



Chemistry Alumni News

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Linus Pauling exhibit arrives at OMSI

In This Issue

Letter from the Chair, p.3

Undergraduate Profile, p.6

Graduate Student Profile, p.7

Applied Research, p.8

Alumni Profile, p.10

Undergraduate Research, p.11

Harris Teachers-of-the-Year 1999-2000, p.6

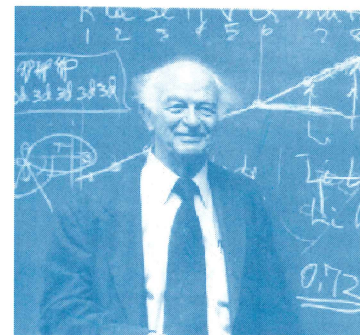


Margaret Haak



Jeff Walker

A traveling exhibit featuring the life and work of Linus Pauling, OSU graduate and two-time Nobel Prize-winner, will open at OMSI in Portland on January 8, 2001. The exhibit arrives in time for the late scientist's 100th birthday, which will also be celebrated on the OSU campus. Pauling died in 1994. The University, the Pauling family, and peace organization Soka Gakkai International, are sponsoring the traveling exhibit, "Linus Pauling and the 20th Century: Quest for Humanity."



Linus Pauling, 1991

A reception for OSU alumni will take place during the exhibit at 6:30 pm on January 31. Guests will be welcomed by President Risser and will hear a special presentation by Cliff Mead, Head of Special Collections at Valley Library. This event, hosted by the OSU Alumni Association, will be especially interesting for chemistry graduates. Materials for the exhibit have been borrowed from Special Collections at The Valley Library, where all of Pauling's personal and professional papers and models are housed. A multimedia display and individual stations will provide an in-depth glimpse into the man regarded as one of the most important scientists in the 20th century. For details about the reception, or to RSVP, contact the Alumni Association, osualum@orst.edu or 541-737-2351.

Pauling won the Nobel Prize in Chemistry in 1954, and the Nobel Peace Prize in 1962. His interests were diverse. After graduating from OSU, he described the nature of the chemical bond, elucidated the structure of proteins, helped determine the cause of sickle-cell anemia, popularized the benefits of vitamin C, and helped achieve a partial ban on the testing of nuclear weapons.

Pauling Lectures

Each year the Linus Pauling Lecture Series, begun by the Chemistry Department in 1987, brings an outstanding chemist to OSU for extended interaction with faculty and students. John Goodenough, the Virginia H. Cockrell Centennial Chair of Engineering at the University of Texas, Austin, was this year's invited lecturer. In the tradition and spirit of Linus Pauling, Dr. Goodenough has a remarkable ability to relate science to practical problems. He has shown chemists how to understand the electronic and magnetic properties of solids using concepts very familiar to them. He contributed to the development of ferrite cores and thin films for random-access memory, and designed new solid electrolytes with high conductivity for protons, alkali cations, or oxygen anions. Dr. Goodenough is the inventor of essentially all the lithium batteries used today in cell phones and laptop computers. His work in condensed matter science, combining physics, engineering, and chemistry, has been recognized with the highest award of the Materials Research Society, the Von Hippel Award, which he received in 1989. (Cont. p. 10)



Dr. Goodenough spent time with graduate students during his visit.

Contributors

The following people have generously contributed to Chemistry Department programs. These funds provide seminar speakers, graduate recruiting, travel for students to attend professional conferences, awards for academic and teaching excellence, summer support for graduate student research, and countless other academic opportunities. Many individual donations this year were received in honor of the late Professor Al Scott. We are grateful to you, alumni and friends, for over \$100,000 in support for special programs.

PRECIOUS METALS (\$500 & OVER)

Amgen Foundation
Bend Research, Inc
BP Amoco Foundation
Robert & Michelle Christensen
Carroll & Gerry DeKock
Diablo Analytical
Dow Chemical Company
Thomas & Constance Hardy
Thomas R. Hays
Ken & Lise Hedberg
Scott & Claudia Seyfert Hein
Elmer & Edna Henry
Hewlett-Packard Company
Hoechst Celanese
Manford & Mary Ryan Hotchkiss
James & Bonita Krueger
Keith and Pat McKennon
Joseph & Karen Nibler
Molecular Probes, Inc.
Robert & Barbara Ottinger
Raytech Corporation
Royal Society of Chemistry
Chester & Hannah Schink
Arthur & Betty Sleight
Colleen Spurgeon
Thomas R. Webb
George & Bonnie Zeagas

A.R. Johnson
Robert & Janet Komoto
Yvonne & Michael Landt
Lockheed Martin Corporation
J. Bartley Miaullis
Akio & Saeko Nishino
Gerald D. Nordblom
Linda S. Park
Norman & Rheta Potter
Precision Interconnect Corp
George A. Pubanz
Albert & Esther Rimbault
Celia Rockholt
Guy A. Schiehser
Paul & Edith Schrader
Michael & Brandy Schuyler
Peter Scott
Clara Shoemaker
William & Vesta Skiens
SmithKline Beecham Foundation
Southern California Edison
John & Charlene Stephenson
Tektronix Foundation
T. Darrah & Barbara Thomas
Fred L. Underwood
Warner-Lambert Co
Ulhas Warriar
Kent & Tammy Watson
Suzanne & Steven Weissman
Dwight & Doreen Weller

John C. Erkkila
Homer & Hazel Gallaher
Gerald & Mary Kay Gleicher
Maurice & Jane Golden
J. M. Greendorfer
F. Wayne Hiller
Thomas & Jessica Homewood
Meredith Howell & J. Shields
Michael & Joyce Hurley
George & Paulina Ikeda
Walter E. Jackson
Michael T. Jansky
Dudley S. Jayasinghe
Roger & Susan Jones
Linda Kenyon
Lenzie & Jean Kinyon
Mark & Julia Krackov
Lloyd & Ida Kuhn
Laurence G. Ladwig
Nadine Chauyi Lee
Jack & Cheryl Lentsch
Timothy & Maria Lesher
Roger & Elizabeth Lewis
Thomas Hoi-Chow Li
Lyle "Smokey" McAfee
Danny & Mary McCloskey
Helen & Edward Mead
Jeffrey Miller
Frend Miner

Ryan Moser
Steve & Janet Napack
Ralph Nielsen
Eleanor & George Neilson
John & Marilyn Nickel
Ernest & Inga Noble
Ernest Nolen
W. Wiley Norton
Carl & Cynthia Oda
Philips Electronics
John & Mary Rauch
Harry & Patricia Clifton Renouf
Thomas Reynolds
Deberath Kouts Ryan
LCDR Robert Schmidt
Robert E. Seevers
Michele Ruth Siggel
Robert Stalley
Melissa Marie Strait
Jeffrey & Carol Stults
Edward & Joanne Suzuki
John D. Sytsma
Milton & Joanne Thompson
Carl & Julia Torkko
Junming Tu
Lloyd & Mary Van Blaricom
David & Catherine Vieira
Robert & Patsy Woodley

TRANSITION METALS (\$100 & OVER)

James M. Anderson
Linda Youde Badcock
Ramon & Dorothy Barnes
Charles & Carol Bentz
Nancy & John Breen
Andrew P. Butler
Gilbert W. Butler
David & Beverly Castner
Robert & Sherry Taylor Cessnun
Thomas Chadwick
Stephen W. K. Chick
Melville & Karen Creusere
Peter B. DeGroot
Robert & Marian DeMattei
James & Helen Dennison
Ronald & Isabelle Dupzyk
Stephen & Patricia Ely
Peter Freeman
Kevin Gable
Herbert & Lois Hergert
Kim Wise & Larry Hutchinson

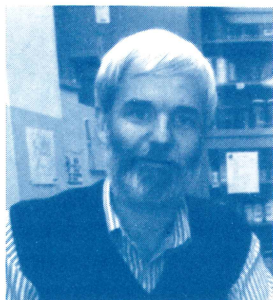
RARE EARTHS

Allegheny Teledyne Inc
Darrell & Maureen Axtell
James & Carolyn Beck
Gerhard & Elizabeth Beenen
Charles Bentz
Nathan W. Bower
Samuel & Arlene Breshears
Leonard & Sally Burda
Chevron Corporation
CIGNA Foundation
Howard & Marjory Coker
June & Curt Compton
Dale Conant
Robert Cummings
Jack & Mary Decker
Michael & Paula Dougherty
Dow AgroSciences LLC
Ronald & Lois Duiltgen
Lois Mansfield Egan
Robert & Melissa Eierman
Susan & Colin Elliott
Randal & Kathleen Erickson

The Milton Harris Legacy

Milton Harris graduated in chemistry from Oregon Agricultural College (now OSU) in 1926 at the age of 19. His interest in research took him to Yale for a PhD. This led to a distinguished career in the textile industry, followed by work at the National Bureau of Standards, at his own Harris Laboratories, and as VP for research at Gillette. Milton Harris has been a generous benefactor to OSU and to the Chemistry Department. His endowment of the Milton Harris Professorship of Materials Science and several research and teaching awards in his name have made a big difference in the department for over a decade.

On January 1, 2000, \$1.9 million from Dr. Harris' estate was dedicated to the Chemistry Department. The generous gift provides much-needed flexibility for investing in people and programs that strengthen the department and enhance the overall learning experience of students pursuing a degree in chemistry. This year, new awards and graduate fellowships for excellence in research have been bestowed in Dr. Harris' name.



Letter from the Chair....

It is a pleasure to report on some of the highlights of a successful year for the OSU Chemistry Department. The millennium began with a bang as we received a \$2,000,000 endowment from a trust left by Dr. Milton Harris '26. This large gift, coupled with generous contributions from other alumni and friends, has enabled us to maintain a high quality seminar program, the Linus Pauling Lectures, scholarships for undergraduate and graduate students, and other activities that connote an outstanding program. I thank all of you who have contributed over the last year and attest that your help has made a difference.

Several faculty members have received promotions and awards over the past year. **Wei Kong**, who received a prestigious Sloan Fellowship in March, was also promoted to associate professor with tenure. **David Horne** and **Vince Remcho**, who joined the Department two years ago as associate professors, were granted tenure. **Alex Yokochi**, Director of the OSU X-ray Crystallography Facility, was promoted to Assistant Professor, Research. **Jim Ingle** received the Dar Reese Excellence in Advising Award, recognizing his long-term service as chemistry's head advisor and his creation of our new undergraduate curriculum, "Chemistry with Options!" This award was established in honor of **Dar Reese**, one of Chemistry's legendary professors who retired in 1980. **Chris Pastorek** won the College of Science's Olaf Boedtke Award for Excellence in Advising.

We have had several departures in the last year. **Steve Albrecht**, an instructor in general chemistry from 1994-2000 and winner of several teaching awards, retired last spring. In the teaching laboratories, **Dean Link** retired after 15 years of outstanding service to the Department, and **Merri Martin** left for a position in research and development. In the electronics shop, **Jim Swirczynski** left to join an engineering firm in Eugene. Finally, I note that two of our emeritus faculty

members passed away during the last year, **Max Williams** and **Al Scott**.

Our external Advisory Board continues to provide valuable perspective and advice to the Department. Continuing members of the Board are OSU Chemistry alumni Dwayne Friesen (Bend Research, Inc.), Mike Gilbert (Omneon Video Networks, Inc.), David Hackleman (Hewlett Packard Company), Tom Hardy (Amgen Inc.), Karen Nickel (California State Department of Health), Barry Sudbury (Clorox Company, retired) and Sheri Tonn (Pacific Lutheran University). Steve Gould, an OSU Chemistry faculty member from 1982 until 1997 and now Executive Director of Natural Products Drug Discovery at Merck & Co., Inc., joined the board last year.

Two years ago the Department selected three areas in which to focus its efforts for growth in research: areas of chemistry important in biology, the environment, and materials. At the time we established these "research focus areas," we felt that they would complement other strengths at the University and would improve our competitiveness for funding of our research programs. The Department has received approval to fill new positions in two of these areas during 00-01 academic year. One position is in Biological Chemistry/Mass Spectrometry and will complement the existing strengths in the University's Center for Gene Research and Biotechnology. The other position is in Organic Environmental Chemistry. This is a joint venture among the Departments of Chemistry, Environmental and Molecular Toxicology, and Crop and Soil Science, and will support a developing graduate curriculum in Environmental Chemistry as well as add to the research program in that area. In our third "research focus area," Materials, **Doug Keszler**, and **Art Sleight** have teamed up with faculty members in Physics and Engineering on two very large projects and have been successful in obtaining over \$2,000,000 for the study of Transparent Conductive Oxides and Electroluminescent Displays.

Our first full academic year with the new undergraduate curriculum, Chemistry with Options, has been a success! In addition to the traditional ACS accredited BS degrees with advanced chemistry and advanced biochemistry options, we now offer curricula that combine chemistry with biochemistry, business, chemistry education, chemical engineering, environmental chemistry, materials science, or

premedical studies. After the first year, approximately 15-20% of the chemistry majors are in one of the new options. We acknowledge our Advisory Board for its encouragement in making these curricular changes. **Walt Loveland** has successfully introduced three new totally web-based courses, Environmental Chemistry; Energy, Technology and Risk; and Computer Programming for Scientists. With these courses, Chemistry is among the leaders in delivery of distance education at OSU.

In the past academic year, chemistry undergraduates were awarded more than \$30,000 in scholarships from the Department and the College, and we awarded more than \$50,000 in scholarships to graduate students. The faculty, and of course the students, appreciate the generosity of the many alumni, family, and friends, who have made contributions to the Department or to one of the scholarship funds.

In the last year, the Department awarded eleven BS degrees, two BA degrees, five MS degrees, and five PhD degrees. In almost every case, these graduates have moved right into graduate schools, post-doctoral appointments, or jobs. Our graduates are in high demand and generally go on to successful careers. As I said when I took over the Chairmanship, the decision was made much easier knowing that I was inheriting such a dedicated faculty. I attribute much of the success of our graduates to the commitment of the faculty.

It was a pleasure to hear from several of you during the past year. We like to hear from our former students, so please take a few minutes to tell us how you are doing. If you are in the area, please stop by. Also, we invite you to attend the OSU Alumni Association Reception to be held at the Pauling Exhibition at the Oregon Museum of Science and Industry (OMSI) in Portland on **January 31, 2001**. Many faculty members plan to attend this event and welcome the opportunity to renew contact with our alumni.



Michinao Hashimoto
Nagoya, Japan

A **Jesse Hanson Scholarship**, \$500, for a science student showing academic strength, potential for success, and service to the University, was presented to **Michinao Hashimoto** by the College of Science. Hashimoto also received a **First Year Chemistry Student CRC Award** from the Chemistry Department.

The **Carroll DeKock Scholarship**, for \$1500, was awarded to **Sara Breitenbach**, a sophomore chemistry major with an outstanding academic record. Sara has also worked on summer research projects in the department.

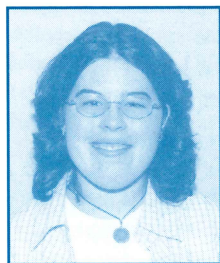


Sara Breitenbach
Medford, OR



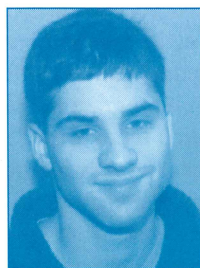
Matthew Reeves
Salem, OR

Milton Harris Scholarships, for \$500 each, were awarded to **Matt Reeves** and **Emily Simpson**, chemistry majors with strong leadership skills and excellent academic records. Emily also received the **Phi Lambda Upsilon Award** from the Department of Chemistry for outstanding performance in the Chemistry 334-6 sequence.



Emily Simpson
Cottage Grove, OR

The **Science Alumni and Friends Scholarship** of \$500 was awarded to **David Volkov**, a senior chemistry major, during the College of Science awards luncheon. This award is funded from many small donations and is given to a science major with an outstanding academic record.



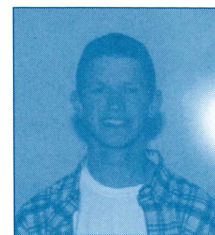
David Volkov
Salem, OR



Meadow Anderson
Corvallis, OR

This year's **Merck Outstanding Senior** was **Laura Meadow Anderson**. Meadow was an undergraduate TA in the honors course during her senior year and earned the respect of students for her patience and teaching skills. Meadow is now teaching science in Indonesia.

Undergraduate Awards



Derek Hammill
Grants Pass, OR

Peter B. Culter Memorial Scholarships for junior or senior chemistry majors were awarded for the first time in May 1999. The honor includes a stipend of \$1500. Two new recipients were named this year during the College of Science awards luncheon, **Derek Hammill** and **Jason Schindler**. Last year's award to **Amy Chan** of Albany, OR, was renewed for a second year.

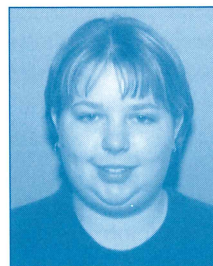


Jason Schindler
Eagan, MN



David Camoriano-
Nolasco
Tegucigalpa, Honduras

Colleen Spurgeon Scholarships are funded each year by Dr. Spurgeon in appreciation for the scholarship help she received as an undergraduate. Dr. Spurgeon now works for the US Justice Department DNA laboratories in the San Francisco Bay Area. This year **David Camoriano** and **Jessie Hartford** were the recipients of \$750 awards.

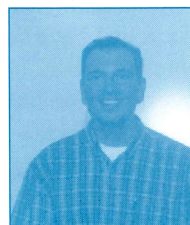


Jessie Hartford
Yamhill, OR

Wyatt Tenhaeff received the **First Year Chemistry Student CRC Award** at the May Departmental Awards Tea. He and Hashimoto received a copy of the *CRC Handbook of Chemistry and Physics*.



Wyatt Tenhaeff
Springfield, OR

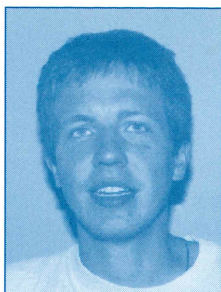


Luke Lavis
Jacksonville, OR

Luke Lavis, who began working for Molecular Probes in Springfield, OR after graduation in March, was honored with the **American Institute of Chemists Foundation Award for Outstanding Senior Chemistry Major**. Luke received a certificate and student membership in the AIC.

At the All-University Recognition and Awards banquet, May 31, further honors were bestowed on two chemistry majors. **Amy Chan** was a finalist for the **Clara H. Waldo and E.A. Cummings Outstanding Student Award**, and **Michinao Hashimoto** received a **Drucilla Shepard Smith Scholastic Award** for earning a perfect 4.0 GPA.

Graduate Awards



Dominik Reusser
Liebefeld, Switzerland
1st Year Graduate Student
William J. Ingram Memorial
Fellowship, \$500



Martha Degen
Montague, MI
2nd Year Graduate Student
Courtney & Dorothy Benedict
Fellowship, \$1,000

Milton Harris Laboratory TA
Annual Award, 1999-2000, \$150

Melissa Schultz
Sunghwan Kim
Jennifer Stone

Milton Harris Research Award, \$250



Ana Barrios
Guatemala City, Guatemala



Gabriela Chirica
Cluj Napoca, Romania



Xianzhao (Shawn) Peng
Zhengzhou, P.R. China



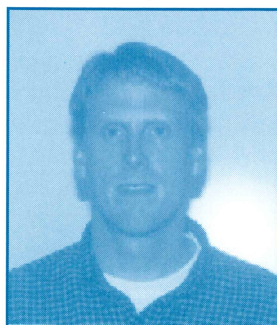
N.L. Tartar Summer Research Fellowships:
(l-r) Scott Allen, Eric Brown, Tammy Amos, Josh Hansen, Martha Degen, Eric Korf, Kurt Sundermann, Chris Lincoln, Pat Vallano and Sunghwan Kim (not shown).



Harris Summer Research Fellowship: (l-r) Catalin Doneanu, Michael Tassotto, Nicu Vulpanovici, and Jeff Barber (not shown).



George Law
New York City, NY
Minority Pipeline Support
Fellowship



Tony Masiello
Spokane, WA
Sports Lottery Scholarship, \$4500



Jeff Barber
Delran, NJ
Phi Gamma Delta Educational
Foundation Scholarship, \$1,000



MooYoung Kim
Seoul, Korea
David Shoemaker Summer Research Fellow-
ship for Outstanding
Senior Graduate Student

Milton Harris Graduate Teaching Awards, \$50

Fall 1999
Karen Castle, Ch 221
Jackie Wirz, Ch 224H
Tony Masiello, Ch 464

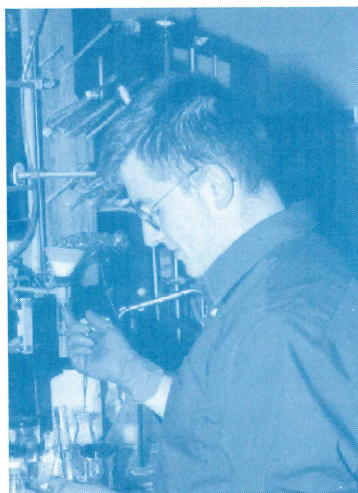
Winter Term 2000
Jeff Barber, Ch 122
Mike Tassotto, Ch 462

Spring Term, 2000
George Law, Ch 122
Chris Lincoln, Ch 337
Melissa Schultz, Ch 223

Undergraduate Profile

Pavel Nagorny

In August 1998, Pavel Nagorny moved from the Ukraine with his family to be near his grandfather in Salem. He had completed his studies at Physics-Mathematics School #75, and had attended Kharkov State University for a brief period. He attended Chemeketa Community College for one year and then transferred to OSU in fall 1999. In one year, he has made a big impression on his professors.



At the College of Science Spring Awards Luncheon, Pavel was honored with the Dean's Scholarship in the Natural Sciences for outstanding achievement in chemistry. This award covers full resident tuition for one year and is based on overall academic performance. Pavel also received the Undergraduate Analytical Chemistry Award in the Department of Chemistry, based on his remarkable standing in the junior year analytical chemistry course sequence. This award provides a year's subscription to the journal *Analytical Chemistry*, along with membership in the Analytical Division of the American Chemistry Society.

This summer Pavel worked in the organic chemistry laboratories of Prof. James White on a sugar/carbohydrate problem. He studied the toxin *polycavernoside A*, synthesizing the sugar part of this 3-part compound. After completing 75% of the steps necessary to synthesize the molecule this summer, Pavel expects to complete the work during the fall. He hopes that his senior year will provide challenges and opportunities that will prepare him for graduate school.

Bachelor of Science, Bachelor of Arts

Faron Anslow, BS, attends graduate school in Calgary, AB
L. Meadow Anderson, BS, teaches science in Indonesia
Hue Michelle Chau, BS, attends graduate school at PSU
Scott Dobson, BS, attends graduate school at OSU
John Hefley, BS, works for Kodak in Medford
Rebekah Hoerauf, BS, works for Tec Labs in Albany
Daisy Hubbard, BS, works for CH2M Hill in Corvallis
Christopher James, BS, works for Synthetech in Albany
Kameyo Johnson, BA, attends graduate school at Purdue
Luke Lavis, BS, works at Molecular Probes in Springfield
Andrew Ramage, BS, works at TCI America in Portland
Evan Rougeux, BS, works at Borden Chemical in Springfield
Lisa Stephenson, BA, moved to the east coast to work.

Teachers of the Year, 1999-2000

Margie Haak, an instructor in general and laboratory chemistry courses, was recognized for her versatility, her ability to organize many different classes successfully, and her management of several outreach programs throughout the year. Margie graduated from OSU in 1981 and earned an MS in spring 2000.



Jeff Walker, organic chemistry instructor, was recognized for going out of his way to provide students with every opportunity to succeed, and for accommodating growing numbers of students while exhibiting outstanding teaching skills. Dr. Walker came to the department four years ago from Toronto. The award carries a \$300 stipend.



Fond Farewells.....

The Department has said good-bye to five members of its classified and teaching staff this year. **Jim Swirczynski**, Shops Supervisor, and **Ted Hinke**, Machine Shop Foreman have taken jobs in Eugene. Lab Assistant, **Merri Martin** now works at AVI BioPharma in Corvallis. Storekeeper **Dean Link** and Senior Instructor **Steve Albrecht** retired in June. We wish them well and will surely miss them all.

Warm Welcomes.....

Kristi Edwards joins the department as the new Science Lab Preparator for general chemistry. Kristi brings experience from her work at the EPA labs, OSU Civil Engineering labs, and Hewlett-Packard. She will be responsible for chemical preparations and laboratory set-ups in the general chemistry courses.



Meg Green began work on the first day of classes this fall as the Laboratory Assistant in Gilbert Addition. She comes to us from the analytical laboratories at CH2M Hill. Meg will be in charge of organizing the operations of the three issue rooms, and will help with laboratory preparations in the general chemistry courses.



Classified Employee of the Year

Karen Kelly was awarded the Staff Service Award for 1999-00 for the friendliness and finesse which she exhibits in managing all aspects of her job at the front desk. Karen has been with the department for 3 years.



Advanced Degrees 1999-2000

Master of Science

Kezia Emerald (Dr. Loveland)

Chyi-Shiun Li (Dr. Lerner)

Margaret Haak Martens (Dr. Herrick, U of O) is an instructor in the Department of Chemistry at OSU.

Stephanie Ness, (Dr. Gable) *Evidence for a Stepwise Mechanism in the Cycloreversion of Rhenium Diolates.*

Sanchai Prayoonpokarach, (Dr. Ingle) *Evaluation of Sampling/Preconcentration Techniques and Pyridine Derivative Reagents for Fluorometric Determination of Chloroform and TCE in Water.* Sanchai will continue his studies toward a PhD in the department.

Doctor of Philosophy

Tom Gannon, (Dr. Watson) *Time-of Flight Scattering and Recoil Spectrometry (TOF-SARS) Applied to Molecule Liquid Surfaces: A New Approach to Surface Composition and Orientation.* Dr. Gannon works at FEI Corp. in Westfield, MA.

Cheryl Moody-Bartel, (Dr. Field) *Occurrence and Distribution of Perfluorinated Surfactants in Groundwater Contaminated by Fire Fighting Activity.* Dr. Bartel has begun a post-doctoral position at University of Toronto with Dr. Scott Mabury.

Brian Logue, (Dr. Westall) *Optimizing the Performance of Fe(O) Permeable Reactive Barriers: Kinetics of Organic Contaminant Reduction on an Iron-Oxide Coated Gold Electrode.* Dr. Logue is fulfilling his ROTC active duty commitment in the Chemical Corps at Ft. Leonard Wood, MO.

Karen Castle, (Dr. Kong) *Photochemistry of Molecules Oriented with a Uniform Electric Field.* Dr. Castle has begun her new postdoctoral research associate position at the Air Force Research Lab, Hanscom Air Force Base, Space Vehicles Directorate in Bedford, MA.

Graduate Student Profile Tammy Amos



Tammy Amos, a graduate student in materials science, earned a BS degree in chemistry from the University of Idaho, Moscow. She became interested in pursuing an advanced degree after working as an undergraduate research associate at the University of Idaho. Tammy says, "the main things that attracted me to OSU were the active collaboration of scientists from many different fields, the state-of-the-art technology that was available throughout the department, and the beautiful state of Oregon." She joined the department in the fall of 1996 and began research with Prof. Arthur Sleight in the summer of 1997.

Tammy's research interests focus on the synthesis and characterization of negative thermal expansion oxides (compounds that shrink when heated). These oxides can be used to manufacture materials with controllable thermal expansion. Applications are found in the electronic industry, thermal shock-resistant cookware, or any instance where the need for tailorable expansion properties is important.

During her third year, Tammy won a Minority Graduate Student Pipeline Support Fellowship that allowed her to spend a full year on research, uninterrupted by teaching duties. As Tammy's research began to produce results, she presented talks and posters at the Graduate Conference held at OSU, winning several awards for her presentations. Tammy also has presented research highlights at several professional conferences, most recently at the 2nd International Conference on Inorganic Materials at the University of California, Santa Barbara.

In addition to her graduate research, Tammy served as a graduate teaching assistant for the department. She enjoys teaching and has received two teaching awards given in the Department of Chemistry, the Milton Harris Teaching Award and the Laboratory Teaching Assistant Award. As a member of Iota Sigma Pi, a national honorary society for women chemists, Tammy participates regularly in outreach programs that promote science education in the community.

Tammy was recently awarded a National Research Council Postdoctoral Fellowship. She will work at the Center for Neutron Research at the National Institute of Standards and Technology (NIST) in Maryland after completing her PhD program this fall.

For photos of Department Activities, visit our website

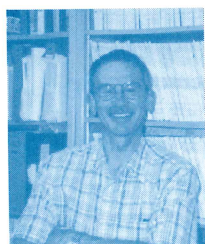
www.chem.orst.edu

Faculty News

Christine Pastorek, senior instructor and advisor in chemistry, was awarded the **Olaf Boedtker Award for Excellence in Student Advising** at the Fall 1999 College of Science faculty meeting. Chris' commitment to the students continues to be a key factor in the quality of our chemistry-major program. We appreciate her dedication and hard work, and are happy to see her recognized for her outstanding efforts.



Wei Kong was selected as an Alfred P. Sloan Research Fellow. This is an extraordinarily competitive award, involving nominations for most of the very best young scientists from around the country. Selection from among this remarkable group of nominees clearly shows the high esteem in which her work is held by her fellow scientists. The Award provides \$40,000 funding for her research during the next two years.



On University Day, September 18, **Jim Ingle** was awarded the **Dar Reese Excellence in Advising Award**. With this honor, the University recognized his extraordinary service in many aspects of advising, including being head advisor in Chemistry for the last 12 years, leader of the recent curriculum revision that brought "options" into the

Chemistry major, and creator and webmaster of the Chemistry advising website. Jim has served students and the Department above and beyond the call of duty in these roles, and we appreciate his dedication to the job.

Commercially Important Chemistry Research at OSU

"Better living through chemistry!" That was Monsanto's motto during the early 60s. Certainly the chemical revolution has had a huge impact on the way we live today. Expanding technological markets 40 years later provide new avenues of commercially important research for chemists at OSU. Two chemistry faculty members give us a glimpse at the ways that OSU is taking part in the newly defined technology revolution.

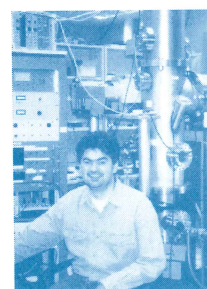
David Horne, Associate Professor of Organic Chemistry, is exploring marine sources of natural products which show promise in the therapeutic treatment of osteoarthritis (OA), the most common form of degenerative joint disease among Americans. For some sufferers of OA, the typical end-stage clinical picture includes complete erosion of the weight-bearing articular cartilage. This frequently requires total joint replacement. There is an urgent need for new therapeutics that slow joint degeneration caused by OA, and the bioactive materials found in marine metabolites may provide this.



Members of Horne's lab are working with debromohymenialdisine (DBH), a compound that possesses interesting properties for the treatment of osteoarthritis. DBH, isolated from the sponge *Stylotella*, has been shown to slow the progression of OA in guinea pigs. An obstacle to the development of DBH is the fact that, in order to obtain the amount of DBH needed for pre-clinical trials, nearly 20 tons of sponges would be required. This is clearly unacceptable from an ecological standpoint.

Dr. Horne's group has developed a practical synthesis of DBH that ameliorates the supply problem. Their synthesis of this challenging alkaloid is characterized by elegance and simplicity. In conjunction with Horne's research, Genzyme Corporation, a biotech company located in Cambridge, MA, is developing DBH as an OA drug. Genzyme and OSU have entered into an option agreement to license the synthesis technology for use in OA research and development. The commercial importance of this research for pharmaceutical applications will spawn further syntheses of marine natural products in the Horne lab.

Max Deinzer, Professor of Organic Chemistry, and members of his lab developed a Gas Chromatography/Electron Monochromator-TOF-Mass Spectrometer to study mechanisms in ECNI-MS ion formation. NIH/NIEHS began funding the construction of this instrument in the early 90's for the detection and quantitation of electron-capturing chemical pollutants, hoping that it will give results of wide ranging benefit to environmental health and biomedical sciences. The most significant result from this project to date is new information about mechanisms of negative ion formation in the gas phase. The practical benefit from this research is a new mass spectral method that accurately identifies and quantifies trace amounts of chemicals of environmental significance.



Catalin Doneanu in the Deinzer Mass Spec Lab

Deinzer and his group have achieved picogram-level sensitivity using two-dimensional electron-capture negative-ion mass spectrometry. Since 1994, when this new instrument was introduced, several improvements have been made. With further support from JEOL USA, which licensed the technology from OSU and commercialized it, Deinzer and his colleagues have attached an electron monochromator to a mass spectrometer that accepts the output of a gas chromatograph. This allows them to fine-tune the electrons to those unique resonance energies at which each electro-active molecule captures electrons, thereby making the instrument very specific for just the molecules of interest. With the addition of gas chromatographic retention times, the fourth dimension of analytical information becomes available, which gives the analyst the capability of unambiguously identifying any compound that captures low energy electrons.

Deinzer's research efforts are being copied in other laboratories, as the new technique and instrumentation gain recognition. Two patents have been issued for Deinzer's instruments so far. In the future, Deinzer and his research team will adapt the electron monochromator to analyze electron capturing modifications on biopolymers, particularly those from post-translational modifications of proteins.

Alumni News

'40's

F.L. VanVeen, BS, MS '42, went on to complete an MD and worked at Los Alamos, NM, in atomic chemistry. He has now retired and resides in Chattaroy, WA.

'50's

Ersel Arthur Evans, PhD '50, retired Vice President and Technical Director of Westinghouse, Hanford Division, lives in San Diego. During Dr. Evans' 37 years in the nuclear power industry, he received the Westinghouse Order of Merit, a DuPont Fellowship (1950-51), and the Mishima Award of the American Nuclear Society (1995). Dr. Evans designed and patented fuel elements for the Fast Flux Test Facility at Hanford, a sodium-cooled test reactor.

Richard Hermens, MS '57, E.C. Gilbert's last graduate student, completed his PhD at the University of Idaho in 1963, taught 3 years at Millikin University in Decatur, IL, and then joined the Chemistry Department at Eastern Oregon University. He will retire in June, 2001 from EOU. In 1999 he was awarded a Chemical Manufacturer's Catalyst Award (\$5,000) for outstanding university teaching.

Wayne H. Yunker, BS '57, passed away September 15, 1999, in Richland, WA. Both Dr. Yunker and his wife, Elaine Scudder Yunker, graduated from OSU.

'60's

Dr. Paul Hudrlik, BS, '63, Professor of Chemistry at Howard University, received the (\$7500) 2000 National Millennium Teaching Award, presented in ceremonies held at the White House in September, 2000.

'70's

Sheri Bartel Tonn, BS '71, is Vice President of Finance and Operations at Pacific Lutheran University where she has been on the faculty for 20 years. She manages the budget and endowments and is responsible for Human Resources, the Business Office, and Plant, Dining and Auxiliary Services.

'80's

Ken Bomben, PhD '81, is Manager of Contract Procurement for Physical Electronics, a division of Phymeterics, in Eden Prairie, MN. His email is: kbomben@phi.com. His daughter is a biology major at OSU

Jan Cammack, PhD '86, teaches organic chemistry at Chemeketa Community College and outdoor camping classes at a summer camp. Each year she brings students to visit OSU and Dr. White's chemistry laboratories.

Robert Waddle, MS '89, is Operations Superintendent for the City of Everett, WA.

'90's

Belaid Mahiou, PhD '90, supervises and trains production crews, including several OSU student interns, at AVI BioPharma, Inc. in Corvallis.

John Coddington, BS '93, completed a PhD (12/97) and a 2-year post-doc in bio-inorganic chemistry at WSU. He now a manager at Anatek Labs, Inc., a lab specializing in herbicide/pesticide analysis in Moscow, ID.

Scott Davis, BS '96, completed an MS in organic chemistry at UCLA in 1997 and UCLA Law School in May 2000. He is

a law clerk for the Hon. A. Howard Matz, US District Court for the Central District of California.

Brandi Hodgson, BA '96, earned an MS in Environmental and Occupational Health from Calif. State Univ. at Northridge in 1998. She is safety training supervisor for U.S. Borax, Port of Los Angeles.

Carla Hinrichs, BS '96, is document control coordinator at Oxis International in Portland.

Ken Van den Berghe, MS '97, is a Photolithography Process Engineer at Hyundai Semiconductor America in Eugene. He and his wife have two children, Alexandra and Quinton.

Mike Conway, BS '98, works on chemistry application computational software at da Vinci Technologies Group, Inc., in Corvallis.

Nick Drapela, PhD '98, an Assistant Professor at Colorado College, is working toward the synthesis of compounds known to inhibit the growth of human breast cancer cell lines. He is a mentor in a national program to encourage minority students to pursue academic careers.

Greg Peterson, PhD '99, works at Scientific Materials in Bozeman.

Brian Jones, PhD '99, completed an MS in Chemical Engineering and will work at Hewlett-Packard in Corvallis.

Jeremy Bishop, BS '99, is a graduate student in forensic sciences at George Washington University in Washington, D.C.



Allen B Scott

Oct 7, 1915-May 15, 2000

The department lost one of its most dynamic former faculty members this spring, Allen B. Scott, professor emeritus at OSU. He married Ruth Carlton, also an OSC graduate, in 1937. He completed his PhD at the University of Washington in 1942. He returned to OSU to join the department as assistant professor, but was called into active duty with the Army. His WWII military service included two years in Chemical Warfare Services and a Bronze Star for service with the 70th Infantry Division in combat.

Returning to OSC in January 1946, Dr. Scott resumed his teaching and research in solid-state chemistry, thermodynamics, magnetochemistry and electrochemistry. In 1953-54 he held both Guggenheim and Fulbright fellowships, which enabled him to study in the laboratory of Sir Neville Mott, later a Nobel laureate in physics, in Bristol, England. He held visiting professorships in Tokyo, Stuttgart, Jerusalem, and Sendai, Japan. During his tenure at OSU, he supervised the work of over 40 graduate students, won awards for research and teaching, and was recognized for his support of the basketball program. He retired in 1977 with Emeritus status.

Dr. Scott was an avid outdoorsman who had climbed the major peaks in the west. He was also an accomplished skier and "infected" many of his colleagues with his enthusiasm for the sport. As Joe Nibler puts it, "Al was a marvelous individual - full of spirit and the joy of life. He will be missed." His family asks that donations in his memory be made to the chemistry department in support of graduate students.

Pauling Lectures, Continued from p. 1

The three seminars, "Vibronic Superconductivity in the Copper Oxides," "Lithium-Insertion Compounds," and "Oxide-Ion Conductors," were geared for a cross-disciplinary audience and attracted students, campus researchers, and visitors from around the state.

Other activities are planned at OSU to celebrate the Pauling Centenary. Betty Williams, Nobel Laureate, will deliver the Ava Helen and Linus Pauling Peace Lecture on May 14, 2001. An all-day forum on Linus Pauling's work is being held February 28 in the LaSells Stewart Center. The panel discussion, sponsored by the Pauling Heritage Committee at OSU, features Nobel Laureate Ahmed Zewail, Robert Paradowski, Tom Hager, and Linus Pauling, Jr.

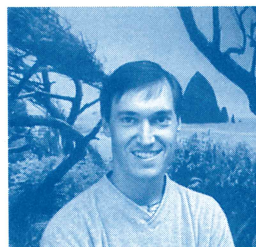
Making a difference in higher education

Alumni contributions provide funds for many on-going programs. Colleen Spurgeon (BS, 1984) has funded a scholarship every year since her graduation, sometimes with the added contribution from an employer, who matches her gift. Friends of our former chairman Carroll DeKock established an endowment for undergraduate scholarships in his name. From time to time, friends and alumni share their good fortune with departments at OSU by donating stocks. Occasionally, the department benefits from the estate of a friend or OSU alum. There often are significant tax advantages for contributors.

As you may have noticed, a great deal of space in this newsletter is given to our students who have earned honors and awards throughout the year. With your generous contributions, we can enhance our commitment to support these students, who will become the scientists and teachers of tomorrow. If the Chemistry Department were to make a "wish list" of causes which need your benevolent support, it would look like this:

- New fellowships to attract outstanding new graduate students
- New undergraduate scholarships
- In kind donations (e.g. internships for our students)
- Support for graduate students' travel to conferences
- Chemistry Book Fund (for paper or electronic serial resources)
- Building renovation funds

You can make a big difference in a student's future!



Alumni Profile

Jason Sandahl, a 1993 graduate of the Chemistry Department, recently returned to OSU as a graduate student in Environmental and Molecular Toxicology. Jason grew up on an apple and cherry orchard in Hood River, OR. He

declared a chemistry major at the end of his sophomore year, with a special interest in environmental chemistry. During his senior year, Dr. Peter Freeman guided him through an undergraduate research project.

After graduation, still undecided about a career, Jason joined the Peace Corps and taught general science for 2 years at a middle school in the rural mountains of Swaziland, Africa. He observed farmers using insecticides, including DDT, to wash the ticks off of their cattle along the rivers. Seeing this, Jason recognized a way to combine his love of agriculture and environmental chemistry and he knew that he would need further education and a higher degree.

Jason spent two years in Japan, teaching English in a Ministry of Education program. There he met and married his wife. He returned to OSU as a graduate student, where his research project takes him to study in his Hood River backyard. He is studying the effects of pesticides, specifically organophosphates, on salmon health and behavior. He spent two months in a summer research project in Japan, learning about the olfactory systems in fish. He brings that experience back to Dr. Jensen's laboratory in Environmental and Molecular Toxicology. Jason's research requires him to be in contact with farmers, with the US Department of Environmental Quality, with the National Marine Fisheries Service, and with researchers in Japan. His goal after completing his degree is to work for an agency, such as USAID, which promotes agriculture production and environmental conservation in developing countries.

Many of today's alumni return to graduate school after a period of work or non-academic pursuits. They have learned what is needed to satisfy their career goals. In this case, Jason learned that he liked research from Dr. Freeman and subsequently found where he wanted to apply his skills.

Dr. Max B. Williams

Former OSU Chemistry Professor Max Williams passed away September 11, 2000 in Corvallis. In 1941, he earned his PhD from Cornell University, married Mary Aylett, and began a long and rewarding career in the chemistry department at Oregon State College. He retired in June 1980. In 1964, Dr. Williams was awarded the Legislature's Merit Award and in 1974, he won the Carter Award for teaching. Dr. Williams teamed up with Wendell Slabaugh to teach the first OSC televised chemistry lectures in 1957. He is survived by his wife of 59 years.

Research Opportunities for Undergraduates

Summer research and internship opportunities for chemistry students are a valuable adjunct to a 4-year degree. Students can apply what they've learned to real-world problems in production or research. It often provides the motivation a student needs to focus his or her interests in science.

Wyatt Tenhaeff has worked on a project with John Loeser and Hsiou-Lien Chen in the Department of Apparel, Interiors, Housing and Merchandizing since February. The goal of was to isolate and identify the compounds responsible for color in naturally colored cotton. Their research focuses on the role flavinoids, if present, played in these aberrations. Wyatt received an Undergraduate Research, Innovation, Scholarship, and Creativity (URISC) grant from the OSU Research Office to continue this research through the summer. Although their efforts so far have been inconclusive, the research continues through the fall.

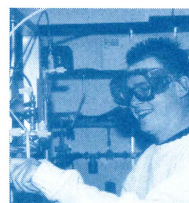
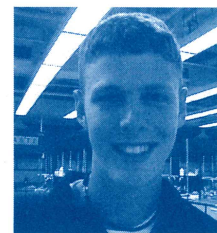
The funding provided by a URISC grant enabled **Rebecca Medina** to do research in Dr. William Gerwick's marine natural products laboratory in the College of Pharmacy during the summer. The goal of her research was to isolate biologically active organic compounds from a blue-green algae, *Lyngbya Majuscula* and, using various organic solvents, to fractionate the product using vacuum layer chromatography. The crude fractions were tested for bioactivity using a brine shrimp assay, and any active compounds were isolated using high pressure chromatography. The structure of one active compound was determined using mass spectrometry and NMR. Rebecca, a senior chemistry and biology major from Los Angeles, is still working on this extract and will continue to find more compounds using the methods described above. Rebecca's goals include graduate study in marine natural products. She says, "This research project has given me the opportunity to gain experience working in a laboratory setting with positive mentoring and guidance."

Amy Chan, Matt Reeves, Jason Schindler, Nicole Hayes, and Josh Moentenich worked this summer at AVI-BioPharma, Inc, in Corvallis. These students had applied for summer internships to work in an industrial setting and learn bench techniques in fundamental organic chemistry. Each year since 1992, AVI has hired chemistry and biochemistry students with the expectation that these students will learn production techniques that will

enhance their understanding of a future career in chemistry research. Advanced students from the integrated laboratory course are ideal candidates for these positions. Dwight Weller of AVI, a former OSU faculty member, coordinates his recruitment with Dr. Chris Pastorek each spring. Interns work with Dr. Christina Fox in solid-phase oligamer synthesis and with Dr. Belaid Mahiou in production. Some students continue to work at AVI during the school year.

AVI also hires OSU science students as Laboratory Aides. The company is eager to share the excitement of synthetic organic chemistry with young scientists and to give them practical training. This experience has led to a gold mine of opportunities for a long list of chemistry and biochemistry students over the past decade.

Josh Moentenich participated in an Education Research Undergraduate Laboratory Fellowship Department Of Energy (ERULF-DOE) internship at Argonne labs in Chicago, IL. Josh received airfare, housing, and a stipend for ten weeks of research on organic superconductors. He worked with a synthetic compound known as "ET" (Bis-ethylene dithio-tetrathiafulvalene), attaching a variety of anions to it to try to give it superconducting properties. He learned several new bench techniques and developed a sense of the systematic and sometimes frustrating nature of laboratory research. Josh is a senior at OSU. He works for Belaid Mahiou at AVI BioPharma, Inc. during the school year.



Jeff Hunker held a summer internship in the engineering department at Micro Monitors in Bend, OR, where they develop gas detection products for the electronic power industry. Jeff tracked and reported on the performance of an installed base of analytical instruments, performed technical document searches, and rebuilt a laboratory grade gas chromatograph. Doug Ritchey of Micro Monitors comments that, "Jeff has turned out superbly!....He is a great person, a good technologist, and...he will be the first to say just how valuable it [the internship] has been to him. Surely it has been valuable to us."

Three Chemistry Enrichment Courses Take To The Web

A series of chemistry classes which satisfy University core curriculum requirements are now available over the web. The classes appeal to an interdisciplinary audience but require at least some knowledge of chemistry. Prof. Walter Loveland developed and offers three regular classes as "web only" and through distance learning. The courses involved are Ch 374, Technology, Energy and Risk, Ch 390, Environmental Chemistry, and Ch 490/590, Computer Programming for Scientists. These three courses are now offered all four terms and attract students from the Pacific Northwest and an occasional student from outside the US. The peak enrollment so far was 160 students in Ch 390 during spring 2000.

Topics in Ch 374 cover decision-making in a technical, democratic society, ranging from acid rain to energy resources. The environmental chemistry curriculum includes the sources, reactions, transport, effects, and fates of chemicals in water, soil, air, and living environments. One year of college chemistry is required. Computer programming for scientists requires two years of college chemistry and considers computer applications to problems in chemistry.

Students can expect varying degrees of interaction and use of multimedia materials as the courses develop further. Although web-based instruction presents special challenges for students, so far, the completion and passing rates for these three classes have been comparable to standard classroom instruction at OSU.



We would like to hear from you. Please send us personal or professional news or comments to be included in a future issue of Chemistry Alumni News. You may send e-mail to chemadm@chem.orst.edu or mail this form to the department address below.

Name: _____

Degree from OSU (and year earned): _____

Personal comments or professional news:

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