

The St. Joseph's University Sigma Xi Newsletter

Volume 2, Issue 2

June, 2001

SJU Sigma Xi Chapter Inducts 39 New Members

Chemistry alum Dr. William Wilson, Chief Scientist of InPhase Technologies, Guest Speaker

On April 9, 2001, in a ceremony held in the Champion Student Center, the St. Joseph's University Sigma Xi Chapter inducted 39 new members in recognition of their outstanding achievements in scientific research (see list below). Of these, five people were inducted at the Full Member level and 34 were inducted as Associate Members. The distinction, as described in the Sigma Xi By-laws, is based on the demonstrated (for full membership) or potential (for associate membership) ability for performing scientific research.

One of the new Full Members of the SJU Chapter, Dr. Diana Cundell, is actually on the faculty of the School of Science and Health, Philadelphia University (formerly Philadelphia College of Textiles and Science), which does not have its own chapter.

Following the induction ceremony, Dr. William Wilson, '80, Chief Scientist, InPhase Technologies, gave a seminar entitled "Emerging broadband technologies:

continued on page 2

SJU Hosts 12th Annual Sigma Xi Student Research Symposium

Over 200 people, including more than 150 students and faculty from 15 schools in 5 states, participated.

The 12th annual St. Joseph's University Sigma Xi student research symposium was held on April 28, 2001. Over 200 people attended the symposium, which opened with a public lecture by authors and educators Dr. Philip and Phylis Morrison. Their talk, "Planets, Planets, Planets: The discovery of extrasolar worlds" summarized recent work in astrophysics which has led to the identification of more than 50 planets orbiting stars in our area of the Milky Way. Following the lecture the Morrisons signed copies of their book "Powers of Ten" and met with attendees of the seminar.

The symposium itself featured a record 79 posters presented by more than 150 undergraduate and masters students, and their faculty mentors from 15 colleges and universities in five different states. These posters included work in the areas of mathematics, computer science, and the natural the social sciences. This year,

Continued on page 3

INSIDE THIS ISSUE

- 2 Biology Dept. Awarded NSF Major Equipment Grant
- 2 Focus on Math/Computer Science Activities
- 3 SJU Develops Center to Train for Terrorist Attacks
- 4 New Computer Classroom Opened in Barbelin/Lonergan
- 5 Where will they go from here?
- 5 SJU Students Present at NCUR Meeting in Kentucky
- 6 The Benefits of Sigma Xi Membership



Dr. Mark Forman, Associate Professor of Chemistry, looks at some of the posters presented at this year's symposium

changing the way we communicate and compute". His talk addressed current and future ways in which internet access is provided to homes and businesses. Dr. Wilson became the Founding Scientist at InPhase when Lucent Technologies formed the company as a new venture to develop fast, high-capacity holographic storage technology. He holds a Ph.D. in Chemistry from Stanford University and a B.S. in Chemistry from SJU. He has authored over 100 papers and holds 12 patents.

The new members inducted into the chapter are:

Full Members

Dr. Stephen Cooper	Math/CSc
Dr. Diana Cundell	Phila. Univ.
Dr. Elizabeth A. Jaeger	Psychology
Dr. Philip Schatz	Psychology
Dr. Brian S. Hammes	Chemistry

Associate Members

Paul A. Basciano	Biology
Kelly J. Bennett	Biology
Theresa M. Booth	Chemistry
Elizabeth E. Cast	Biology
Amy Drnach	Biology
Sara L. Graveline	Biology
Nicole R. Hehn	Biology
Martin H. Kerrigan	Biology
Carisa A. Kelley	Chemistry
John A. Laino	Biology
Elizabeth F. Loutzenhiser	Chemistry
Katherine M. Mahon	Biology
Katrina M. McGeehan	Biology
Megan McKnight	Env. Sci.
Megan A. McLaughlin	Chemistry
Elizabeth L. McNeil	Biology
Michael J. McNevin	Chemistry
Derick A. Munday	Biology
Ioulia Nemodrouk	Math/CSc
Annalysa H. Nguyen	Biology
Gregory Notte	Chemistry
Gina M. Panichella	Math/CSc
Julie Rogers	Biology
William Semus	Math/CSc
Katherine J. Skalak	Biology
Melissa S. Sokol	Biology
Benjamin L. Stewart	Biology
Ryan W. Stidham	Biology
Sarah K. Toman	Bio. /Env. Sci.
Danielle Trittenbach	Env. Sci.
Daniel T. Walmsley	Biology
Justin M. Wells	Biology
Heidi J. Yoder	Chemistry

Biology Department Awarded NSF Major Equipment Grant

Nearly \$300,000 grant for state of the art electron microscopy facility for research and teaching.

This February, Drs. Christina King Smith, Karen Snetselaar and Michael McCann, of the Biology Department, submitted a proposal to the National Science Foundation's Major Research Instrumentation program for a new transmission electron microscope, an ultramicrotome and ancillary equipment and supplies. The proposal was recommended for funding with the award to begin in August of 2001.

The grant will pay for a JEOL model JEM-1010 electron microscope that will be used for research and classroom teaching by faculty in Biology, Chemistry and the Environmental Sciences program. The new microscope will be housed in the same facility as the current TEM, a 25 year old Phillips microscope which was generously donated to the Biology Department by the SJU Medical Alumni in 1994. The JEOL scope will have substantially higher resolution and will support more types of teaching and research applications than can the existing Phillips scope.

The impact of the new equipment is expected to be significant. It is estimated that each year the electron microscope and related equipment will be used by eight faculty in the natural sciences, 60 students in four different undergraduate and graduate level courses in Biology and Chemistry, and 25 to 35 undergraduate and M.S. level research students.

Focus on Math/Computer Science Activities

Math/CSc faculty receive several major grants and host a variety of workshops and activities.

Sonia Kovalesky High School Mathematics Day

Last fall, the Department of Mathematics and Computer Science sponsored its third Sonia Kovalevsky High School Mathematics Day. This event is named in honor of the first woman to receive the Ph.D. (1874) in mathematics. It was funded by a

Continued on Page 4

SJU Develops Center to Train for Terrorist Attacks

Early Responder Center receives three million dollars to develop training material focusing on psychological effects of the use of weapons of mass destruction.

The Early Responders Distance Learning Center (ERDLC) of Saint Joseph's University was founded in November, 1999 in response to the Nunn-Lugar-Domenici Act with the mission of providing state-of-the-art and accredited training for First Responders to WMD/terrorist incidents. The ERDLC is partially funded through congressional appropriations directed to facilitate cross-agency cooperation and involvement at the federal, state, and local government levels. The center has received nearly three million dollars of funding thus far, with more support slated for the 2001 - 2002 fiscal years. According to Dr. Paul DeVito, Professor of Psychology and Executive Director of the ERDLC, "We... see our mission as being passionately committed to using our diverse talents and resources in creating state of the art distance learning content and delivery embedded in psychological science to aid and strengthen our nations emergency response community."

The ERDLC creates and administers accredited Advanced Distributed Learning (ADL) courses for the emergency response community on preparing for WMD and other terrorist incidents with a specialized focus on psychological consequences. Presently, ERDLC is under contract with the federal government interagency Technical Support Working Group/Combating Terrorism Technology Support (TSWG/CTTO) for the creation and implementation of the following two web-based ADL and distance learning courses:

WMD-Psychological Impacts and Effects (WMD-PIE) Course, which supports the needs of both military and civilian personnel involved in a WMD response. Unit commanders, emergency managers, mental health professionals, clinical care providers, and elected officials will all benefit from a more thorough understanding of the psychological impacts and effects a WMD incident may have on both an

impacted population and the emergency response community. An awareness of what differentiates a WMD incident from naturally occurring disasters and how that translates into a psychological impact may assist in minimizing the short and long-term effects on people and communities.

WMD-Panic Reaction Operation (WMD-PRO) Course. This course addresses the potential for hysteria and panic, mitigating the effects, and differentiating between valid stress reactions and psychosomatic disorders associated with particular conditions of WMD incidents. These include the examination of the effects of fear of the unknown, as well as special concerns for children, elderly, and those with disabilities.

The Center, now in its second year of operation, has moved to its permanent home on the Lower Merion side of City Ave at 54th street. The staff of the center has grown to a total of seven people, including web and instructional design specialists. For more information about the ERDLC, visit their web site at <http://erdlc.sju.edu>, or contact Dr. DeVito. He can be reached by phone at (610)660-1801 or by e-mail at "pdevito@sju.edu".

SJU Hosts 12th Annual Student Symposium, continued from page 1

as in the previous several years, the Sigma Xi symposium was held concurrently with Scholarship Day", an event instituted by the Dean of the SJU College of Arts and Sciences, to showcase student research and scholarship.

The symposium owes a great deal of its success and recent growth to several corporate and university sponsors. The two major supporters were Covance Periapproval Services, a clinical research company located in Radnor, PA, and the SJU Medical Alumni chapter. Additional financial support was provided by Hitech Instruments, Olympus Microscopes and Fisher Scientific, a world-wide supplier of scientific supplies and materials. The office of the Dean of the College of Arts & Sciences and the Office of External Relations of SJU were also instrumental in supporting the symposium.

grant that the department received from the Association for Women in Mathematics and the National Security Agency. The day consisted of workshops, talks, and problem-solving competitions for high school women students and their teachers from the Philadelphia School system.

Computer Science Cooperative Program with Philadelphia Public Schools

A new initiative to improve reasoning skills in the middle school and increase the participation of students in the sciences, particularly mathematics and computer science has been started with the Fels Cluster. Dr. Stephen Cooper will be working with a select group of middle school teachers this summer to train them in incorporating the software package Alice into their courses. The work will be funded by a grant from the Philadelphia Fels Cluster.

Drs. Terry and Cooper Receive Major Grants.

Dr. Elaine Terry received a Professional Opportunities for Women in Research and Education grant from the National Science Foundation for nearly \$100,000. This award will allow her to work as a Visiting Professor at the University of Pennsylvania, from January through December of 2001, to enhance her research efforts. The award is unique in that it will give Dr. Terry the opportunity to develop an undergraduate mathematics course in her field of research, Ramsey theory.

Dr. Stephen Cooper has received a grant from the software engineering company Rational Corp. This grant, worth an estimated \$300,000, provides a 52-user site license for Rational Suite Development Studio, a software package which allows users to easily generate computer animations. Dr. Cooper plans to use this software in the development of an entry level computer programming course to have students quickly generate computer programs with a minimum of formalized training. Students will be able to make use of this software package in the new Computer Classroom (see story this page).

New Computer Classroom Opens in Barbelin/Lonergan

Computer Science and Math classes now have a hi-tech lab for programming and mathematical analysis.

Over the 2000 Christmas break, Room 225 in Barbelin/Lonergan Hall was configured to be a smart classroom and laboratory. The room is equipped with multimedia capabilities, teleconferencing equipment, and dual-bootable PCs that run both Linux and Windows. There are 24 student workstations and a state-of-the-art control podium with the ability to feature any student's work on the projection system, and to control student computers, monitors and keyboards. This allows the instructor to have different students virtually "go to the board" and run computer programs for the entire class.

The room has also been equipped with its own heating/air conditioning system, electronic window shades and a handicap-accessible workstation.

Computer Science and mathematics classes are held in the room during day and evening hours. When a class is not in session, students may use the room as a lab. Students enrolled in classes using the computers have access to the room by a "swipe card" key system. This programmable lock, similar to those found in many hotels, allows for control and tracking of student access to the facility 24 hours a day. Currently, the room is busy all hours, including weekends. A Math/Computer Science graduate assistant maintains the equipment.



Mr. David Lees, Director of Instructional Media Services, and Dr. Agnes Rash, Professor and Chair of Math/Computer Science, describe the capabilities of the new computer lab

Where will they go from here?

What's in store for the newest associate members of the SJU Sigma Xi Chapter?

The 2001 inductees of the SJU Sigma Xi Chapter will be embarking on a wide variety of efforts in the coming year which will take some of them across the country and across the world. Here, we share with you the plans of some of the newest members of the SJU Chapter.

As has always been the case with SJU students, a number of our newest associate members have opted to first engage in service work for a year or two. Hiedi Yoder is entering the Peace Corps and will be working in Africa, while Kelly Bennett and Katherine Mahon are both joining the Jesuit Volunteer Corp to as volunteer at sites in the US.

Quite a few of the 2001 class plan to enter schools of the health professions. Seven of them have been accepted into M.D. and D. O. programs. Paul Basciano will be attending Columbia University, Martin Kerrigan and Katherine Mahon (after her JVC service) will be attending Thomas Jefferson University, Ben Stewart and Dan Walmsley will be entering the Philadelphia College of Osteopathic Medicine, Ryan Stidham will be enrolled at the University of Virginia and Justin Wells will enter the U.S. Navy Medical School at Bethesda. Nicole Hehn will be entering the Veterinary Medicine program at the University of Pennsylvania and Annalysa Nguyen will enroll in the Physician's Assistant program at PCOM.

As always, there are also quite a few associate members who will be entering graduate programs. Megan McLaughlin will be pursuing a M.S. in Chemistry at Villanova. Greg Notte and Michael McNevin will enter a Ph.D. program in Chemistry at the University of Colorado, Boulder. Bill Semus will begin graduate studies for a Ph.D. in mathematics at the University of Penn. Megan McKnight, will be attending graduate school at the University of South Carolina and Elizabeth McNeil will enter a Ph.D. program in Biology at Georgia Tech.

Other new associate members will begin positions in industry this Summer or Fall. Theresa Booth and Liz Loutzenhiser have accepted positions with Merck at West Point, PA. Danielle Trittenbach and Amy Drnach, will be working with a local environmental consulting firm. Katrina McGeehan and Melissa Sokol both plan to work for molecular biology companies. Gina Panichella will begin work this Summer as an actuary at Independence Blue Cross

There are also several new members considering careers in K-12 teaching. Carisa Kelly has been accepted into a M.S. in education program at Penn State and Kelly Bennett is considering teaching science in High School after her JVC service.

As you can see, some of these new Sigma Xi members have very definite plans while others are still searching for the best path to take. One thing is certain, all of them have already become

SJU Students Present at NCUR Meeting in Kentucky

Nine students and one faculty member from the Biology Department attend and show their work.

This March, nine SJU Biology students participated in the 15th annual National Conference on Undergraduate Research. This year's conference, at the University of Kentucky, attracted over 2,000 participants from all over the United States. NCUR, which is open to students in all academic fields, encourages the participation in and recognition of research done by undergraduates. Saint Joseph's University students have attended the conference since 1987.

The conference affords students the opportunity to present their work and talk with other undergraduate researchers from around the country in a more relaxed environment than is found in most professional society meetings. This "low pressure" atmosphere is a great way for students to get used to describing and discussing their work with others.

This year's plenary speakers included Philip A. Sharp, who discovered self-splicing RNA in 1977 and was

Continued on Page 6

awarded the 1993 Nobel Prize in physiology and medicine. Another of the speakers was Gerald Smith, a National Faculty Scholar and contributor to the Martin Luther King Papers Project. These talks gave students the opportunity to meet scholars who are often referred to in their textbooks.

The nine SJU students were working on projects ranging from molecular biology to ecology and animal behavior. From the lab of Drs. Michael McCann and Karen Snetselaar two papers were presented, one authored by Eileen Rucker, '02, Carlos Carre Jr., '02 and John Dougherty, '02; and the second by Daniel Walmsley, '01. These dealt with the developmental regulation of the plant pathogenic fungus *Ustilago maydis*. Megan McKnight, '01, Sarah Toman, '01 and Danielle Trittenbach, '01, students from Dr. Scott McRobert's lab, presented a paper on shoaling behavior in fish. Ryan Stidham, '01, from Dr. King Smith's lab, presented work on the cytoskeleton of pigment cells in fish retina. And from Dr. Paul Tefft's lab, Justin Wells, '01 presented a paper on the physiology of egg hatching in the soybean cyst nematode.

The Benefits of Sigma Xi Membership

There are a number of benefits to being a dues-paying Sigma Xi member. First, part of the annual dues (\$20 for students, \$52 for non-students) comes back to the SJU chapter to help us cover the costs of our intramural grants-in-aid of research, our annual student research symposium and various other activities. Further, your dues pay for a subscription to the award-winning *American Scientist* magazine, which contains news and reviews about work in all fields of scientific research. Members also receive discounts on various goods and services, such as car rentals through Hertz, discounts on scientific journals, and many others. Members can also participate in the many Sigma Xi expeditions to areas throughout the world each year. For a complete list of the benefits of continued membership, visit the Sigma Xi web site at www.sigmaxi.org. If your membership has lapsed, you can easily renew it online or via phone. All the information you will need is at www.sigmaxi.org or you can call the membership office toll-free at 800-243-6534.

Department of Biology
St. Joseph's University
5600 City Avenue
Philadelphia, PA 19131

ADDRESS CORRECTION REQUESTED