

Department of Chemistry

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FALL 2001

Trafton funds McMichael Scholarship



Steve Trafton (BS, Zoology 1968) has made a gift to pay the tuition and fees for three WSU Chemistry students. Steve and his wife, Diane, are active outdoors people who enjoy kayaking, mountaineering and beach hiking. Diane is an accomplished artist and commodities trader. Steve is retired from a career as a bank "turn around" specialist. In addition, Steve had either led or co-led more than 15 expeditions to the high Arctic and made over 50 "first ascents" north of the Arctic Circle.



Barry Rosenberg, Steve Trafton and Kirk McMichael

Steve noted that, "this scholarship is offered in appreciation of Professor McMichael's impact and inspiration on the lives and careers of his many students at WSU. As one of his students, I benefited from his contribution to my education."

McMichael, continued, page 9

Faculty & Student News



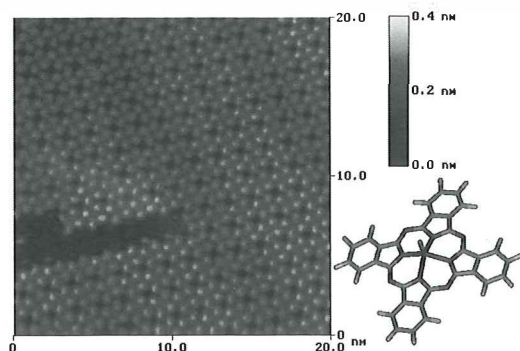
Herb Hill has been appointed associate dean of the Graduate School. Hill has been at WSU since 1976 and will continue to teach and direct graduate students in the chemistry department.

Jim Hurst spent six days in Montevideo, Uruguay, as a guest lecturer in the Dept. of Biochemistry in the Universidad de la Republica. He lectured and participated in workshops in an advanced topics course titled "Reactions of Free Radicals in Compartmented Systems," as well as presented a colloquium lecture to the faculty titled "The Chemistry and Biochemistry of Peroxynitrite." Professor Hurst is currently on sabbatical in Strasbourg, France as "Professeur Invite" at the Universite Louis Pasteur. He is working on problems in supramolecular chemistry.

Laura Matz was awarded a pre-doctoral national research service award (pre-doctoral fellowship) from the National Institutes of Health, through the National Institute on Drug Abuse. Laura is studying the determination and identification of drugs of abuse in biological fluids by ion mobility spectrometry. Her research advisor is Herb Hill.

The work of Professor Kerry Hips and his graduate students, Dan Barlow and Louis Scudiero, has been featured on the covers of the June 29th and December 21st 2000 issues of *The Journal of Physical Chemistry B*. Their images, taken with a scanning tunneling microscope (STM), show molecular complexes with enough detail to identify parts within a single molecule. More importantly, for the first time they acquired

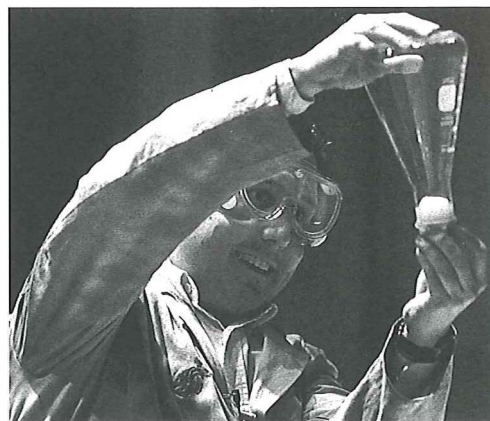
STM image of one atomic layer of vanadylphthalocyanine on Au(III).



molecular spectra from a single molecule and compared it to spectroscopic data from conventional techniques requiring more than 10¹⁵

molecules! Some chemical changes within a molecule can also be identified directly from the molecular image simply by changing the voltage at which the STM data is acquired. Hips discussed this and related work at an invited talk at the national APS meeting in Seattle, and Dan Barlow gave one of five invited talks for Hips at the national American Vacuum Society meeting in Portland, Oregon.

Heather Dion was awarded a Student Research Grant for innovative research in the clay sciences for her project entitled "Subcritical Water Chromatography Using Clay Minerals and Electrospray Ionization Ion Mobility Spectrometry." Dion was also awarded the Best Student Paper (Presented Talk) at the annual Clay Mineral Society Meeting held in June 2000. The paper was entitled "Subcritical Fluid Chromatography for the Determination of Partition Coefficients on Clay Minerals." She graduated in May, 2001 with her Ph.D. and worked under the direction of Herb Hill.



Brian Weissbart blows away the students with a demonstration at Cougar Summer Science Camp

Brian Weissbart will host another Cougar Summer Science Camp for students entering grades 9-10. Students will be on campus in July, 2001 to experience a week of events showcasing WSU and focusing on science. Participants will watch demonstrations, participate in hands-on chemistry, physics and life-science laboratories. Campers will

also take a tour of the nuclear reactor, attend special programs at the Planetarium and spend an evening at the theatre with a backstage tour. If you know a student who would like to attend, registration forms are available from our departmental homepage at: www.chem.wsu.edu

The WSU Graduate Studies Committee awarded travel grants to Randy Smith and Garry Cunningham of Professor Kevin Bray's research group. They presented their research at the spring meeting of the Materials Research Society (MRS) in San Francisco. MRS consists of more than 12,000 members from the United States and over 50 other countries. The Society is different from that of single discipline professional societies because it encourages communication and technical information exchange across the various fields of science affecting materials. Randy will be speaking on, "Pressure Tuning Spectroscopy of Mn^{2+} in Bulk and Nanocrystalline Sulfide Semiconductors." Garry will discuss, "Influence of Pressure on $5d \rightarrow 4f$ Emission Transitions."

A Graduate Student Travel Award was also made to Laura Matz. Laura participated in the Pittsburgh Analytical Chemistry Conference in New Orleans where she presented a paper titled "Detection of Drugs in Biological Fluids by Electrospray Ionization / Ion Mobility Spectrometry/ Mass Spectrometry". It is a 20 minute presentation showing that drugs can be separated by ion mobility and the difficulties and benefits of analyzing biological fluids.

Judah Friese, a graduate student working with Sue Clark, was selected to participate in the four-day Actinide Science and Applications short-course at the Institute for Transuranium Elements at the Joint Research Center in Karlsruhe, Germany.

Brian Weissbart was selected for the 2001 Honors College Faculty Award. Brian has taught Honors Chemistry, one of the more challenging classes for an instructor, for

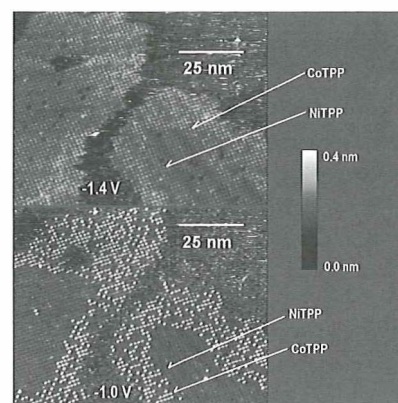
several years. His student evaluations testify to the rigor of his teaching as well as genuine concern for the success of all the students in his class.

The WSU College of Sciences announced the new recipients of three distinguished professorships. Associate professor Sue Clark, was named the Westinghouse Professor in Materials Science and Engineering.

Tom Martin, Budget/Finance Manager, for the department and the School of Molecular Biosciences was named one of five WSU Employee Excellence Award recipients for 2001.

Professor Don Matteson established a fund in the department to fulfill such needs as faculty travel, extraneous supplies, research assistance and invited speakers. Don and his wife Marianna started this particular fund because he believes that the faculty are in desperate need of recognition and support. The Matteson's have also established a graduate fellowship in chemistry to recognize excellence in research. Dan Rock, a student in Professor Jeff Jones' lab, was the first recipient of this fellowship.

In his 41st year at WSU, Ralph Yount was named the first winner of WSU's Eminent Faculty Award. He was selected for this award based on his distinguished national reputation in research and scholarship, his personal commitment to students at WSU and as one whose career exemplifies excellence. Yount is internationally recognized for his research on the molecular mechanism of muscle contraction. His research has been continuously funded for 40 years by the National Institute of Health. Yount came to WSU in 1960. The graduate of Wabash College in Indiana earned his Ph.D. in biochemistry/chemistry from Iowa State University.



Molecular selectivity in STM imaging: Cobalt(II) tetraphenylporphyrin (CoTPP) shows up as a very bright spot at -1.0 V bias, but is indistinguishable from NiTPP at -1.4 V bias.

Profiles of Three of our Undergraduate Students



Sarah Herbison

As a freshman I planned to study pharmacy and I had heard that WSU has a good pharmacy program. I eventually changed my major to chemistry because I really enjoyed my freshman chemistry classes. Another big factor in changing my major to chemistry was being introduced to Professor Sue Clark.

Dr. Clark has been a role model and a mentor. She is an amazing professor who helped me obtain a summer fellowship to work at Brookhaven National Lab. She has also allowed me to work directly with her graduate students over the past two years to get a taste of real research.

After finishing at WSU I plan to attend graduate school in chemistry. From there I would like to work for a National Lab doing environmental research.



Brian Haines

Brian came to WSU because it seemed like a nice university with a large campus that offered good research opportunities. He started doing research in the summer between his freshman & sophomore years. His freshman chemistry instructor talked to him and knew of his interest in lasers and physics and introduced him to Professor Kevin Bray. Brian has worked with Professor Bray for the past two years. Brian finds research "fascinating".

Brian was awarded two summer Honors internships which have enabled him to stay on campus over the summers and conduct research.

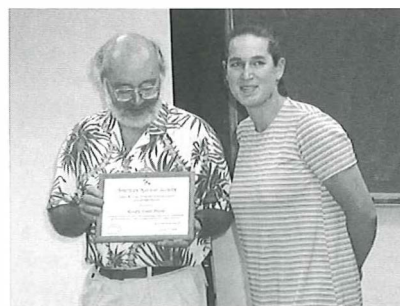
He graduated in May 2001 and plans to continue his study of chemistry in graduate school.

Rosara Payne

Rosara was awarded the year 2000 American Nuclear Society James R. Vogt Memorial Undergraduate Scholarship. Rosi was selected on the basis of demonstrated excellence in research in radioanalytical chemistry and radiochemistry and overall academic achievement.

She presented her research in April 2000 at the Fifth International Conference on Methods and Applications of Radioanalytical Chemistry (MARC V) in Kona, Hawaii. She presented an outstanding poster paper and was one of the only undergraduate students to present work at the conference attended by 250 scientists from 31 countries.

Rosi intends to pursue a Ph.D. in some aspect of radiochemistry and radioanalytical chemistry at WSU. Her choice of a career has been directly influenced by her research as an undergraduate and shows the importance of undergraduate research.



Rosara and her mentor, Professor Roy Filby (left)

Recent Retirees



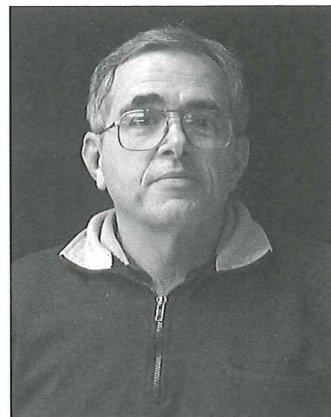
Ron Poshusta - 33 years

Ron retired in May 2000 after 33 years in the department as a teacher, researcher and administrator. He plans to spend more time at hobbies and developing new interests. One of his new interests found expression this fall when he performed as Grandpa Prophater in the Pullman Community Theatre production of the musical "Meet Me in St. Louis". He continues to teach in the department and occupies his office as usual.



Manning Cooke - 29 years

Professor Cooke doesn't have very specific plans for retirement except that he will keep up his lab and will continue research in the non-winter months.



Kirk McMichael - 38 years

After "practicing" retirement last spring we know we'll use some of our time to travel, particularly to see our kids and grandkids on the East Coast. We'll also revisit some places we've been and explore some new ones here and abroad. It's exciting to realize that we can also grasp some opportunities that we had to pass by earlier. (If you'd like to see how we spent last year, please visit our web site at <http://home1.gte.net/web22jwg/>.)

Between journeys we'll still be in Pullman. After 38 years it's home, our friends are mostly here and we enjoy the community. We'll be active in music through singing in the Idaho Washington Concert Chorale and the church choir and my piping and teaching with the Border Highlanders. I'll be indulging my tastes for reading (not studying!). We will certainly be enjoying relaxation at the float house on Lake Pend O'Reille. Potential further interests include my family's genealogy and history and reviving an old interest in model railroads. Who knows what else will crop up, so the freedom to follow an unexpected interest is very welcome. We're excited at the prospect of exploring this blend of intention and happenstance.

Gracie Levi - 21 years

My twenty one years at WSU, particularly in the Department of Chemistry, will forever be a highlight in my life. The associations I've had with the faculty, graduate students and undergraduates taught me much and endeared them to me, each in their own unique way. Following my husband's retirement, our dream for a long time has been to do volunteer service at the Sun Valley Indian School in Arizona where we hope to "give back" some of what was given to us during our youth growing up on the reservation. We are looking forward to it with excitement and anticipation.



Comments from the Chair, Ralph Yount

Greetings! In August 1998, I became chair of the Chemistry department to complete the remaining two years of Roger Willett's term. I subsequently agreed to serve as chair until 2003. Roger decided to resign as chair to return full-time to teaching and to research. Under his guidance we more than doubled our research space with the construction of the vibration-free annex, the Synthesis Building and partially remodeled Fulmer Annex. These were major undertakings that gave us new and improved space for both teaching and research. We still badly need to remodel old Fulmer. Many of you would still recognize your former labs and offices because areas of Fulmer Hall have not changed since 1934. This remodeling is high on our priority list.

By way of introduction, I came to WSU in 1960 with joint appointments in both Chemistry and Agricultural Chemistry (which later became the Institute of Biological Chemistry) and later as a member and first chair of the program in Biochemistry/Biophysics. My two degrees are in chemistry from Wabash College (A.B.) and Iowa State University (Ph.D.). My major area of research at WSU has been the synthesis and utilization of small molecules of biological interest, e.g., ATP analogs, particularly as these apply to muscle research.

As most of you realize, the field of chemistry is undergoing marked changes. I liken chemistry to a giant oak tree in which the periphery is growing rapidly but the center is not. Chemistry remains the central science with the periphery being the interface of chemistry with material, environmental and biological sciences. We have hired five new faculty members in these areas. Sue Clark in environmental and radiochemistry, Kevin Bray and Alex Li in material science and Jeff Jones and Sunny Zhou in bio-organic/medicinal chemistry. A brief description of each of

these individuals and their research interests is on the facing page. For more information on all our faculty visit our web-page at www.chem.wsu.edu.

The department continues to turn over as many of the faculty hired in the sixties retire. Since our last newsletter Glenn Crosby, Manning Cooke, Kirk McMichael, Jack Garland, Dave Moseley and Ron Poshusta have retired. We also miss very much Gracie Levi, who retired after being our front office secretary for 20 years. We thank all of them for their service and wish them well in retirement. Glenn continues to direct two of his graduate students and give speeches on chemical education throughout the country. Ron Poshusta is still teaching physical chemistry part time.

As we anticipate more retirements in the near future we intend to strengthen our research capabilities in each of the above developing areas. Clearly we want to make sure these new additions are in fields actively supported by federal or private sources as the relative support we receive from the state diminishes each year. WSU is now called a state-assisted University. Only 36% of our operating funds as a whole come from the state of Washington. This is a not so subtle plug to ask you to support our fund-raising efforts when students call you this fall. Your donations increase our ability to attract and retain outstanding students and to keep our department functioning optimally. We awarded over \$19,000 in departmental scholarships this academic year (see pages 8&9), almost entirely funded by alumni support. Thank you!

Finally, I apologize for the long hiatus in communicating with you. We promise to do better in the future. Please send us an update on your activities and we will include it in our next newsletter. The best way is to e-mail us in care of carrie@wsu.edu. We hope to compile an e-mail listing for all our alums so please send us a message.



Meet Our Newest Faculty Members



Sue B. Clark received her Ph.D. in inorganic and radiochemistry in 1989 from Florida State University under the direction of Gregory R. Choppin. Clark was a senior scientist at Westinghouse Savannah River Company, before joining the University of Georgia's Savannah River Ecology Laboratory as an assistant research scientist. In 1996, Clark joined the faculty at Washington State University. She also holds adjunct appointments at Clemson University in the Environmental Systems Engineering Department, Georgia Institute of Technology in the Health Physics program, and is an associated staff scientist at Pacific Northwest National Laboratories. She serves the American Chemical Society as Editor of the Geochemistry Division Newsletter, and as Alternate Councilor in the Nuclear Chemistry and Technology Division.

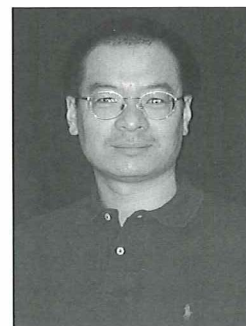
Jeff Jones received his Ph.D. in 1987 from the University of Washington, where he worked with Professor William Trager in the Department of Medicinal Chemistry. After postdoctoral work with Professor Trager and with Professor W. W. Cleland at the University of Wisconsin, he joined the faculty of the Department of Pharmacology and Physiology at the University of Rochester. He was promoted to associate professor in 1996 and joined the WSU Department of Chemistry in 1998.



Kevin Bray received his Ph.D. in Chemical Engineering in 1990 from the University of Illinois, working with Professor Harry G. Drickamer. He then joined the faculty of the Department of Chemical Engineering at the University of Wisconsin-Madison. He received two major teaching awards in Chemical Engineering at Wisconsin and he was also recently awarded an International Research Fellowship by the National Science Foundation for work at the High Pressure Laboratory of the University of Paderborn in Germany. He joined the WSU chemistry faculty in 1998.



Zhaohui Zhou (pronounced like Joe), a.k.a. Sunny, received his B.S. in chemistry in 1990 from Peking University, Beijing, China, and Ph.D. in bioorganic chemistry in 1997 from the Scripps Research Institute under Professor Donald Hilvert in the Departments of Chemistry and Molecular Biology. He did postdoctoral research with Professor Rowena G. Matthews in the Biophysics Research Division and Department of Biological Chemistry at the University of Michigan, Ann Arbor. Sunny joined the WSU faculty in 2000.



Alexander DeQuan Li received his B. S. in polymer chemistry at Jilin University, China, his M. S. and Ph. D. in Inorganic Chemistry from Northwestern University. He was a postdoctoral director fellow at Los Alamos National Laboratory in 1990 where he later became a Technical Staff Member before joining the faculty at WSU in 2000.



2001 Departmental Scholarship Recipients

Beverly Casebier Memorial Scholarship

This scholarship was established in memory of Beverly Casebier by her family: Ronald Casebier a 1955 WSU graduate; David Casebier, a 1986 graduate and Joel Casebier, a 1984 graduate and Joan Casebier.

Rebecca Hanes & Nimulrith Seth

Harvey K. Murer Memorial Scholarship

Harvey Murer was the Director of Research at the General Foods Research Center from 1940 - 1960. He earned his B.S. in agricultural chemistry from the State College of Washington in 1933.

Felice Butler, Lisa Cannon & Casey Newton

Gardner Stacy Research Endowment

Professor Stacy started his career at WSU in 1948, his work in the field of medicinal chemistry was internationally recognized. While at WSU he was voted President of the American Chemical Society.

Graduate Students:

Dan Barlow, Jason Han, Brian Clowers, Maggie Tam & Tammie Dowers

Undergraduate Students:

Curtis Schneider & Phil Ballance

Harry Batey Scholarship

Professor Batey retired in 1985 after 34 years as a professor of inorganic chemistry. He earned his undergraduate degree from Cornell College, although World War II temporarily interrupted his studies. During the war he spent three years in the Air Force as a pilot. Batey earned his Ph.D. in 1951 from Ohio State University. Upon graduation, WSC hired Harry as an Instructor of Chemistry. This scholarship was established in 1982 in appreciation for all Batey's contributions to this department.

Sarah Herbison

Art & Helen Brunstad Scholarship

Art and Helen Brunstad met while attending Washington State College. Helen grew up in Pullman, the daughter of distinguished agricultural professor George Severance. After their undergraduate studies, Art completed his master's degree in chemistry and went on to a distinguished career as a scientist, ultimately serving as safety director for the Atomic Energy Commission. Their children and grandchildren have also attended WSU, continuing the Brunstad and Severance family traditions as outstanding scholars and athletes at Washington State University.

Emily Perez, Jeremiah Halstead & Frank Laiza

Julian Culbertson Scholarship

This scholarship was established by distinguished scientist Philip H. Abelson, class of 1933, to honor the outstanding teaching career of Julian Culbertson, Faculty Emeritus and former Chair of the department.

Adrienne Thorn, Karl Sebbby & Donna Wright

Donald S. Matteson Graduate Fellowship

Don Matteson began his career at WSU as an instructor in 1958. His research and teaching have been in the area of organic chemistry. He and his wife Marianna established this fellowship to reward superior research performance.

Dan Rock

James P. and Lee Ella I. Ruck

Graduate Fellowship

Jim Ruck and Lee Ella Neff met at Washington State College as students and WSU has remained an important part of their lives. They both graduated in 1954, with Jim's degree in Chemistry and Lee's degree in Home Economics. They married in 1954. While Jim worked on his MBA at the University of Washington, Lee taught at

Enumclaw High School. Jim's career led to a number of different supervisory positions in private industry, the state corrections system and a vocational center for the disabled.

Judah Friese

Edward Wagner Memorial Scholarship

Professor Wagner was a member of this department for 26 years, from 1949 until his death in 1975. Throughout his life, Wagner championed high academic standards and was committed to graduate education and research. This fellowship recognizes students of scholastic merit with great promise in research.

Matt Douglas and Amy Palazzolo

Abelson Graduate Fellowship,

College of Sciences

Rosara Payne

Graduate School Scholars Award,

WSU Graduate School

Stanley Howell

Teaching Assistant Excellence Award

Nominees 2001, Graduate & Professional Student Association.

These Chemistry TAs were nominated by their students.

Aaron Appel

Garry Cunningham

Matt Hutchinson

Maya Leonetti

Jason Marshall

Phil Matz

Amy Palazzolo

Ben Shepler

Cary Waterhouse

Brian Wright

Carrie Gillaspie was chosen by the Graduate & Professional Student Association as a winner of a 2000-2001 TA Excellence Award.

Continuation of McMichael, page 1

The first recipient of the Kirk McMichael Chemistry Scholarship was **Barry Rosenberg**. Barry earned his B.S. from WSU in chemistry in May 2000. Barry spent a number of years working in the consumer electronics and computer industry. He returned to school to pursue a long-held dream. Barry plans to reenter the electronics industry as a researcher in solid state chemistry or chemical instrumentation. Barry is also father to three sons, ages 13, 16, and 21.

The second recipient of the Kirk McMichael Scholarship is **Donna Wright**. Donna is an outstanding TA in organic chemistry. Donna always wanted to go college, and 20 years after graduating from high school, she finally had an opportunity. She worked those 20 years in restaurant and retail management - always hopeful about pursuing a science career. She is in the fourth year of a five-year undergraduate plan to complete her bachelor's degree in chemistry with minors in geology and math. Donna is also an honors student with a foreign language emphasis. Additionally Donna a single parent of a daughter in her senior year in high school. Donna's future goals include putting her daughter through college, and pursuing a doctoral degree in biochemistry.

This year, **Laura Shireman** was selected to receive the scholarship. Laura will earn a bachelor of science degree in chemistry in May 2002, and she hopes to then pursue a doctorate in chemistry or biochemistry. Laura received a journalism degree from WSU in 1997 and was a reporter for The Spokesman-Review for two and a half years. However, her interest in science compelled her to return to school. Laura has been at WSU again for the past year, and she has enjoyed working in Professor Jeff Jones' lab since August 2000. Outside of school, Laura loves being a Girl Scout leader for a troop in Coeur d'Alene, ID and also loves downhill skiing, flyfishing and cooking.

THANK YOU

Honor Roll of Donors

The Department of Chemistry thanks you for your generous support! Every gift is greatly appreciated and we extend sincere thanks to all our alumni and friends who support our worthy students and programs through your donations.

Laureates,

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(A portion of these gifts benefited the Department of Chemistry)

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 Stephen Lamont '97 &
 Heather Dion
 Walter & Ethelyn (Ham)
 LePage
 Roland '60 & Deborah
 Lovejoy
 Lucky 13 Chapter Good
 Sam Club
 Robbe '70 & Gloria
 (Aylesworth) '73 Lyon
 L. Frank Maranville '42
 Ralph '82 & Lori Maurer
 Dennis '96 & Rita
 McKinney
 Gregory '90 & Loraine
 (Gee) Mercer
 Richard '53 & Caridad
 Mikulec
 Leo Millam '32
 Matthew Moberly '99
 Shane '93 & Janet '93
 Neelham
 Lawrence '67 & Deborah
 Nelson
 Ronald Newton
 Thomas & Eleanor (Todd)
 '45 Nixon
 Michael '81 & Mimi
 O'Brien
 Adam '69 & Kim Orita
 Brian & Ellen (Webber) '68
 Pankuch
 John '72 & Mary Louise
 Paulowski
 Richard Quiney '49
 Ernest '73 & Linda
 (Shepherd) Riedel
 Mark Roberge '99
 Thomas '70 & Janee Roche
 Charlotte Roderuck '42
 Gerald Selter '67
 Barry Singley & Linda
 Trimmer Singley '87
 Van Spohn '87
 Brian '84 & Despina
 (Tooulakou) '84 Strong

Meldon '66 & Shanna
 Talbot
 William '41 & Marian
 Teach
 Richard '53 & Margaret
 Thamm
 Harris '42 & Eleanor Van
 Orden
 Christine Vezetinski '68
 Jeff Wilcox '98
 Charles '42 & Bernice
 Wilke
 Charles Wilson '70
 Kenneth '79 & Lea Wood
 Kyung-Mi Yun

* deceased

Harold Dodgen Speaker Awards

Professor Emeritus, Harold Dodgen delivered an address on the history of Chemical Physics and Materials Science programs at WSU and presented the first annual **Harold Dodgen Outstanding Graduate Student Seminar Awards**.

Dodgen's wife, Harriet, friends, students, and faculty from the departments of Materials Science, Physics, Chemistry and Biochemistry were present at the ceremonies.

The Student Seminar Awards were instituted by the Physical Chemistry faculty to be given to the two student speakers who delivered the best overall presentations in the Chem 593/MatSci 590 seminar course. The recipients of this year's awards included Dan Barlow (Chemistry, advisor



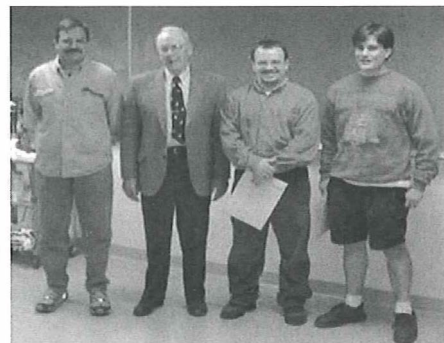
K. W. Hipps) for the presentation titled "A Scanning Tunneling Microscopy and Spectroscopy Study of Metal Phthalocyanines on Au(111)" and Cameron Peer (Materials Science Program, advisor U. Mazur) for his seminar on "Chemical Sensors." Each student received a \$50 prize and a certificate.

The new awards were named in honor of Professor Dodgen for his formative influence on graduate tutelage. Dodgen served as a physical chemistry faculty member from 1948 to 1989. He established the Radiation Center on the Pullman campus and was recognized as an outstanding teacher and researcher in the department.

Professor Dodgen was one of the founders of the

Chemical Physics Program in the early 1960's. Chemical Physics at WSU continues as one of three legs supporting the current Materials Science Program.

You can find the text of Dodgen's talk on our webpage: www.chem.wsu.edu



Louis Scudiero (left), Harold Dodgen, Cameron Peer and Dan Barlow.

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