

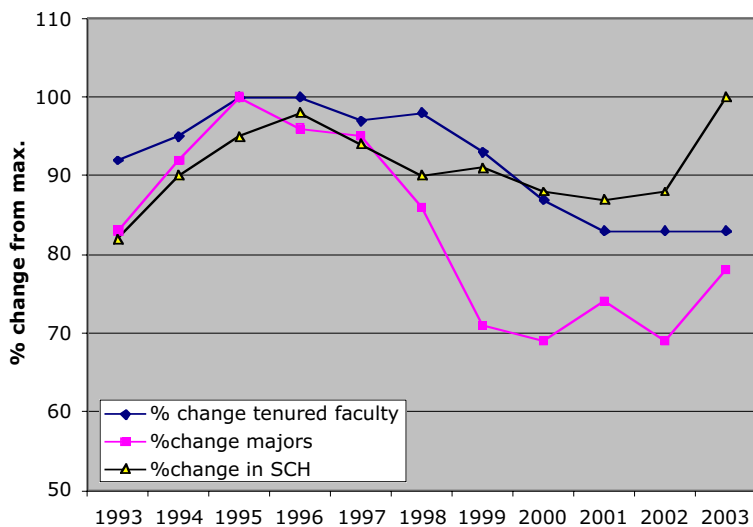
September
2003

The Dean's Message

Memo To The Faculty and Staff: Budget Concerns

Unhappily, my first act as the Dean was to initiate budget reductions mandated by the University. The budget received by the University for FY04-05 was reduced by the State legislature. A portion of this cut (3%) was not covered by increased tuition. The central administration passed this cut equally to all of the vice-presidential areas. The cut was expected but the across the board nature of it was a surprise given the emphasis on quality and planning over the past several years. Thus, the College faces a 3% cut in PBL (permanent budget lines) in FY04. The Provost has asked for each area to present a plan for a 3 to 5% cut with the additional 2% possibly available for reallocation. In addition, in FY03 the College took a 3% cut in PBL funds that was not covered by offsetting PBL cuts in most of the departments and units. Units were allowed by the College to take the cuts in temporary funds and the permanent cuts were covered by the College reserve funds. The reserve funds in the College that are used annually to support matching and startup went into deficit. This deficit would compound annually if not offset.

Number of tenured faculty/undergrad majors/SCH



The current College plan is to offer up a mixture of faculty positions, staff positions and 10% of the TA lines as our cut. We will take a cut from the departments and service units of 5%. Of that amount 3% will be used to cover the FY04 cut and 2% will be used to backfill the reserves and remove them from a deficit condition. Unfortunately, service and research units are not exempted from the cuts and Technical Services has been cut \$50,000.

Budget hearings for the Colleges have been scheduled in September and we won't know our final allocation until October or November. The late scheduling of these budget hearings has further complicated our ability to plan. A major emphasis over the next few years will be examination of across-college cooperation and interactions that could strengthen programs, reduce costs, and/or increase efficiencies. Major vertical cuts are being discussed and examined

and the College of Sciences must be ready to participate. The College overall is in a good position because of our research and teaching strengths but we do have some weaknesses. Some units have low and falling enrollments and low research productivity. In the past year we began to reverse a trend of decreasing numbers of undergraduate majors across the College.

What about our future? We cannot afford to lose more tenured or tenure track faculty lines or more staff positions and we want to eventually build back to the 140 faculty lines we had in 1996. Since 1996 we have lost nearly 20% of our tenured/tenure track faculty lines. Last semester we were at an all-time high in the number of student credit hours taught and in the amount of grant funds generated. In the upcoming cut we will decrease the number of faculty lines even further. The Central administration has signaled that this will be the bad year and FY05 should yield additional revenue for reallocation. But it is also possible that additional cuts will be made in FY05. I will do everything in my power to protect faculty lines and to avoid across the board cuts within the College in the future. Unfortunately we are at the point of choosing between faculty lines or support services and TA positions.

Michael Griswold
Dean of Sciences

Notable Awards

- **Phil Marston** (Physics) has been awarded the Silver Medal Award by the Acoustical Society of America for contributions to generalized ray theories for acoustical scattering and the acoustical manipulation of fluids to study fundamental phenomena in fluid mechanics and optics. The award ceremony will be held in November at Austin, Texas.
- **Mark Kuzyk** (Physics) was named the *2003 Boeing Distinguished Professor in Math and Sciences Education* by the College of Sciences. He is recognized for his many contributions to the enhancement of science education at WSU and K-12. The award carries a stipend of \$10,000 a year for two years.
- **Alexander Li** (Chemistry) was one of 20 scientists across the national to win a \$240,000 Beckman Young Investigator Award this year. Li is noted for designing functional nanosystems. Recently he has developed bio-sensors or molecular machines that can detect such things as specific DNA damage, the protein makers that are indicators of early stages of cancer

or bio-hazardous materials in the environment. His machines report their findings by emitting variously colored light. His work has applications in health, environment and national security.

- **Firas Awwadi** (a Chemistry graduate student in **Roger Willett's** lab) won a \$1,200 travel grant from the American Crystallographic Association to attend their national meeting in Covington, Kentucky last July. At that conference, he received the Margaret C. Etter Student Lecturer Award for his presentation "The Role of the Aryl C-Br X-Synthon in the crystal structures of Copper(II) Halide Salts." He also won the \$1,000 Donald S. Matteson Scholarship from the Department of Chemistry.
- **Ben Dzikowicz** (Ph.D Physics 2003) and **Curtis Osterhoudt** (Physics Ph.D. candidate) received the first and second place "Best Student Paper in Underwater Acoustics" awards, respectively, for their presentations at the 2003 meeting of the Acoustical Society of America. Ben's paper was titled

"Doubly-focused echoes from spheres unfold into a hyperbolic umbilic diffraction catastrophe," and Curtis' was titled "Tilt angle dependence of backscattering enhancements from organ pipe modes of open water-filled cylinders: Measurements and models." Ben is now with Naval Coastal Systems Station in Panama City, Fla.

- St. Cloud State University, **Michael Smerdon's** undergraduate alma mater, awarded him their College of Science and Engineering Leadership Award this year.
- **Tom Dickinson** (Materials Science, Physics) will receive the 2003 Distinguished Alumni Award from his alma mater, Western Michigan University, this fall.
- **Sukanta Bose** (Physics) received a 2003 CAREER Award from the NSF for his proposal titled "An Integrated Research and Education Program in Gravitational-Wave Phenomenology." The award includes a grant of \$80,000 per year for five years.

Thanks to Faculty Volunteers

Many thanks to the faculty who are reading Regents Scholars applications:

David Gaylord, Elsa Kirsten Peters and Peter Larson (Geology);

Scot Wherland (Chemistry);
Sandy Cooper, Alex Khapalov and David Watkins (Mathematics);

Beth Marshall and John "Skip" Paznokas (Biological Sciences),

Mike Kahn and Mary Sanchez-Lanier (Molecular Biosciences); and

Gary Collins and Steve Tomsovic (Physics).

Worthy of Note

- The WSU Vancouver Sciences won a \$333,500 grant from the Murdock Charitable Trust for a core instrument facility for research in biology and environmental science. An ABI 3100 genetic analyzer, a gas-chromatograph/mass spectrometer, and other equipment will be purchased. **John Bishop** (Biological Sciences) is the PI and **Ruth Phillips** (Biological Sciences), **Steve Sylvester** (Molecular Biosciences), and **Ed Brook** (ESRP/Geology) are co-PIs.
- **Jim Hurst** (Chemistry) was invited to join the International Organizing Committee of the 4th International Conference on Peroxynitrite and Reactive Nitrogen Species in Biology and Medicine, to be held in Konstanz, Germany, in 2004. Hurst is also one of 24 invited participants of a the Mesilla Workshop on the "Chemistry of NO in Biological Signalling," to be held in Mesilla, New Mexico, in Feb. 2004.
- **David Wollkind** (Mathematics) gave an invited address in July at the Banf International Research Station in Alberta, Canada, entitled "Nonlinear Stability Analyses of Pattern Formation in the Natural Sciences: The Legacy of Lee Segel" at a BIRS Workshop on Mathematical Biology: From Molecules to Ecosystems: The Legacy of Lee Segel hosted by the Pacific Institute for the Mathematical Sciences. Wollkind also is supervising a Ph.D. dissertation "Nonlinear Stability Analyses of Pattern Formation on Solid Surfaces during Ion-Sputtered Erosion" by Adoon Pansuwan, a mathematics student at Mahidol University in Bangkok, Thailand, under a memorandum of agreement between WSU and Mahidol University.

• **YoungHo Kwon** (Ph.D., Biochemistry, 2003) has had his paper, "Binding of Zinc Finger Protein TFIIIA to its Cognate DNA Sequence with Single UV Photoproducts at Specific Sites and its Effect on DNA Repair" accepted by the *Journal of Biological Chemistry*.

• **Chuck Locuson** (Chemistry graduate student in **Jeff Jones'** laboratory) was invited to present a talk at this year's Drug Metabolism Gordon Conference.

• **Lai-Sheng Wang's** (Physics, Tri-Cities) manuscript, "All -Metal Antiaromatic Molecule: rectangular A144 in the Li3A14- Anion," has been accepted for publication in *Science*.

• **Sue Clark Serving on German Scientific Review Panel**

Sue Clark (Chemistry) has accepted an invitation to serve on an international review panel for the German Helmholtz Association. The Helmholtz Association supports 15 publicly funded German research centers that operate much like the U.S. national laboratories. In May, Clark participated in a review of the German Nuclear Safety Research program, along with other distinguished scientists from the U.S., Europe and Japan. She will participate in additional reviews over the next year.

• **Sibling's Gift Renews Life**

Susan Bentjen (Molecular Biosciences grants administrator) has made a good recovery and is back at her desk after donating a kidney to her older brother this summer. Two years ago, Bob Riemenschneider, a senior software engineer for the Stanford Research Institute International in Menlo Park, California, seriously injured his two kidneys in a climbing accident in Yosemite National Park. He had had to curtail his work and endure frequent dialysis sessions. In order to make the gift to her brother, Susan had to lose 110 pounds prior to surgery, which she did over a year and a half. The double surgery was done at the Stanford University Medical Center

on June 25. Susan took six weeks to recover and returned in mid-August. Her brother has recovered normal kidney function and is expected to return to his job in late September.

• **Seventh Edition Authored**

A team of Washington State University professors authored the Seventh Edition of their popular textbook, *Teaching Strategies: A Guide to Effective Instruction*. The book is the collective works of **Donald C. Orlich** (SMEEC), **Robert J. Harder**, **Richard C. Callahan**, **Michael J. Trevisan** and **Abbie Brown**. All have been at WSU during their careers.

Orlich also authored "An Examination of the Longitudinal Effect of the Washington Assessment of Student Learning (WASL) on Student Achievement," which was released by the *Education Policy Analysis Archives*, June 12, 2003. The paper may be accessed at: <http://epaa.asu.edu/epaa/v11n18/>

• **Incoming Science GPA's Rising**

The Office of Student Affairs reports that the high school gpa of entering WSU science students continues to rise:

2000	3.49
2001	3.50
2002	3.53 (there were 278 students in this group)

In 2002, this compares to the average high school gpa of all entering freshmen of 3.43

In 2002, the 104 science transfer students had an average transferring college gpa of 3.1, compared to the average college gpa of all transferring students of 3.03.

• **Two Summer Chemistry Programs Widely Praised**

A resoundingly successful summer school in "Physical Chemistry at the Nanometer Scale" was organized by **Kerry Hipps** (Materials Science and Chemistry) and **Lori Bruce**, conference coordinator. The eight-day, late-July session brought 76 participants, who were graduate students and post docs from across the U.S. and from Netherlands, Sweden, Australia, Japan, China and India, and faculty members from

institutions in every section of the country. Presenters included Hipps and **Tom Dickinson** (Materials Science, Physics) from WSU, as well as seven others, all internationally known nano scientists from UC, Santa Barbara; the University of Wisconsin-Madison, the University of Utah, Johns Hopkins University and Arizona State University. The project received funding from the American Chemical Society Petroleum Research Fund.

Thanks go to chemistry graduate students who assisted: **William English**, **Maya Leonetti**, **Ben Shepler**, **Jason Han** and **Jerimiah Forsythe**.

The second program is a joint effort with the University of Idaho, new this summer, which provided research experiences for undergraduates. **Sue Clark** (Chemistry) and **Jeanne McHale** (UI, Chemistry) received support from the NSF for their 10-week, program, "Green Chemistry on the Palouse." The eight participants came from as far away as Johns Hopkins University and as close as Whitman College in Walla Walla. They worked in faculty chemistry labs, participated in seminars and competed in a poster session.

• **WSU, NMFS Agreement Creates Salmon Research Institute**

In June, the WSU Center for Reproductive Biology and the National Marine Fisheries Service signed a research collaboration agreement on salmon restoration that created the Institute for Salmon Research and Science. The intent is to increase the impact of current, and encourage new, research at WSU, NMFS and at the University of Idaho on the fundamentals of salmon recovery. Improved funding opportunities are also anticipated.

Researchers will be involved in projects of salmonid biology and ecology, and land use effects on freshwater life stages of Pacific salmon, and other Pacific salmon-

related fields. The proposed projects take an integrated approach to a basic understanding of the mechanisms controlling salmon biology and reproduction.

The institute is seeking an \$18 million, five-year operations grant. Individual researchers are applying for funding from other major sources, including the National Science Foundation.

- **New Institute for Shock Physics Building Inaugurated in August**

A day of public events marked the inauguration of the new Institute for Shock Physics building Aug. 27. They included a morning dedication ceremony, with remarks by Congressman George Nethercutt, Jr., WSU President **Lane Rawlins** and ISP director **Yogendra Gupta**.

An afternoon panel discussion, "Role of University Research and Education in National Security," was followed by a reception. Nethercutt and Provost Robert Bates moderated the panel. Members of the panel were David Crandall, Ph.D., assistant deputy administrator of the Department of Energy/National Nuclear Security Administration; Victor Reis, Ph.D., former director of the Defense Advanced Research Projects Agency and former assistant secretary of the Department of Energy; Jay Davis, Ph.D., former director of the Defense Threat Reduction Agency and former associate director at Lawrence Livermore National Laboratory; and Leonard Peters, Ph.D., director of the Pacific Northwest National Laboratory.

- **Conner Museum Receives**

- Zoological Collection from UI**

The Conner Museum has been given a collection of approximately 7,000 bird and mammal specimens by the Department of Biological Sciences at the University of Idaho. The specimens were collected across the Northwest, from British Columbia to Montana, with many from Idaho. The integration of the

Scientific Milestones

- **Molecular Motors Change Conformation When Interacting with Microtubules**

Four WSU scientists were involved in a new study of how biological molecular motors work that was published in the May 2nd issue of *Science* magazine. This work was led by **Edward Pate** (Mathematics) working in collaboration with colleagues at UC, San Francisco, and three other WSU scientists. This study describes previously undetected conformational changes that the molecular motor kinesin undergoes when it interacts with microtubules. Microtubules are proteins that provide scaffolding to the interior of cells and to the axons of nerves. Kinesin is a motor protein that utilizes the energy source, ATP, to move chromosomes during cell division and to carry packets of neurotransmitters along nerve axons.

The study used two new analogs of ATP synthesized in **Ralph Yount's** laboratory (Molecular Biosciences, Chemistry) by **Xiaoru Chen** (former post doc, Biochemistry/Biophysics) and **Jean Grammer** (senior technician and laboratory chief). These compounds contain a stable free radical that allowed the first detection of major conformational changes in kinesin when it binds to microtubules. The work was supported by National Institutes of Health grants.

- **DNA Repair Effectiveness Depends on Position of Damage Relative to Nucleosome**

Brian Beard (Ph.D., 2003) and **Michael Smerdon** (Molecular Biosciences) along with the deputy director of National Institute of Environmental Health Sciences, Samuel Wilson, had a paper in the journal *Proceedings of the National Academy of Sciences*. The paper discussed the team's finding that repair enzymes distinguish between various positions of damaged genes. The repair enzymes may be two or three times as effective depending upon whether the damage faces toward or away from the nucleosome—the protein-DNA complex that folds the very long DNA strands into the tiny nucleus of a cell and gives enzymes access to the DNA for repair and replication.

- **New Cancer Treatment Based on Boron Chemistry**

A new pharmaceutical for cancer, "Velcade," generically "bortezomib," uses boron chemistry that a team led by **Donald Matteson** (Chemistry) discovered 25 years ago. This compound was developed by Millennium Pharmaceuticals and approved by the FDA in May for treatment of relapsed and refractory multiple myeloma, a type of cancer for which no other treatment exists. "It doesn't help all of the victims of this condition, but it does result in complete remissions in a significant fraction of patients," said Matteson.

new specimens into the existing collection is being done by **Richard Johnson** director of the museum. Before being housed with the existing collection, each new case of specimens is decontaminated by being placed in a freezer, at -20 degrees Fahrenheit, for three to four days. This process will take place in the basement of Abelson Hall over several months. The Conner Museum previously held some—1,000 display and over 65,000 research specimens.

Grant Activity

Faculty from the School of Biological Sciences (**Richard Gomulkiewicz**, **Martin Morgan**, **Charlotte Omoto** and **Michael Webster**) and the Department of Mathematics (**Robert Dillon, V.S. Manoranjan**, **Judith McDonald** and **Gomulkiewicz**) have earned funding from a NSF initiative to improve interdisciplinary training for undergraduates in biological and mathematical sciences.

Their \$100,000 award will support the interdisciplinary education and training

of six mathematics and six biological sciences undergraduates. The students will participate in biological research that uses concepts and techniques from the mathematical sciences.

The program strengthens connections between mathematics and biology faculty and students, and provides greater opportunities for collaborative research at the interface between mathematics and biology.

Doerte Blume (Physics) won a \$177,000, three-year, NSF grant to investigate new properties of atomic Bose-Einstein condensates using a microscopic approach. Quasi-one-dimensional gases, atom-molecule mixtures, and doped condensates promise observation of intriguing phenomena. Her approaches will help identify new many-body behaviors as well as help interpret present-day experiments. Blume also received a \$50,000 amendment from the NSF Foundation to her grant titled "ITR: Electronic Excitation of Alkali-Atom Doped Helium Clusters."

Other grant activity this summer:

Sandra Cooper (Mathematics) and **Judy Meuth** (Womens Studies) received \$293,82 in additional support from the National Science Foundation for their project titled "DEM project PRISM"

Richard Gomulkiewicz (Biological Sciences) received a supplement to his REU (Research Experiences for Undergraduates) grant to study "Collaborative research: maintaining high species diversity in communities," which now totals \$353,162 for three years.

Jeffrey Jones, Dan Rock and **James Bruce** (Chemistry) received a new National Cancer Institute grant of \$146,800 for a project "Covalent binding methods for early drug development." **Jones** also received an annual award of \$277,680 on his 10-year National Institute of Environmental Health Sciences grant titled "Cytochrome P450 Models for Risk Assessment." This grant was also renewed for an additional five years for \$1,453,564.

ChulHee Kang (Molecular Biosciences) and **Keith Dunker** received a \$110,000 amendment from the National Science Foundation to their grant titled "Calsequestrin, a reversible calcium conducting polymer." **Kang** also received an annual award of \$217,000 from the National Institute of General Medical Sciences on a four-year grant titled "Structural studies of phenyl propanoid metabolism."

James Satterlee (Chemistry) received an annual award of \$286,278 from the National Institute of General Medical Sciences on his five-year grant titled:

Structure and Dynamics of Heme Protein Active Sites."

Michael Smerdon (Molecular Biosciences), in his 23rd year of support from the National Institutes of Health, received \$362,500 on his MERIT award for his work on repair of carcinogen damaged DNA in human chromatin.

Steven Tomsovic (Physics) received \$80,000 in additional support from the National Science Foundation for his project titled "Chaos, Interactions, and Semiclassical Approximations."

Lai-Sheng Wang (Physics, Tri-Cities) received a three-year \$325,747 grant from the DOE/ PNNL.

Michael Webster and **Hubert Schwabl**, (both Biological Sciences) and **Jordan Karubian** received \$86,459 in additional support from the NSF for their project "Plumage color polymorphism in Red-backed Fairy-wrens: mechanism and function."

Webster, with **Andrew Storfer, Eric Roalson, Larry Hufford** and **Walter Sheppard** received a \$483,979 NSF grant to purchase instrumentation for research and education in ecological and evolutionary genetics including a DNA sequencer and a computer network for analysis.

Guy Worthey (Physics) and collaborators received a three-year grant from NSF totaling \$302,540 for a project "Collaborative research: new standard stellar population models." The California Institute of Technology Jet Propulsion Laboratory increased its grant to Worthey to a total of \$113,184 for his examination of 200 star cluster with SIM to obtain their distances in his study of stellar and galactic evolution.

John Wyrick (Molecular Biosciences) was awarded a \$750,000 (direct costs) grant from the American Cancer Society. His project is entitled "Genome-wide Analysis of the Histone Acetylation Code."

Sukanta Bose (Physics) received a two-year \$130,000 NASA grant to study "Data Analysis Strategies and Algorithms for the Laser Interferometer Space Antenna (LISA).

Sue Dexheimer received supplemental support of \$32,626 on an existing NSF CAREER Award.

Phil Marston (Physics) will receive \$210,000 in grants from the U.S. Navy over the next three years. He also received a two-year \$130,000 grant from the Office of Naval Research to do collaborative work with the Coastal Research Station in Florida.

A \$300,000 multidisciplinary grant was received by **Sue Clark** (Chemistry) and **Luying Xun** (Molecular Biosciences) with Brent Peyton

(Chemical Engineering) and David Yonge (CEE) from Department of Energy's Office of Science. The PIs, who collaborate through the Center for Multiphase Environmental Research, will work on the bioremediation of Chromium contamination. They began collaborating by working with graduate students in the NSF IGERT program.

The NIH Institute of Diabetes and Digestive and Kidney Diseases granted **Michael Konkel** (Molecular Biosciences) a three-year \$815,921 award for work on the "Pathogenesis of Campylobacter Enteritis."

Toshiko Ichiye (Molecular Biosciences) received \$211,802 on her multi-year NIH grant "Computer Simulations of Electron Transfer Proteins."

The NSF awarded **Luying Xun** (Molecular Biosciences) a three-year, \$240,000 grant, "Biochemistry of Two FADH₂-Utilizing Trichlorophenol 4-Monooxygenases."

"Single Cell C4 Photosynthesis: Control of Cell Organization and Function," a project of **Vincent Franceschi** and **Gerald Edwards** (Biological Sciences) was funded for three years by the NSF in the total amount of \$450,180.

Nancy Magnuson's (Molecular Biosciences) work on the contribution of Pim-1 kinase to cell survival received \$257,441 this year from the National Cancer Institute.

Incoming director of the School of Molecular Biosciences, **John Nilson**, was awarded \$358,565 on his long-term project "Regulation of Gonadotropin in Gene Expression," from the National Institute of Diabetes and Kidney Diseases.

Kathleen Postle (Molecular Biosciences) received \$398,302 on her project "Energy Transduction Between Membranes" from NIH.

The National Center for Research Resources awarded **Ralph Yount** (Chemistry) \$327,673 for purchase of a LCQ Deca-XP Ultra Sensitive Ion Trap Mass Spectrometer.

Supplemental awards from the NSF raised **Kerry Hipps** (Materials Science) grant for "Spectroscopy of Single Molecules at Specific Sites on Surfaces," to \$263,095.

Ray Reeves (Molecular Biosciences) received \$324,137 on his continuing "Training in Biotechnology: Emphasis on Protein Chemistry" grant from the NIH.

College of Sciences Calendar 2003

September

- 2 Physics Colloquium, "**Under pressure: vibrational spectroscopy of solids squeezed by diamond-anvil cells,**" Matt McCluskey, WSU, Webster B17, 4:10 p.m.
- 3 Biological Sciences Seminar, "**Optimal foraging and gut constraints: reconciling two schools of thought,**" Chris Whelan, Center for Biodiversity, Illinois Natural History Survey, Abelson Hall 201, 4:10 p.m.
- 4 **Molecular Biosciences Seminar**, "Roles of the Tomato Pto Kinase and Pseudomonas Effector Proteins in Host Immunity and Disease," Gregory Martin, Boyce Thompson Institute, Ithaca, New York, Todd 276, 12:10 p.m.
- 8 Chemistry Seminar, "**Foldable polymers: molecular recognition, nano actuation, and thermophilic properties,**" Alex Li, WSU, Fulmer 438, 4:10 p.m.
- 8 Biological Sciences Seminar, "**Allocation-based trade-offs in regeneration strategy of tree seedlings,**" Kaoru Kitajima, U. Florida., Todd Hall 130, 3:45 p.m.
- 9 Physics Colloquium, "**Fabrication of nanostructures with ionizing radiation,**" Massimo Bertino, U Missouri-Rolla, Webster B17, 4:10 p.m.
- 11, 12 Center for Integrated Biotechnology Retreat, University Inn Best Western, Moscow.
- 11 Geology Seminar, "**Unusual Currents in Glacial Columbia,**" E.Kirsten Peters, Webster 11, 4 p.m.
- 15 Biological Sciences Seminar, "**Conflicts of interest, inbreeding and mating behavior in a cooperatively breeding bird,**" Mike Webster, WSU, Todd Hall 130, 3:45 p.m.
- 15 Chemistry Seminar, "**Adaptability and dynamics in RNA-ligand interactions,**" Thorsten Dieckman, University of California-Davis, Fulmer 438, 4:10 p.m.
- 16 **Physics Colloquium**, "Tba," Matt Zacate, WSU, Webster B17, 4:10 p.m.
- 18 **Molecular Biosciences Seminar**, "tba" Michael Griswold, WSU, Todd 276, 12:10 p.m.
- 22 **Chemistry Seminar**, "tba," Bill Davis, WSU, Fulmer 438, 4:10 p.m.
- 22 Biological Sciences Seminar, "**Top-down and bottom-up control of spatially patterned herbivory at Mount St. Helens,**" John Bishop, WSU Vancouver, Todd Hall 130, 3:45 p.m.
- 16 **Physics Colloquium**, "Tba," Chris Hundhausen, WSU, Webster B17, 4:10 p.m.
- 24 Reproductive Biology Workshop, "Maternal and paternal effects on survival of androgenetic trout: implications for measuring egg quality," Steve Patton, Fulmer 125, 4:10 p.m.
- 25 **Lane Family Lecture in Environmental Science, Cecil Andrus, former U.S. interior secretary and four term Idaho governor, "Threatening Clouds over our Environment," Todd Hall Auditorium, 7:30 p.m.**
- 25 **Molecular Biosciences Seminar**, "tba" Lisa Shaffer, WSU Spokane, Todd 276, 12:10 p.m.
- 25 Geology Seminar, "**tba,**" Richard Gill, WSU, Webster 11, 4 p.m.
- 29 Biological Sciences Seminar, Ray Lee, "**Physiological adaptations of aquatic organisms to extreme environments,**" Todd Hall 130, WSU, 3:45 p.m.
- 29 **Chemistry Seminar**, "Some twists and turns in a tale of drug design," Katherine Seley, U. Maryland Baltimore County, Fulmer 438, 4:10 p.m.

Cecil Andrus to Give Lane Environmental Lecture

Cecil Andrus, former U.S. interior secretary and four-term Idaho governor, will deliver the annual Lane Family Lecture in Environmental Science on Sept. 25. His address, "Threatening Clouds over our Environment," is set for 7:30 p.m. in Todd Hall Auditorium.

Andrus will discuss Bush administration efforts to open oil development in the Arctic National Wildlife Refuge, cleanup plans for Hanford and the INEEL, endangered fisheries and give an overview of the Environmental Protection Agency. A reception will follow.

Andrus is a leader in protecting wild rivers, endangered salmon, and water quality. He has been involved in issues related to nuclear cleanup, Snake River dams, bull trout, the future of public lands, federal land policy, and wildfires.

The Lane Family Lectureship in Environmental Science was endowed by former publisher of SUNSET Magazine, books and films, L.W. "Bill" Lane, Jr. and his wife, Jean.

The Robert and Wendi Lane 2003 Fellows will be introduced at the lecture. They are: **Steven S. Clark, Alisandra Colapreto, Megan S. Hill, Brad Jessop, Rebecca L. Martin, Stephen L. Mischke, Ann C. Richter, and Keri J. York**, all graduate students in ESRP.

