

Pitt Chemistry Alum Awarded Nobel Prize

Last fall the University of Pittsburgh's Department of Chemistry shared in an elite honor as one of its graduate alumni, Doctor Paul C. Lauterbur, received the 2003 Nobel Prize in Physiology or Medicine along with Sir Peter Mansfield of the University of Nottingham in England. Doctors Lauterbur and Mansfield were cited for their discoveries concerning magnetic resonance imaging, commonly known by its initials, MRI. Paul Lauterbur is currently at the University of Illinois at Urbana-Champaign, in the College of Medicine, where he serves as Professor in a number of departments and Director of the Biomedical Magnetic Resonance Laboratory.



Doctor Lauterbur joined Mellon Institute in 1951 after receiving his B.S. degree from the former Case Institute in Cleveland. After conducting research in a new technique called Nuclear Magnetic Resonance (NMR) in the U.S. Army, he returned to Mellon Institute and did graduate work in the Chemistry Department under Professor Henry Frank. Lauterbur continued his research in NMR and received his Ph.D. degree in Chemistry from the University of Pittsburgh in 1962. He then took an academic position as Professor of Chemistry and Radiology at the State University of New York at Stony Brook in Long Island, where he stayed for sixteen years before joining the faculty at Illinois.

In September of 1971, Doctor Lauterbur was on sabbatical leave as president of a relatively new company, NMR Specialties, in nearby New Kensington, PA. It was there that he observed NMR signals, due to hydrogens in water, from the excised tissues of laboratory rats and first began to wonder if NMR could be used to produce images of the human body in a non-invasive manner. Lauterbur was the first to realize that the inhomogeneities which everyone had been trying so hard to remove were not entirely annoyances, but actually contained information about both the shape of the magnetic field and, more importantly, the shape

of the sample. He took this idea one step further by proposing that magnetic field gradients be applied sequentially, in different directions, to the sample of interest. In this manner, spatial information was encoded in the resulting NMR signals, and it could be decoded later to produce an image of the specimen in question. Lauterbur called his technique Zeugmatography from the Greek word *zeugma*, meaning, that which joins together. This name derived from the fact that an object could join together the two fields of the NMR experiment, *viz.* the main

magnetic field and the radiofrequency field at each particular gradient value. Although zeugmatographic images were certainly crude at the time of their initial introduction, the technique was recognized as both promising in terms of its nondestructive examination of the inside of a sample, and astonishing in that it provided information which was completely different from what NMR spectroscopists had previously been determining.

While his original name of Zeugmatography has given way to MRI, the technique has become invaluable to medical science for the study of soft tissues found in such things as the brain, heart, kidneys, and spinal cord. There are currently about 22,000 MRI instruments operating worldwide, and approximately 60 million MRI scans are performed annually.

On April 25, 2004, Chancellor Nordenberg presented Lauterbur with an Honorary Doctor of Science degree at the University of Pittsburgh commencement ceremony, where Lauterbur was the keynote speaker. His address entitled, "The Road to Pittsburgh and Beyond," gave the advice to over 6,000 undergrads to "Do whatever really excites you in your life and do it as best you can, and if you have enough luck, it will work out."

Issue 1
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Greetings from the Chair

I am pleased to announce that we have revived our Alumni Newsletter, which we intend to distribute and post on our web page biannually. A lot of exciting things have occurred in the Chemistry Department over the past three years, and I would like to take this opportunity to bring you up-to-date on the most significant of these.

Over the past five years the Department has hired twelve new faculty members, listed on page 9 of this newsletter. We also recently hired a new Assistant Chair, Brian Strohmeier, formerly at PPG and Alcoa (replacing Rebecca Claycamp, who left for a position at NIH), a new Director of Technical Facilities and Instrumentation, Ken Migliorese (replacing Greg Meisner, who left the department after twenty-seven years of devoted service), and a Computer Specialist, Jill Hart (replacing Lance Kennelty, who moved across campus to the School of Dentistry).

The past two years have also been marked by several major upgrades of our facilities. In January 2003, Phase 3 renovation of Eberly Hall was completed. The third floor of Eberly is now the home of the Coalson, Jordan, and Warriner research groups, the Center for Molecular and Materials Simulations (CMMS) computer room, and a computer lab with 30 Pentium IV PCs. This lab is used in several undergraduate and graduate courses. The Departmental Mass Spectrometry facility has moved to the second floor of Eberly Hall and is now the home of two new state-of-the-art mass spectrometers acquired with a NIH shared instrumentation grant. The Electronics Shop is in the process of moving from Chevron to the third floor of Eberly Hall. The moves of the Mass Spec facility, the Electronic Shop, and the Jordan group to Eberly has freed up space in Chevron, which will be renovated to provide much needed expansion space for our research groups.

Professor Steve Weber is serving as our Director of Graduate Studies. Steve has played a pivotal role in establishing our Industrial Chemistry Series, in coordinating our Distinguished Alumni Awards program, and is now serving as chair of the Graduate Admissions Committee. Last year we had our largest entering graduate class ever (52 students), bringing the current total number of students enrolled in our Ph.D. program to 202.

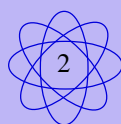
Typically about fifty undergraduates are engaged in research projects in chemistry each semester. This year, we have initiated a "Software Across the Curriculum" project to incorporate molecular modeling

software into our chemistry courses at all levels. This project is centered around the CAChe software package, which is now available through a university-wide site license. Our American Chemical Society – Student Affiliates Chapter (advised by Dr. George Bandik, Director of Undergraduate Studies) continues their long-standing efforts in areas such as outreach and tutoring and was recognized by the ACS as an Outstanding Chapter for the 2002-2003 academic year (the 15th consecutive year that our chapter has received a national award).

The past few years have witnessed a rapid growth of multidisciplinary research on campus, and the Chemistry Department has been at the forefront of these initiatives. In 1997, the University established the Combinatorial Chemistry Center (CCC), directed by Professor Peter Wipf. This was the first academic center in combinatorial chemistry. This paved the way for the Center for Chemical Methodologies and Library Development funded by NIH in 2002. In 1999 the University established the Center for Molecular and Materials Simulations (CMMS). This center provides state-of-the-art computational facilities to researchers in the Sciences and Engineering. The establishment of this center was spearheaded by Professors Coalson and Jordan of Chemistry and Balazs and Johnson of Chemical Engineering. This past year also saw the establishment of the Keck Nanoscale Molecular Electronics Laboratory in conjunction with the Department's Surface Science Center.

We were all delighted when Pitt Chemistry Alumnus Paul Lauterbur (Ph.D. 1962) won the 2003 Nobel Prize in Medicine for his work in magnetic resonance imaging (MRI). Other major kudos include the Award of \$1.2M from the Keck Foundation for establishing a Molecular Electronics Laboratory (John Yates, PI; Ken Jordan and David Beratan (now at Duke) as co-PI's), and \$9.6M from the National Institute of Health to establish a Center for Chemical Methodologies and Library Development (Peter Wipf, PI; Kay Brummond, Dennis Curran, Scott Nelson and Steve Weber, co-PI's).

In addition to reviving the Department Newsletter our Web site is undergoing an overhaul, part of which will be a revised alumni page. We hope that you enjoy the Newsletter and will visit the Web site to learn more about happenings in the Department.



Alumni Honored in 2002

On October 25, 2002, three Pitt Chemistry alumni were presented with Chemistry Alumni Awards: Mary Mancini (BS, 1974), Muttaiya Sundaralingam (PhD, 1961), and Irving Wender (PhD, 1950) attended a gala affair: a catered dinner in the Chevron Science Center's Ashe Foyer. This was the second semiannual award ceremony, the first of which was held in 2000 in conjunction with the Department's 125th anniversary. During the brief ceremony following dinner, Chairman Craig Wilcox presented to each awardee a specially designed glass sculpture crafted by Pitt alum William Cully, President, United Plate Glass. A short biography of each awardee follows:

Mary Catherine Mancini

Mary Mancini received her B. S. Degree in Chemistry at the University of Pittsburgh in 1974, Phi Beta Kappa, and entered the Medical School that September. She did her internship and residency in general surgery followed by further training in cardiothoracic surgery, all at the University of Pittsburgh School of Medicine. She blazed a trail for women in surgery, particularly heart surgery. Mancini is currently Professor of Surgery, Chief of Cardiothoracic Surgery, and Director of Cardiothoracic Transplantation at the Louisiana State University Health Sciences Center. As of several years ago she was one of five female heart transplant surgeons in the U. S. She is currently Managing Editor for the Vascular Surgery portion of the eMedicine textbook, and Editor-in-Chief of the Cardiovascular Surgery and Transplantation section of that text. She most recently completed a Ph.D. in Cellular Biology and is spending more time doing basic research—receiving major funding from the NIH.

Muttaiya Sundaralingam

Muttaiya Sundaralingam, a native of Malaysia, received his Ph.D. from the Chemistry Department, University of Pittsburgh, in 1961. After a Postdoctoral stint in the Department of Anatomy, School of Medicine, University of Washington, Seattle, he was appointed Research Instructor, Department of Biological Structure of the same University. He has held many prestigious positions including Professor and Director of Biological Crystallography, Department of Biochemistry, University of Wisconsin, Madison, and the Ohio Regent's Eminent Scholar; Professor, Departments of Chemistry and Biochemistry and Director, Biological Macromolecular Structure Center, Ohio State University – a position from which he recently retired. Among his honors are a John Simon Guggenheim Foundation Fellowship, Oxford, 1975-1976 and University of Pittsburgh Alumni Distinguished Achievement Award, 1986. He was among the top 300 of the 1,000 most cited scientists for work published from 1965-1978.

Irving Wender

After serving on the Manhattan Project, Irving Wender received his Ph.D. in Chemistry, University of Pittsburgh, 1950. Afterwards, he had an illustrious career, first in fundamental, then in applied research, as Project Coordinator, then Research Director, and finally as Head, Chemistry Division, Pittsburgh Energy Research Center, U.S. Bureau of Mines, Department of Interior. Subsequently, he was Special Advisor to the Program Director, FE, DOE, Special Assistant to the Secretary of Fossil Energy, Department of Energy (DOE), Washington, DC, Acting Director and Director, Office of Advanced Research and Technology Development, Special Executive Service, FE, DOE, Washington, DC. Since 1994 he has been Distinguished University Research Professor of Engineering at Pitt. Among his numerous awards and honors are: the H.H. Storch Award of the American Chemical Society, Fuel Division for distinguished contributions to science and utilization of coal, 1964 and the Homer H. Lowry Award in Fossil Energy, given by the Secretary of Energy, November 1988 in recognition of advancing fossil energy technology through highly innovative research on catalytic conversion of syngas to fuels and chemicals, coal liquefaction and decisive guidance and inspirational leadership in shaping research programs in government, academia and industry.



You Are Invited to the 2004 Alumni Awards Ceremony

L. Dennis McKeever (BS 1962), Geraldine S. Pinkus (BS 1961), Dennis Kleid (PhD 1972), and J. Matthew Simon (PhD 1969) have just been named as the 2004 Chemistry Department Alumni Awardees. The Awards Ceremony will take place in Chevron Science Center on **October 29, 2004**. You are invited to attend the dinner and ceremony beginning at 6:00 PM, Friday, October 29, 2004. Please visit www.chem.pitt.edu or contact Michele (412 624 8201, monaco@pitt.edu) for details on menu and local arrangements.

ACS-Student Affiliate Corner



Kermit the Frog best summed up environmental work with the phrase, "It's not easy being green." While they may not be the easiest of tasks, green practices in industry, the laboratory, and life are becoming increasingly important. Unlike Kermit's statement, I am using "green" as an adjective, which when paired with chemistry refers to the development and usage of any environmentally friendly method. The initiative of greener chemical methods is not a new idea, but one that is slowly gaining more support as both the general and scientific community realize the harms of continued fossil fuel use, the mass production of harmful chemical byproducts, and the ever growing waste created by continued consumerism.

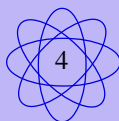
This environmental consciousness led the American Chemical Society to develop the Green Chemistry Institute as a means to educate, promote, and encourage green practices. In 1996 the first Presidential Green Chemistry Challenge Awards were presented, recognizing outstanding chemical technologies that incorporate the principles of green chemistry into chemical design, manufacture, and use. Since its inception, four academic and industrial sites in Pittsburgh have been honored, making us one of the most recognized proactively green areas in the country. It is this rich history that prompted our ACS-SA to strive for Green Chapter recognition.

While the officers of the ACS-SA discussed many different approaches to encourage green practices, one common theme became clear: education. The Green Chemistry Lecture series, which occurred last semester, provided information on greener practices by means of current example. The series featured speakers from the academic and industrial arenas who are actively promoting environmentally friendly practices and processes. This lecture series was the start of more programs that will actively educate our members, as well as the department, in this increasingly important niche of chemistry.

Our lectures were very successful, with attendance of over 60 participants at each. Dr. Robert Enick from the Department of Chemical and Petroleum Engineering at the University of Pittsburgh focused on the development of new methods for enhanced oil recovery through increased viscosity of liquid carbon dioxide. Our second speaker, Dr. Terrence Collins of the Institute for Green Oxidation Chemistry at Carnegie Mellon University, furthered the application of environmentally friendly practices currently being used in the area of green oxidation technologies. The third lecture was held March 26 and featured Dr. Jeff Salek speaking on the green initiatives currently being developed by and for Sunoco Chemicals.

Matt Lockett, ACS-SA Co-President

2004 Chemistry Graduates



Undergraduate Highlights

John Hensler, University of Pittsburgh, Class of 2004



As an undergraduate I strove to excel in academics, volunteerism, teaching, and research. My high academic standing afforded me the opportunity to participate in academic service organizations such as the Phi Eta Sigma National Honors Fraternity and the Golden Key International Honor Society. The organization in which I was most involved as an undergrad was the American Chemical Society-Student Affiliates (ACS-SA). As the ACS-SA treasurer, I participated in many community outreach programs including Saturday Science, YMCA, and Honors Organic. Additionally, I recently finished teaching my fourth semester of sophomore organic chemistry laboratory as a UTU. I have also received the ACS-SA Volunteer Award and the R.F. Zarilla Award in recognition of my contributions.

My research experience began in the summer of 2003 with an REU position at the University of Connecticut. Since the fall of 2003 I had been doing polymer research at Pitt under the direction of Dr. Toby Chapman. After graduating in the spring I began work on my Ph.D. in synthetic polymer chemistry at the University of Michigan.

Rose Eppinger, University of Pittsburgh, Class of 2004



I went to the University of Pittsburgh because of its diversity and literally endless learning opportunities. While there I was fortunate enough to take part in much of what the Pitt Chemistry Department has to offer. My sophomore year, I became involved in the Undergraduates Teaching Undergraduates (UTU) program for the general chemistry laboratories and the next year I was able to expand my teaching experience into the organic laboratories. My research experience includes both an industrial internship for the summer of 2003 at the Valspar Corporation and a Howard Hughes Medical Institute Fellowship for academic research in a laboratory. At the Valspar Corporation, I worked with acrylic emulsions for application over aluminum pet food cans. Under Dr. Stephen Weber, I recently finished working with microelectrodes as a control for lead ion concentrations in conjunction with crystalline colloidal arrays for the possible detection of lead in biological or environmental systems.

Exposure to so many different areas has allowed me to find a strong interest in analytical chemistry with biological applications. I enjoyed the industrial aspect of my internship and would eventually like to take my laboratory skills and knowledge to this type of environment. I began working at Merck in June.

Mass Spectrometry Facility Returns to Its Roots



The Auto Spec entering through the window

Since the early 1970s, the Chemistry Department has maintained modern analytical instrumentation facilities in support of both research and teaching. Recently, our mass spectrometry facility underwent a major upgrade and moved into a new facility.

The use of mass spectrometry in the Chemistry Department at Pitt began in 1970 with the purchase of a LKB-9000, the first commercially available GC-MS instrument. This instrument was located in what was then called Alumni Hall in the space now occupied by the Chemistry Library. Mr. Richard Montgomery, then a graduate student, maintained the instrument and trained its users. The instrument supported the research groups of Professors Samuel Danishefsky, Paul Dowd, Robert Levine, Toby Chapman, and Ted Cohen, among others.

From 1972-1976 the mass spectrometry facility was managed by Mr. Vance Bell. In 1974 it was moved to the thirteenth floor of the Chevron Science Center, where it was housed until 2003. Mr. Glen Herman managed the facility from 1976 until 1978, when Dr. Alvin Marcus took over. In 1984, the LKB-9000 was replaced by a VG-70 G double focusing magnetic sector instrument with a variety of ionization sources. This instrument also had an in-line GC and could detect both positive and negative ions.

In 1988, Dr. Kasi V. Somayajula became the mass spectrometry facility director. Shortly after that, two

bench top Hewlett Packard GC-MS user-operated systems were added. In 1994, a Varian CH5 instrument was replaced by a Fisons Autospec magnetic sector instrument.

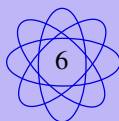
In 2003, the Department secured a \$500,000 grant from NIH for new mass spectrometry instrumentation in support of its ongoing research programs. With this funding, the facility added two new instruments: a Waters QTOF LC-MS (API hybrid quadrupole time-of-flight mass spectrometer with electrospray and APCI ion sources) and a Waters GCT GC-MS instrument (time-of-flight mass spectrometer with EI and CI sources). Also in 2003 the mass spectrometry facility was moved back to Alumni Hall (by then Eberly Hall).

Today the mass spectrometry facility, with six different mass spectrometers combining different ionization sources and analyzers, plays a critical role in the research mission of the Department. Over the years, the facility has trained many graduate students,



The new Mass Spectrometry Lab

who are now directing and conducting research in the area of mass spectrometry at their respective institutions. The facility has also served the needs of many researchers at institutions and industries in and around the Pittsburgh area.



Mellon Fellowships

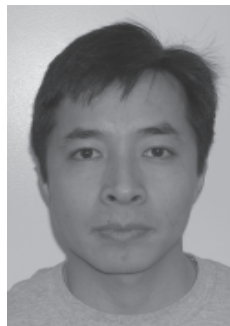
In academic years 2004 and 2005, the University Mellon Fellowship Committee awarded Mellon Fellowships to four of our top graduate students. A brief description of their work is listed below.



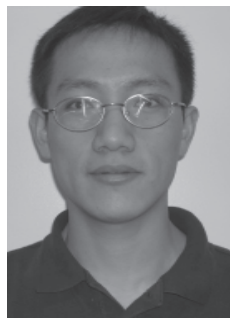
Pamela Meadows (2005, with Prof. Walker) is studying the surface denaturation of fibronectin, a protein important in cellular seeding, in the hope of improving biocompatible materials. She states, "My goal is to become a professor at a small college, and Pitt has provided me access to the training I need for this career. I have had excellent discussions with professors about research as well as different teaching philosophies to incorporate in the classroom. My training here will prove valuable when beginning my teaching career."



Larissa Stebounova (2004, with Prof. Walker) is using near-field microscopy combined with infrared spectroscopy to obtain the highest possible vibrational sensitivity for a microscope. The near-field infrared microscopy is capable of chemical mapping of macromolecules with resolution on a nanoscale. Larissa says, "The University of Pittsburgh provided me the opportunity to conduct my research in the most interesting and leading areas of science such as biochemistry and nanotechnology."



Jianjun Wei (2004, with Prof. Waldeck) is focusing on manipulation and control of the surface chemistry of electrodes by molecular self-assembly techniques including biomolecule immobilization. He is exploring electron transfer reactions of metalloproteins including the photosynthetic center. About his experience here he says, "First, studying in the Department of Chemistry at Pitt gives me a chance to arm myself with strong background training in chemistry and independent capability in research. Second, the project I am conducting takes me to the edge of what is known in my field. Third, the open environment (both faculty and students) and research collaborations offer me positive interactions with all colleagues."



Jingbo Xiao (2005, with Prof. Wipf) has focused primarily upon the target-oriented synthesis of dipeptide isosteres and incorporating them into the natural antibiotic Gramicidin S. Jingbo states, "My time at the University of Pittsburgh has presented me with an opportunity to grow as a researcher. My work within the department has exposed me to a wide range of chemistry, both inside and outside of my group and field of interest, which has allowed me to learn about and appreciate all areas of the field. I have been afforded the chance to work on an exciting and rewarding project that has challenged both my mind and laboratory techniques."

What is a Mellon Fellowship?

Andrew Mellon Fellowships are awarded to students of exceptional ability and promise who are enrolled or wish to enroll at the University of Pittsburgh in programs leading to the Ph.D. in various fields of the humanities, the natural sciences, and the social sciences. About 55 fellowships are awarded each year across 29 departments in Arts and Sciences. The award includes a stipend and tuition scholarship.

Faculty Highlights: John T. Yates, Jr. Observing Dancing Molecules on Surfaces

There is a certain fascination about watching molecules and their behavior when adsorbed on surfaces. One looks at single molecules pinned by chemical bonds to surfaces, often to periodic atomic sites on these surfaces. Such observations form a major central theme of modern surface chemistry. Understanding molecular dynamics and reactivity on surfaces provides the fundamental basis for technological control in areas such as heterogeneous catalysis, semiconductor fabrication, molecular electronics, chemical sensing, corrosion passivation and much of the new nanotechnology that is just bursting on the scene.

My group in the Surface Science Center (Eberly Hall) is actively pursuing a number of research projects that have the goal of monitoring the behavior of adsorbed molecules. We recently observed, for example, the hindered rotation of the methyl groups in adsorbed acetate. We have begun to measure the hindered rotational behavior of the phenyl ring in adsorbed benzoate. In another example, we have spectroscopically witnessed the entry of molecules into the deep adsorption wells that exist inside of single-walled carbon nanotubes, literally studying the adsorption of molecules inside of other molecules. We have probed how atomic height steps on metal single crystals specifically trap migrating molecules, and the special dissociative chemistry that then takes place at these sites. Recently, we have begun to understand how photooxidation chemistry takes place on TiO₂ surfaces, and to discover new methods to harness sunlight to cause these reactions to occur, at longer excitation wavelengths,

in the quest for passive environmental remediation methods for photooxidizing trace contaminants in the atmosphere.

Using the scanning tunneling microscope (STM), we actively identify the atomic sites on single crystal surfaces that specifically bond to molecules, including large ones like C₆₀. This work will soon be powerfully extended to extremely low temperature in a 4K STM due to arrive this month. A new facility, the nanoworkbench, features multiple STM tips which can be guided by a scanning electron microscope for the study of the electrical properties of single semiconductor quantum dots and the surfaces around them.

These studies, and others, serve as examples of the power of new measurement techniques in surface science to provide the atomic (and electronic) details about adsorbed atoms, molecules and nanostructures. A large group of

dedicated students and postdoctoral workers in my group makes all of this happen, and the result of this work has two main impacts: (1) New and exciting scientific knowledge about the behavior of surfaces is generated and published; (2) Young scientists are professionally trained to go on from The University of Pittsburgh with new skills and insights.

You are invited to visit and to see the dancing molecules. Just call 412-624-8320 to set up a convenient time.



John Yates



New Faculty: 1998 to the Present



Shigeru Amemiya
Assistant Professor
Bioanalytical Chemistry,
Electrochemistry



Leonard Kogut
Senior Lecturer
General Chemistry, and General
Chemistry for Engineers



Amy Beisler
Lecturer
Analytical and
General Chemistry



Stephane Petoud
Assistant Professor
Inorganic, Analytical,
and Biological Chemistry



Kay M. Brummond
Associate Professor
Synthetic Organic Chemistry



Sunil Saxena
Assistant Professor
Magnetic Resonance
Spectroscopy, and
Protein Dynamics



Paul Floreancig
Assistant Professor
Synthetic Organic Chemistry



Chris Schafmeister
Assistant Professor
Organic Chemistry



Ericka Huston
Lecturer
Organic and
General Chemistry



Eugene Wagner
Lecturer
General Chemistry



Kazunori Koide
Assistant Professor
Organic Synthesis,
Chemical Biology

Brian Strohmeier New Assistant Chair



Brian received his Ph.D. in Chemistry from Pitt in 1984 under the direction of Professor and former Chairman David M. Hercules. After graduating, Brian first worked in the Chemical Engineering Department at the University of Delaware as a Research Associate in Electron Spectroscopy. He returned to the Pittsburgh area in 1986 and was employed as a Scientific Associate and Technical Supervisor of the surface and microscopic analysis group at the Alcoa Technical Center in Upper Burrell, PA (1986-1998), and as a Senior Research Associate and Technical Supervisor at the PPG Glass Technology Center in Harmarville, PA (1998-2003).



In Memoriam

Rex E. Shepherd



Chemistry Professor Rex E. Shepherd, a member of the Pitt faculty since 1975, died September 14, 2003, at the age of 57. His death, likely from complications of a heart condition, was sudden and a blow to the department.

A native of Greenville, Ohio, Shepherd was a Visiting Assistant Professor at Purdue University, 1973-1975, where he had earned his B.S. in chemistry in 1967. He earned his Masters and Ph.D. degrees in inorganic chemistry at Stanford University, and completed post-doctoral fellowships at Yale University and the State University of New York-Buffalo. In 1981, he was named Associate Professor and in 1997 Professor of Chemistry at Pitt, where he taught inorganic chemistry to graduate and undergraduate students as well as general chemistry.

Shepherd was a member of the American Chemical Society, Phi Lambda Upsilon, and the International Electron Paramagnetic Resonance Society. He also served on the Board of Editors of *Inorganica Chimica Acta* (the International Journal of Inorganic Chemistry) and of *Bioinorganic Chemistry and Applications*.

Shepherd's research centered on the preparation and characterization of inorganic transition metal complexes that can serve as medicinal drugs or as models for metal ion-activated biochemical systems.

Among his professional honors were a technical writing award from the Pittsburgh Chemists Club, a National Institutes of Health post-doctoral fellowship, and National Science Foundation graduate and post-doctoral fellowships.

Jack Sharkey, Jr.



Andrew Gans (Jack) Sharkey, Jr., a pioneer in mass spectrometry and its applications to organic molecules, passed away on November 17, 2003, in Mt. Lebanon, PA. He was 84 years old.

Sharkey joined the U.S. Bureau of Mines in 1946 and from 1978-1985, he was the Deputy Director of the Pittsburgh Energy Technology Center (PETC) – at that time the largest fossil energy research center operated by the U.S. Government.

Starting in 1964, Sharkey served as an adjunct faculty member at Pitt's Department of Geology and Planetary Science where he taught two of the first graduate-level mass spectrometry courses in the country: *Introductory Mass Spectrometry* and *Interpretation of Mass Spectra*.

Following his retirement from PETC in 1985, Sharkey was named Research Professor at Pitt's Department of Geology and Planetary Science. That same year, he also joined the research faculty at the Surface Science Center in Pitt's Chemistry Department. Jack remained in these positions at Pitt until his second retirement in 1997. A highly skilled administrator, he also served as the Chemistry Department's Assistant Chair from 1986-87.

Among many distinguished awards, Sharkey received the Department of Interior Distinguished Service Award, the Department of Energy Distinguished Career Service Award, the Pittsburgh Award of the Pittsburgh Section ACS, and the ACS Student Affiliates Outstanding Service Award.

David Rossi



Long before David Rossi lived his dream of working in the space industry, he left a lasting impression as a serious-minded chemistry student at the University of Pittsburgh.

"He was a very special person," recalls his mentor, Dick Howe, now Associate Dean at the College of Arts and Sciences. "David is probably the most exceptional student that I've encountered in all my years at the University."

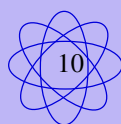
As the president and chief operating officer of Spacehab Inc., which leases research space on NASA missions, Rossi offered his alma mater one of the most unusual gifts the University has ever received: the opportunity to put experiments aboard a space shuttle.

Fulfilling that promise took the rest of Rossi's life to accomplish.

Last year that experiment – a protein crystallization project by Pitt biologist John Rosenberg – finally made it into space aboard the ill-fated Columbia mission, which broke up during re-entry on February 1, 2003. Tragically Rossi – who was diagnosed with cancer in 2001 – died a few weeks later at the age of 46.

Prior to his death, and in addition to the research aboard the NASA mission, Rossi arranged for Pitt donors to attend shuttle launches in Cape Canaveral, FL. He also began a chemistry scholarship at the University in the name of his parents, David and Rita Rossi.

Excerpted from *World of Giving*, Fall 2003



Alumni Hall Renamed Eberly Hall



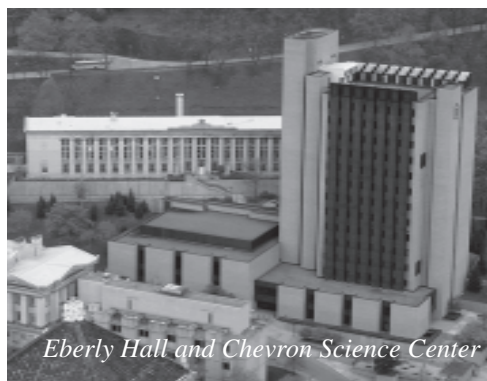
Alumni Hall - 1920

In September 1998, the University renamed Alumni Hall, Eberly Hall in recognition of the generous support of Robert Eberly and his family. This building, built in 1920, at one time included the University's Chemistry Department, the Computer Science Department, the Engineering Department, and the Chemistry Library.

By 1941 Alumni Hall had been remodeled and the entire Chemistry Department was housed there. However, in 1974 construction on a new chemistry building was completed with a \$2 million grant from the National Science Foundation and most of the department was relocated. Later to be named the Chevron Science Center, the building included an auditorium

complex named for Mr. and Mrs. Lauren Ashe, who established the Ashe Memorial Fund.

With help from donations made by Robert and his family, Eberly Hall underwent another renovation in 2002 which added more lab space, classrooms, etc. and sent the Computer Science Department to a new building. Eberly Hall is now completely occupied by the Chemistry Department, including the new Mass Spectrometry Facility, the Electronics Shop, the Surface Science Center, the Center for Molecular and Materials Simulations (CMMS), the Chemistry Library, and several faculty research groups.



Eberly Hall and Chevron Science Center

The Man Behind the Name

Robert Eberly, a prominent local businessman and generous benefactor of dozens of institutions and universities, died May 19, 2004, at his Uniontown home after a long illness. Throughout his 85 years, Eberly's priorities lay in giving both his finances and his efforts to persons he felt exhibited a strong work ethic and deserved a helping hand.

Eberly's father, Orville, worked as a miner during the Depression, but by the 1950s had found success in oil exploration and then later in banking. Robert, meanwhile, earned his B.A. in Chemistry at Pennsylvania State University in 1939, and then worked for the Navy Department during World War II. Eventually he joined his father's companies, first at Eberly Natural Gas Co. (western Pennsylvania and other states), and later as president and treasurer of GNB Corp., a holding company for his father's Gallatin National Bank.

Eberly lived his life by a "hands-on" philosophy, and became personally involved in many of the organizations that he helped. His philanthropic and political activities extended to the Boy Scouts of

America, Center for Organ Recovery and Education (CORE), the Fayette Regional Cancer Center - The Robert E. Eberly Pavilion, Fort Necessity National Park, the Pennsylvania Bankers Association, Uniontown Hospital, and the UPMC Thomas E. Starzl Transplant Institute.

Eberly and his family foundations have given away more than \$100 million to charities, in addition to the millions of dollars in scholarships at 28 colleges and universities, including California University of Pennsylvania, Carnegie Mellon University, Indiana University of Pennsylvania, Point Park University, Robert Morris College, Seton Hill College and West Virginia University. Penn State University, where Eberly earned a BA in Chemistry in 1939, was also the recipient of more than \$40 million, resulting in the renaming of their Fayette campus after him earlier this year. The University of Pittsburgh also received generous contributions from Eberly to aid student scholarships, the Shakespeare in the Schools program, and a chaired professorship in biotechnology.



Robert Eberly



University of Pittsburgh

Department of Chemistry
234 Chevron Science Center
Pittsburgh, PA 15260

www.chem.pitt.edu

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Department of Chemistry

Editor:

Amanda Matson

Contributing Editors:

Ken Jordan

Brian Strohmeier

Contributing Writers:

Matt Lockett

Eugene Mazzola

Ken Migliorese

Kasi Somayajula

Steve Weber

John Yates

Photographer:

Michele Monaco

Layout:

Carol Weber

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Tiffany Turner

Phi Lambda Upsilon (PLU), the Graduate Student Honor Society, Keeps Graduate Students Involved and Active in the Department

Phi Lambda Upsilon (PLU) is the National Honorary Chemical Society for graduate students. The Xi chapter here at the University of Pittsburgh traditionally organizes a number of important activities and social events for the Chemistry Department such as the annual new graduate student picnic, the annual Christmas party, movie nights, student poster sessions, travel grant awards for members presenting papers at conferences, and other volunteer activities.

One of the PLU highlights each year is the annual Phillips Lecture established in 1955 in honor of Francis Clifford Phillips for his service and dedication to the Department. Phillips was the first chair and professor of chemistry of the Pitt Chemistry Department. This Lecture Series is one of the University's longest running graduate led seminar series and the longest chemistry series organized by graduate students. World renowned speakers are chosen on a rotating basis from the four traditional areas of chemistry - analytical, physical, organic, and inorganic; however, the speakers often tend to cross into multidisciplinary areas such as biological chemistry,

nanotechnology, etc. We will be celebrating the 50th Series in 2005 with a symposium of four speakers (one from each area) with a dinner reception and memory album from previous speakers, students, and professors. This very special event will be held in May, 2005. The planned speakers are:

J. Michael Ramsey,
University of North Carolina (Analytical)

Daniel Nocera
Massachusetts Institute of Technology (Inorganic)

Dale Boger, Scripps Research Institute (Organic)

Martin Karplus, Harvard University (Physical)

PLU is looking for personal accounts from former Department students who may have attended past Phillips Lectures - what they remembered most, why they liked it, funny stories, and any pictures they might have (especially old programs from the 50s-80s). Accounts can either be about the speaker, the series in general, or just about PLU and being a member. Please send e-mails to PLU at plu@pitt.edu, Tiffany Turner at turnert@pitt.edu, or a letter to PLU in c/o the Department.

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