. Please save a life.

***Dimensions*, the Journal of Undergraduate Research at CSUF, is looking for responsible and dedicated students as Section Editors for the following majors:**

Biology

Geology

Mathematics

Physics

As a Section Editor, you will...

- Recruit students from your discipline to publish articles/abstracts
- Review contents of Author Information packet with authors
- Keep student authors on track
- Edit articles from your discipline
- Ensure accuracy of final layout
- Receive a **\$300.00** stipend.

One Subject Editor is selected per discipline. This is an excellent opportunity to become a student leader, influence research and discovery, and make a contribution to the science community of California State University, Fullerton.

If you would like further information regarding the positions available, contact...

- Rosanne Yetemian, Editor-in-Chief, at [RosanneYetemian@yahoo.com](mailto:RosanneYetemian@yahoo.com)
- Rochelle Woods, Assistant Dean, at [Rwoods@fullerton.edu](mailto:Rwoods@fullerton.edu)
- The Opportunity Center for Science and Mathematics Students (MH-488)