



Eckerd College Sigma Xi Newsletter

Summer & Fall '08

Greetings! We would like to welcome and introduce our new Sigma Xi members, who have been recently nominated and inducted into our society because of their research achievements or potential. You are invited to attend two great programs this fall; one on deep earthquakes and another on intelligence in artificial entities. Please join us!

Best wishes,
Nancy Smith, Chapter prez

Welcome New Sigma Xi Members!

ASSOCIATE MEMBERSHIP is offered to encourage young investigators with promise to continue careers in research. Individuals must, *through initial research achievement in a field of pure or applied science, show aptitude and evidence for independent research in which the research will lead to a publication or peer-acceptance of the work, and the potential associate member must intend or plan to enter a research-oriented career.* Please welcome and congratulate the following NEW associate members:

Jeffrey W. Ackley (Biology)

Hayley N. Borck (Computer Science)

Ashford S. Carney (Marine Science)

Misty R. Carr (Marine Science)

Kenneth J. Chapin (Environmental Studies & Biology)

Grant L. Olson (Marine Science)

Noura J. Randle (Marine Science)

Amy L. Santee (Anthropology)

Kimberly E. Schmidt (Env Studies & Marine Science)

FULL MEMBERSHIP is conferred upon *any individual who has shown noteworthy achievement as an original investigator in a field of applied or pure science or engineering. Individuals must have at least two first-authored, peer-reviewed papers.* Please welcome and congratulate our NEW full member **Jonathan Cohen**, Assistant Professor of Marine Science & Biology. Dr. Cohen is an invertebrate physiologist specializing in vision biology of marine crustaceans.

Questions about membership or Sigma Xi? Ask any of the Eckerd College Sigma Xi 2008-09 Officers:

President: Nancy Smith, Associate Professor of Marine Science. Email: smithnf@eckerd.edu

Vice President: Shannon Gowans, Assistant Professor of Marine Science. Email: gowanss@eckerd.edu

Treasurer & Secretary: Holger Mauch, Assistant Professor of Computer Science. Email: mauchh@eckerd.edu

Deep Earthquakes and the Secrets of Seismology

Tuesday, Sept 16 at 7PM

Want to learn more about earthquakes and their origins? Come and learn about the field of seismology on Tuesday September 16 at 7PM, when **Dr. Cliff Frohlich of the University of Texas - Austin** will address what is known and unknown today about the mechanical origin of deep earthquakes and explain why they have been used disproportionately in studies of the Earth's interior structure. Seismology as presented by Frohlich will involve raw and cooked eggs, baseballs, coffee pots, champagne bottles, diamonds, air hockey, and ultrasound. In every profession there are 'secrets', that is, basic information that is known to all who practice the profession but somehow unknown or misunderstood by the public. All who attend Frohlich's lecture, young and old, will learn a great deal about basic earthquake seismology, including much that all seismologists know but seldom tell. This evening lecture will be held in the Auditorium in the Galbraith Marine Science Building. Complimentary refreshments will be available to attendees.

There goes the neighborhood: Carbon-based and silicon-based entities learn to live together

Monday, November 10 at 7PM

This talk will be focused on the topic of artificial "life forms" becoming part of our culture. A huge example is Robosaurus, the machine that looks like a mechanical T-rex and eats automobiles. A tiny example is the molecular scale "nano-car" that has wheels the size of a molecule, and "runs" on solar power. At a more human level, the robot Asimo (from Honda) has accomplished "running" and climbing stairs. There is also a gas powered dog-like machine that can walk, run, and right itself on a patch of ice using movements that are disturbingly like that of an animal of some sort. Although the size range and physical accomplishments are impressive, it is the "minds" of the new machines that are the most challenging aspect for ethicists. After reviewing the challenges that smart robots are to traditional, human-centered ethics, Luciano Floridi's Information Ethics will be discussed, and how it includes humans, plants, and robots into a single classification of "information entities." **Dr. Keith W. Miller** is not a robot maker or a nano-technology expert. He is, however, an active researcher in computer ethics. He is currently the editor of the quarterly publication IEEE Technology and Society, and a Professor of Computer Science at the University of Illinois at Springfield.

Don't forget to renew your membership to ensure that *American Scientist* arrives uninterrupted! Active membership is critical to our chapter success. We receive approximately \$9 of the annual dues for each regular member that belongs to our chapter. This money helps us host and sponsor several science programs during the year. Here are the annual dues for 2008-09, effective July 1, 2008: Regular \$74.00, Student \$25.00, Emeritus \$37/00, Life Member \$1,475.

Highlights of the 2007-08 Academic Year

Our chapter participated in 6 events this past year, which attracted almost **500 attendees!** We would like to thank our speakers for their time and effort in sharing their research with Sigma Xi and the campus community. Funding for some of these talks was supported by the College Program Series fund. Here are the highlights:

Together, the Tampa Bay Chapter of the American Chemical Society and Eckerd College Sigma Xi hosted Dr. Yorke E. Rhodes, Professor Emeritus, Department of Chemistry, New York University, who spoke on "**Organic Chemistry in Outer Space**" on October 4, 2007. Dr. Rhodes focused on the types and varieties of molecules that have been found beyond Earth and how interstellar organic chemistry evolved.

Dr. Randall Wells of the Chicago Zoological Society and Mote Marine Laboratory spoke on "**The bottlenose dolphins of Sarasota Bay: Lessons from 37 years and 5 generations**" on November 13, 2007. He spoke to an audience of more than 200, sharing his research experiences on the world's longer-running study of wild dolphins, providing insights into their life history, natural history, social structure, ecology and health.

For the first time in recent history, our chapter collaborated with the Academy of Senior Professions at Eckerd College (ASPEC) to sponsor a joint evening program on global climate change. The evening of February 11th, 2008 began with a social networking session over wine and cheese and was followed by a talk by our speaker, Dr. Paul Carr, Air Force Laboratory Emeritus, on "**Confronting climate change and oil price increase: avoiding the unmanageable and managing the unavoidable**". Dr. Carr discussed how combustion of fossil fuels is altering the climate and how increasing fuel costs are helping to accelerate possible solutions such as the development of wind, solar, and nuclear energy sources. *The EC Sigma Xi chapter would like to thank ASPEC and SunTrust Bank for their generous support and gift to sponsor this collaborative event.*

Our chapter hosted the Association of Computing Machinery Distinguished Lecturer, Dr. Donald Costello, who spoke on "**Winning and losing wars through secret messages**" on February 18, 2008. Dr. Costello gave an interesting history and overview of cryptography and the role that this field has and will play in the future of e-commerce, business, and communications.

On Wednesday, April 2nd from 1:30 - 4:00 PM, Eckerd College held its first **Student Research Symposium**, highlighting student research. Students from every collegium were invited to participate and the symposium consisted largely of posters, but featured a few oral presentations. As an honorary society, we judged student presentations and awarded prizes to the best presentations. All winners received an official certificate of recognition from the national Sigma Xi office. The best presentation award, which included a certificate and gift certificate to Borders bookstore, was given to Courtney Nosach for her research on "**Environmental effects on the germination of the south Florida submerged macrophyte, *Vallisneria americana* (wild celery).**"

On April 9th, RIDGE 2000 Distinguished Lecturer and Keynote Speaker for the Sigma Xi 2008 induction ceremony, Dr. Julie Huber gave a talk on "**Pushing the limits: Microbial life at deep-sea hydrothermal vents**". Dr. Huber, an Eckerd alum and research scientist at Woods Hole, spoke about the ecology of microbial life in the deep sea. This talk was followed by our **Annual Spring Banquet**, during which we inducted 10 new members to Sigma Xi at *Ratchada Thai Restaurant* in St. Petersburg.



Founded in 1886, Sigma Xi, The Scientific Research Society is a non-profit membership society of more than 60,000 scientists and engineers who were elected to the Society because of their research achievements or potential. Sigma Xi has more than 500 chapters at universities and colleges, government laboratories and industry research centers. In addition to publishing *American Scientist*, Sigma Xi awards grants annually to promising young researchers, holds forums on critical issues at the intersection of science and society and sponsors a variety of programs supporting honor in science and engineering, science education, science policy and the public understanding of science.