

Bren School news

Volume 4
Spring 2004

MESSAGE FROM THE DEAN



This year constitutes another banner one for the Bren School.

First, the School has embarked on a significant trajectory of faculty hiring. We anticipate hiring at least six new faculty members over the next few years across our four “centers of excellence”—water (quantity, quality, and its role in ecosystem function), integrative applied ecology, environmental economics, and corporate environmental management—and our three “theme” areas of environmental informatics, law and policy, and environmental change. We have four faculty searches in process this year: corporate environmental management, water, political science, and law.

Roland Geyer (profiled on page 7) joined us this fall as assistant professor in corporate environmental management. Roland’s research falls in the areas of industrial ecology and supply chain management. The Bren School also welcomed two new affiliated faculty members: **Lorelei Moosbrugger**, an assistant professor in the department of political science, and **Sanjoy Banerjee**, a professor in the departments of chemical engineering, and mechanical and environmental engineering. Lorelei’s work focuses on comparative environmental policy with special reference to the European Union. Sanjoy’s work is in the area of pollution processes, in particular the transfer of pollutants between gases and water.

Additionally, we welcomed two new Bren scholars, both of whom are working with Professor Oran Young in his newly formed **Program on Governance for Sustainable Development**. **Durwood Zaelke** is a practicing attorney in Washington, DC and a specialist in international environmental law. **Matthew Stilwell**, who also holds a law degree, is affiliated with the UN Development Program in Geneva, Switzerland.

This was also an excellent year for student recruiting in both the MESM program—62 talented new students entered the program this fall—and in the intercampus MBA emphasis in Corporate Environmental Management (CEM), which now has 15 students from around the UC system and the Monterrey Institute of Technology (Mexico). Five new Ph.D.s arrived to join the Economics and Environmental Science (EES) program, bringing the total Ph.D.s in residence to 33. Five students completed their Ph.D. work in 2003, making a total of eight Ph.D.s who have graduated so far in our brief history.

The Bren School faculty continues to be very productive at research and in attracting external funding. Extramural awards to Bren School principal investigators topped \$7 million in 2002-03, or almost \$400,000 per person. Awards to date indicate that 2003-04 will equal or exceed that figure.

In November 2003, we hosted a major conference with widespread policy implications for the Endangered Species Act. The 30th anniversary of this Act created an excellent opportunity to bring experts and top thinkers in diverse conservation-related fields together with people directly affected by the Act to discuss and debate the future of government controls and biodiversity in general (see page 3). The results, to be published in book form, will inform the House and Senate as they review legislation in the spring.

Faculty Contributions to Policy-Making

One of the stated goals of the Bren School is to be not just at the forefront of environmental science, research, and interdisciplinary environmental study, but also of environmental policy-making. To this end, Bren School faculty have been involved in key research and advisory committee activities these past several years. Many of these activities and reports have a direct impact on policy decisions affecting our environment.

Complete information on all faculty research, committee memberships, papers, and policy-relevant contributions can be found on the faculty research webpage (www.bren.ucsb.edu/research/). Following are a few recent highlights.

Gas Policies Driven by Faculty Reports

The work of two Bren faculty members, Assistant Professor **Antonio Bento** and Associate Professor **Arturo Keller**, has had a big impact recently on automotive gasoline-related issues. Antonio recently co-authored a study with Stanford Professor Lawrence Goulder on the effects of CAFE (corporate average fuel economy) standards vs. gasoline taxes as incentives to lower fuel use. The report, presented at the American Economic Association Meeting in January, was used by the Congressional Budget Office in its official findings. Politically, CAFE is more acceptable (it focuses on improving fuel efficiency in automobile design), but the study found that raising gasoline tax would be far more effective economically. It was called one of the most sophisticated and detailed studies ever made on the issue, and is likely to change the current debate in Washington.

Arturo recently co-authored a report for the governor and legislature of California, "Health and Environmental Assessment of MTBE," which was instrumental in the governor's decision to phase out this fuel additive by January 2004. MTBE (methyl tertiary-butyl ether), a chemical compound that raises the oxygen content of gasoline and is used to replace lead as an octane enhancer in motor gasoline, has raised controversy as a groundwater contaminant.



CALFED Water Management



Los Vaqueros Reservoir in Contra Costa County is being studied by CALFED for expansion and water quality improvement.

Bren Professors **Tom Dunne** and **John Melack** have been appointed to the Independent Science Board of the CALFED Bay-Delta program, whose 30-year mission is to develop and implement a long-term comprehensive plan that will improve water supplies and management in California and restore ecological health to the San Francisco Bay-Sacramento-San Joaquin River Delta Watershed. These interconnected bodies of water serve many divergent populations and interests—agricultural, urban, recreational—and their water quality and overall species have been degraded through excessive and competing uses. Tom has been appointed to chair this Independent Science Board, which oversees the application of science in the various CALFED programs.

CALFED is a collaborative alliance of 23 state and federal agencies. Underscoring regional partnerships, CALFED efforts focus on water storage, quality, supply reliability, use efficiency, and transportation; levee system integrity; and ecosystem restoration and watershed management. "With science written into the process" says John Melack (pictured right), "this committee has a very different flavor."



Conferences & Workshops

Conferences 2003

March 20-22

State Legislative Leaders Foundation: "Corporate America and the Environment: Doing Well by Doing Good"

Pre-Conference Colloquium—"Natural Capitalism:" **Amory Lovins** (Rocky Mountain Institute)

April 8 & 21

Introduction to the **Program on Governance for Sustainable Development** (www.gsdprogram.org): Bren Professor **Oran Young** and Bren Researcher **Michael Stilwell**

UCLA Environmental Law & Policy Program/UCLA Institute of the Environment/Bren School Speaker Series

1. Water Resources (10/02): **Mary Nichols** (former California Secretary of Resources)
2. The Environmental Impacts of SUVs (11/02)
3. Global Climate Change (4/03): Bren Professor **Charles Kolstad**

August 23-25

Market Incentives—A Retrospective on Two Decades of Market Incentives for Environmental Protection: Bren Professor **Charles Kolstad** and Assistant Dean **Jody Freeman**

October 17-19

Environmental Economics: Bren Assistant Professor **Christopher Costello**

November 12-14

The Endangered Species Act at Thirty

The biggest and most significant conference of the year was the two-day **Endangered Species Act at Thirty: Lessons & Prospects**, which convened a diverse group of over 80 distinguished biologists, policy makers, representatives from both government and non-government organizations, company CEOs, lawyers, reserve managers, and educators for a comprehensive review of the Endangered Species Act. The Act's 30th anniversary in December initiated a unique opportunity for a comprehensive review of the Act's basis, operation, ethical and scientific foundations, economic and political implications, and impact on social and ecological systems. Featured speakers included Idaho Governor **Dirk Kempthorne**, former Secretary of the Interior **Bruce Babbitt**, and **Craig Manson**, Deputy Director of the U.S. Fish & Wildlife Service. The conference was organized by Bren Professor **Frank Davis**; **Dale Goble**, Margaret Wilson Schimke Distinguished Professor of Law at the University of Idaho College of Law; and Professor **Michael Scott** of the Department of Fish and Wildlife Resources, University of Idaho. The proceedings will be key to federal review of the Act this spring, and will be published in book form this coming year. For more information and links, please visit www.bren.ucsb.edu/supporting/special_projects.html



Anita Burke, an 18-year veteran of the oil industry and an outspoken advocate of sustainable development, visited the School twice last year, to speak at the State Legislative Leaders Foundation Conference in March and to present a CEM seminar in November.



The northern spotted owl has been a lightning rod for debate about critical habitat since its designation as a threatened species in 1990. Photo: Hollingsworth/USFWS.

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Conferences 2004

May 27

Second Annual Trade & Environmental Economics Conference: Bren Assistant Professor **Carol McAusland**

June 21-22

Building Confidence—Sustainable Policy to Practice

This three-day statewide building conference will include participants from over 300 public and private colleges and universities, state and federal agencies, and companies. It will focus on motivating and educating public and private universities and institutions about sustainable buildings, transportation, and purchasing practices and new policies, as well as on establishing and maintaining an information cooperative on best practices. There will be pre- and post-conference LEED™ and Labs21 laboratory design and environmental performance assessment workshops. For more information and to register, please visit www.bren.ucsb.edu/news/events/GreenBuildingConference2004.asp

MESSAGE FROM THE DEAN

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This is an excellent example of the Bren School's mission to make a significant impact in the arena of environmental problem-solving.

With all this good news to tell, mention must also be made of the potential impacts of the state's budget crisis on UC, UCSB, and the Bren School. On top of a \$74 million mid-year budget cut last year, the UC system has to deal with a permanent reduction of \$410 million for 2003-04, of which \$15 million is UCSB's share. At the system level, a good portion of this has been covered by significant increases in student fees and tuition. Due to a very conservative campus financial policy, academic programs at UCSB did not suffer badly in this round of cuts, but 2004-05 could be difficult given the state's large projected deficit. To date, the Bren School has benefited from an increase in discretionary funds from philanthropic and corporate sources that have more than compensated. Most significantly, if additional increases are made to student fees and out-of-state tuition for 2004-05, as seems likely, we could see a significant negative impact on MESM and Ph.D. applications. Student financial assistance remains our top fundraising priority.



Dennis J. Aigner, Dean

Bren School Takes Lead in the Greening of the UC Campus System

A visit these days to UCSB will immediately confirm the following fact: the UC system is the largest consumer of the construction industry in California. Within the next seven years, the UCSB campus alone will be constructing \$846,551,000 worth of capital projects. Extrapolating from this figure, the UC system may well be the second largest consumer of construction nationwide.

Volume and influence on this scale present an unprecedented opportunity to set high standards of sustainable construction and embed the concepts of green building into our culture. The Bren School is at the very forefront of this effort, setting the bar for UCSB and UC in general with its LEED™ Platinum-certified laboratory/office building—the greenest such structure in the United States. In July, the UC Regents formally adopted a Green Building Policy for all of its campuses (which will manifest most visibly in the new UC Merced campus currently under development). Bren's former Assistant Dean of Planning & Administration **Mo Lovegreen**, who oversaw Bren Hall's construction, was tapped this year to establish an Office of Sustainability (OS) at UCSB.

The Office of Sustainability has established several goals: to create a sustainability plan for UCSB to incorporate LEED™ criteria into UCSB's business practices, to pilot LEED™ commissioning of new buildings and existing campus buildings, and to integrate sustainability into the campus curriculum. In a landmark decision last fall, the goal to have all new construction achieve LEED™ silver certification was approved by the UCSB Campus Planning Committee. This makes UCSB the first UC campus to initiate LEED™ silver—a step up from what the Regents requested—as its practice. The OS will also lead the way in efforts on other campuses and across the country by providing direction on the U.S. Green Building Council (USGBC)'s "LEED™ for Campuses" program that will provide standard parameters for campus settings.

Many groups and departments on campus are connected to the OS through two committees, which are comprised of high-level administrators along with faculty from many departments: a combination of individuals with expertise in transportation, grounds, recycling, purchasing, architecture, construction management, physical facilities (operations and maintenance), energy management, undergraduate students with environmental interests, Bren MESM students, two Ph.D. students, and three LEED™ accredited staff professionals.

As an editorial in the *Santa Barbara News-Press* stated: "UCSB in 2002 opened one of the country's most environmentally friendly structures—the Donald Bren School of Environmental Science & Management—that cost only about two percent more than the bill without the green enhancements.

Some features will save dollars on energy bills for years to come. Paying a little more upfront reaps benefits for the bottom line and for nature. It's a lesson not just for the university but for builders outside campus, too."



RECENT BREN HALL AWARDS

- **Calibre Award for Environmental Leadership** (May 2003), sponsored by the International Interior Design Association (IIDA). The IIDA is an international networking and educational association of more than 10,000 professional members in more than 30 chapters around the world
- **Flex Your Power Energy Efficiency Award** (December 2003), one of 20 awarded in California. The statewide "Flex Your Power" campaign works with California's investor-owned utilities, participating municipal electric utilities, and other public and private sector participants to promote energy efficiency.



New EES Program Off to a Great Start

The joint Economics & Environmental Science (EES) Training Program got off to a stellar beginning. This unique, multidisciplinary program is designed to train environmental economists: those who conduct research—often in support of policy decisions—involving the interplay between economic forces and the environment. Students in the program are Ph.D. candidates in either the Bren School or in UCSB's Department of Economics.

The EES program provides a new model for doctoral training. For the first half of the program, students are rigorously trained in economics and also take courses in natural science. In their second year, students receive advanced training in one focus area of environmental science: climate, applied ecology, hydrology, or marine science. Students become full-time researchers in the second half of their five-year Ph.D. program. In 2002-03, seven Ph.D. students participated in the EES program. This year eight more outstanding students enrolled in the program.

The EES Training Program is partly funded by a five-year, \$3 million award from the National Science Foundation's Integrative Graduate Education and Research Traineeship Program (IGERT). The IGERT program is a new U.S. government initiative for rounding out traditional scientific training, so that scientists may be as comfortable and successful working in teams, in interdisciplinary areas, in foreign laboratories, and in presenting to the media, as they are in their own often narrowly focused specialties. Professor **Charles Kolstad** secured the grant and is faculty director of the program. **Margaret Connors** is the program's associate director.

For additional information, please visit the EES program's new website: www.ees.ucsb.edu



EES Ph.D. student Allison Huang, Assistant Professor Carol McAusland, Professor Charlie Kolstad, and EES Associate Director Margaret Connors.

Curriculum Highlights

New Courses

- Environmental Institutions: Rights, Rules & Decision-Making systems (ESM 248): **Oran Young** (Professor, Bren School)
- Governance for Sustainable Development (ESM 247): **Oran Young** (Professor, Bren School), **Matthew Stilwell** and **Durwood Zaelke** (Researchers, Bren School)
- The Role of Law in Coastal Zone Management (ESM 259): **Gail Osherenko** (Researcher, Marine Science Institute)
- Environmental Modeling (ESM 232): **Christopher Costello** (Assistant Professor, Bren School)
- Green Supply Chain Management (ESM 595T): **Roland Geyer** (Assistant Professor, Bren School)

Law Workshops & Classes

- Civil Procedure: **William Rubenstein** (Professor, UCLA School of Law)
- Energy Law & Policy: **David Spence** (Associate Professor, Law, Politics & Regulation, McCombs School of Business, University of Texas/Austin)
- Introduction to the National Environmental Policy Act (NEPA): **Mel Willis** (Assistant Researcher & Lecturer, Bren School)
- Federalism and Environmental Law: **Ann Carlson** (Professor, UCLA School of Law)
- Environmental Law & Policy: **Jody Freeman** (Associate Dean, Bren School; Professor, UCLA School of Law)
- Law of Environmental Management; Hazardous Waste Cleanup: Law and Reality: **Timothy Malloy** (Professor, UCLA School of Law)

New Faculty Profile: Roland Geyer

- International Environmental Law; Creating Markets for Ecosystem Services: **James Salzman** (Professor, Washington School of Law/American University)
- National Forest Management: **Sean Hecht** (Lecturer in Law; Executive Director of the UCLA School of Law's Environmental Law Center)
- Endangered Species Law and Policy: **Holly Doremus** (Professor, UC Davis School of Law)

Intensive Short Courses

- Soil Erosion Modeling (ESM 299): **Peter Kinnell** (Associate Professor, School of Resource Environment & Heritage Sciences, University of Canberra, Australia)
- Climate Economics & Policy (ESM 297): **Michael Toman** (Senior Economist, Inter-American Development Bank)

Additional Visitors 2003-04

- Principles and Practice of Environmental Planning (ESM 275): **Paul Wack** (Associate Professor, California Polytechnic State University)
- Industrial Ecology (ESM 282): **David Allen** (Professor, Chemical Engineering, University of Texas/Austin)
- Sustainable Entrepreneurship (ESM 296): **Karel Samsom** (Professor Universiteit Nyenrode, Netherlands)
- Environmental Risk & Assessment (ESM 282): **Michael Moore** (Managing Director, Huron Consulting Group; UVA/Darden)
- Water Policy (ESM 297): **Robert Wilkinson** (Lecturer, Environmental Studies, UCSB)
- Air Quality Management (ESM 221) **Mel Willis** (Assistant Researcher & Lecturer, Bren School)
- Fate & Transport of Pollutants in the Environment (ESM 222); **Mark Kram** (Bren Ph.D. alumnus)

Corporate Environmental Management MBA Program

This year, the CEM Program is being administered entirely by the Bren School (previously shared with UC Irvine), which has streamlined matters. In addition to **Dennis Aigner**, **Frank Davis**, and **Jody Freeman** from Bren, this year's CEM faculty includes **David Allen** from the University of Texas, **Charles Corbett** from UCLA/Anderson, **Michael Moore** from University of Virginia/Darden, and **Christine Rosen** from UCB/Haas.



The Bren School welcomed new faculty member **Roland Geyer** to its ranks this fall. Roland was born in Germany and studied in England and France, completing his doctoral work at the Centre for Environmental Strategy (CES) at

the University of Surrey in the U.K. He obtained his master's in physics at the Technical University in Berlin, where he also tutored theoretical and applied mathematics. In between degrees, he worked in Germany and in the U.S. as a consultant in financial risk management. He was a research associate at INSEAD in France, and at CES his two research projects investigated the economic and environmental sustainability of the iron, steel, and aluminum industries in the U.K.

Roland's research interests in life cycle assessment of products and sustainable patterns of products and consumption are a logical extension of the Bren curriculum. He uses combined models of industrial ecology and management science to assess the economic and environmental impacts of both product and consumption systems to provide a better, more realistic overview of the total life cycle of a product. Previously, especially in Europe, companies evaluated themselves—or were evaluated—by their particular part in the production of an item: one segment of manufacturing, for example, or marketing, or distribution. This site-specific or media-specific evaluation process enabled them to present what looked like a more environmentally sound picture of their responsibility. By looking at the entire picture, the new life-cycle perspective provides vastly more useful and realistic data—and can hold businesses more accountable.

Roland is currently researching a relatively undeveloped area in industrial ecology: the conditions that make remanufacturing or recycling attractive to businesses. As an assistant professor in corporate environmental management, he is teaching a seminar on Green Supply Chain and a course on Environmental Technology Management (ESM 288) this winter. His wife, Lisa Lamb, a musician and composer, runs a sonic branding business (creating musical 'logos' or signature sounds for products and companies) based in the U.K.

New Lab Facility at Bren

State-of-the-Art Electron Microscopy



Professor Trish Holden and engineer Jose Saleta in the MEIAF lab.

Thanks to the addition of a new cold stage that greatly broadens the possibilities for high resolution imaging, the Micro-Environmental Imaging & Analysis Facility (MEIAF) at the Bren School is now the only facility of its particular kind in the United States—and only one of three environmental scanning electron microscopy (ESEM) facilities in the state of California that is open to the public as well as to university researchers.

MEIAF was shepherded into being by Associate Professor **Trish Holden** who, with Professor Jeff Dozier and other UCSB professors, secured two National Science Foundation grants to partially fund the instrumentation. While scanning electron microscopy (SEM) is widely available, ESEM offers some unique capabilities for which there is a real need at UCSB and elsewhere.

“Many samples are destroyed or masked by conventional SEM preparation and imaging methods,” Trish explains. “The technology in MEIAF features ESEM, which circumvents destructive sample preparations and allows the option of imaging under a moderate vacuum and in a moist atmosphere. In this process, specimens can be imaged in their native state and maintained at near-ambient pressure, which facilitates direct observation of dynamic experiments such as crystal formation, hydration, and dehydration. The technology also enables X-ray detection, as well as quantification for elemental analysis. And the new cryo stage system allows for frozen specimen observation and freeze-fracture preparation. Now researchers in MEIAF can image ice and snow, or freeze soft or combined soft and hard specimens then fracture and image previously unresolved fracture phases.”

This new technology has a wide range of applications—from examination of fresh or preserved specimens of plant seedlings, insects, and mycelia by museums of natural history or biological research centers, to elemental analysis of pigments or other artists’ materials by art preservationists or historians, to cement science, fiber technology, medicine, micro-electrical mechanical systems, and forensics. MEIAF is staffed full time by engineer **José Saleta**. Researchers can bring samples to the lab in person, or ship them independently for analysis.

To see a complete gallery of images and read further about the facility, please visit the MEIAF website: www.bren.ucsb.edu/facilities/MEIAF

Additions to Bren Faculty 2003-04

Roland Geyer, Assistant Professor, Corporate Environmental Management, Bren School (industrial ecology and supply chain management)

Sanjoy Banerjee, Affiliated Professor, Chemical & Mechanical Engineering, UCSB (pollution processes)

Lorelei Moosbrugger, Affiliated Assistant Professor, Political Science, UCSB (comparative environmental policy)

Matthew Stilwell, Researcher, Bren School (Program on Governance for Sustainable Development)

Durwood Zaelke, Researcher, Bren School (Program on Governance for Sustainable Development)

Natalie Mahowald, former Assistant Professor, Bren School (atmospheric chemistry) is now a staff scientist at the National Center for Atmospheric Research in Boulder, CO, where her husband is employed.



Assistant Professor Hunter Lenihan (bottom) and colleagues, returning from an ocean research expedition.

Student News

New Alumni 2003



In June 2003, 37 Bren School master's students achieved their diplomas and joined the ranks of Bren School alumni. The new graduates are working in a variety of sectors. Some of their positions include watershed restoration program manager at Community Environmental Council (Santa Barbara, CA); research program manager of ecology at Vulcan Northwest (Seattle, WA); development associate at Clipper Windpower, Inc. (Carpinteria, CA); risk specialist at AIG Environmental (Los Angeles, CA); project manager at ENSR International (Camarillo, CA); community relations specialist at Katz & Associates, Inc. (San Diego, CA); and an internship at the Rocky Mountain Institute (Snowmass, CO). Bren graduates are also working overseas: on an environmental policy team at the World Wildlife Fund in Vienna, Austria; as an environmental instructor at Houghton College, which offers classes at Mikumi National Park in Tanzania; in the Peace Corps in Eastern Europe; and at Electric Power Development Company, Ltd. in Japan.

Group Projects 2003

- The Role of ISO 14001 in Environmental Management at U.S. Manufacturing Facilities
- Assessment of Stressors on Fall-Run Chinook Salmon in Secret Ravine (Placer County)
- Assessment of Seawater Desalination as a Water Supply Strategy for San Diego County
- Analysis of Management Strategies for Stormwater Conveyance Systems to Control Input of PCB-Contaminated Sediments to San Francisco Bay
- Tracking the Way Toward Sustainable Agriculture: Linking Economics and Ecology at Sunnyside Farms (Virginia)
- Santa Barbara County and Los Padres National Forest: Facilitating Community Collaboration in Recreation Management
- Wildlife Corridor Design and Implementation in Southern Ventura County

Group Project Presentations 2004

You are invited to attend the Class of 2004 formal **Group Project Presentations** on **Wednesday, April 21** at Fess Parker's DoubleTree Inn in Santa Barbara. The presentations will be given from 4-7 p.m.; a reception, no-host bar, and poster session will follow. **Douglas Wheeler**, a partner at Hogan & Hartson LLP and the former California Secretary of Resources, will be the keynote speaker. See our website for more information and directions to the event (www.bren.ucsb.edu/new/events/gp_pres_info.html). Please RSVP immediately to events@bren or (805) 893-6115. We look forward to seeing you there!



Class of '03 MESMs Duygu Tokat and Robert Priola (in back), and Jennifer Gibson, Shelly Magier, Alessandra Pomé, and Geoffrey Thomas (front), about to present their Group Project, "Analysis of Management Strategies for Stormwater Conveyance Systems to Control Input of PCB-Contaminated Sediments to San Francisco Bay."

Ph.D.s 2003

Five Ph.D. candidates successfully defended their dissertations and graduated in 2003. **Mel Willis** wrote his dissertation on the strategic environmental assessment of community air toxics exposure resulting from land use policy. His faculty advisor was Arturo Keller. He is currently an assistant researcher at Bren, teaching ESM 221.

Mike Singer's dissertation title was "Spatial Models of Hydrology and Sediment Transport and Their Application to River Restoration Planning in the Sacramento River," and he continues doing post-doctoral research on the Sacramento River. His faculty advisor was Tom Dunne. Mike is modeling

the export of sediment from the channel to the floodplain in exceptional floods and checking his predictions against sedimentation rates measured with concentrations of the isotope 210-lead in sediment cores. He is also an assistant researcher at Bren, and works in collaboration with state agency representatives concerned with water resource management and river restoration.

Mike Jennings's doctoral research involved a quantitative analysis of plant community variation across the Inland Pacific Northwest. His faculty advisor was Frank Davis. Mike has since returned to his full-time job at USGS Biological Resources Division in Moscow, Idaho.

Sanya Sirivithayapakorn's research was on the processes that control the transport of viruses and other colloids in groundwater. His faculty advisor was Arturo Keller. Sanya has returned to his native Thailand to accept a position as professor at one of that country's most prestigious universities.

Britta Bierwagen's dissertation was entitled "Ecological and Microevolutionary Effects of Urban Land-Use Change on Butterfly Dispersal." Her faculty advisor was Bruce Kendall. Britta is currently doing post-doctoral work in the Global Change Research Program, which is part of the National Center for Environmental Assessment (NCEA) at the Environmental Protection Agency (EPA).

Student Awards

In May 2003, at the Southern California meeting of the Society of Environmental Toxicology and Chemistry (SETAC), **Duygu Tokat '03** received the award for the best platform presentation by a student, as well as a \$200 stipend. Also in May, the UCSB Center for Entrepreneurship and Engineering Management (CEEM) sponsored a business plan competition in the biomedical or environmental enhancement areas. **Nick Burger '04**, now a Ph.D. student in the EES program, was awarded a \$3,500 scholarship by the Institute on Global Conflict and Cooperation Scholarship to complete an internship at Resources for the Future in Washington, DC. Bren Ph.D. candidate **Daniel Brooks** was one of three finalists with his project entitled Source Tracker; he was awarded \$500. And **Lisa Berry '04** was selected by the Academic Senate Council to receive a UCSB Distinguished Teaching Award plus a \$1,000 honorarium for her excellence in teaching and outstanding contributions to the classroom as a TA. This is the first time a Bren School student has been nominated or won this award. At the end of the academic year, **Brandy O'Gorman '03** won the Bren Faculty Achievement Award.

New Students 2003-04

Sixty-two new talented master's students with diverse backgrounds and five new Ph.D. students swelled our ranks this fall. They've worked in a diverse array of fields: education, research, the Trust for Public Land, the Peace Corps, U.S. Fish & Wildlife



Incoming master's students at orientation in September.

Service, irrigation design, the military, and the Monterey Bay Aquarium, as website developers, park rangers, and dolphin-trainers. Most have done field, volunteer, and intern projects with environmental groups and organizations, and are contributing to a lively spirit at the School this year.

Environmental Leadership Internship



Missy Soto '04.

Internships open new doors for students, as well as offering them opportunities to put their skills to work. This past summer, **Melissa Soto '04**, who is concentrating on coastal marine resources management, was awarded a scholarship to attend a 12-day Environmental Leadership Course offered by the Smithsonian Institution. Selected from 160 applicants worldwide for this training course, Missy was one of only 19 attendees—and only one of three Americans—from all over the world, including Argentina, Bolivia, Costa Rica, the Caribbean, Puerto Rico, Papua New Guinea, Nigeria, the United Kingdom, and Venezuela.

Founded upon the idea that strong leadership and communication skills are essential for effective biodiversity and environmental conservation, and that innovative ideas for conserving resources and minimizing development impacts must be successfully shared, the course covered foundation skills for the environmental leader, negotiation and conflict resolution strategies, and influential environmental

communication. It is offered under the auspices of the Smithsonian's Monitoring and Assessment of Biodiversity (MAB) program, founded in 1986.

"The skills I learned during this course," reported Missy, "can be applied not only to environmental leadership and negotiation, but also to goal-setting, time management, and overall well-being."

A Master's Student in Public Service



Das Williams '05.

Taking the concept of extracurricular activities to a new level, **Das Williams '05** was one of three candidates voted into the Santa Barbara City Council last November, garnering the second-largest number of votes (7,056) in a field of 10 candidates. Das grew up in Isla Vista and went to local public schools, attended Santa Barbara City College, and graduated from

UC Berkeley. He has served as co-president of the Environmental Defense Center, as environmental policy advisor to Assemblywoman Hannah-Beth Jackson (D-Santa Barbara), and as a teacher's aide. His platform stressed environmental issues such as promoting mass transit, banning oil tankers from the Santa Barbara Channel, minimizing overdevelopment of Santa Barbara, and clean-up of local creeks and beaches.

A front-page *Santa Barbara News-Press* story described Das thus: "He's young and politically ambitious. He's articulate and hardworking. And he unabashedly admits that he wants to shake up City Hall." At age 29, Das was the youngest in the race, and one of three socially progressive candidates.

"I don't think popularity at City Hall is the most important thing for a City Council candidate," Das comments. "Serving the interests of the neighborhoods is."

Graduation Celebration 2004

On Friday, June 11, the Bren School is holding a graduation celebration and brunch reception on the lawn in front of Bren Hall for all graduating students, Bren alumni, friends, and family. The celebration begins at 10 a.m. For information and to RSVP, please see the June calendar on the Bren Events webpage (www.bren.ucsb.edu/news/events/index.asp). Formal graduation exercises for the graduate division of UCSB will be held on Sunday, June 13, at 4 p.m. on the campus Faculty Club Green.

Student Fellowships

An unstinting commitment to assisting students is one of the keys to the Bren School's continued excellence, and is an area where donors can have a personal impact on individual lives.

Seventeen students in the MESM Class of 2005 and four students in the Class of 2004 were awarded donor-named fellowships and prizes for the 2003-04 academic year. Their decision to attend the Bren School was due, in part, to the support from donors who provided this extra margin that enabled the Bren School to successfully compete with other top programs in the nation for these superb candidates. We are grateful for the generosity of this year's donors.

Dennis J. Aigner Prize: **Helene Marsh '04**

Allen Associates Prize: **Christina Cairns '05**

Association of Environmental Professionals Prize:

Rachel Tornek '04

Hazel M. Blankenship Prize: **Catherine Ravenscroft '05**

Robert T. Deacon Prize: **Katrina Jessoe '04**

Robert T. Deacon Prize: **James Uwins '05**

Deanna and James Dehlsen Prize: **Joseph Kastner '05**

Dr. and Mrs. Eugene Ellis Prize: **Kapil Kulkarni '05**

Fred and Pamela Harris Prize: **Aaron Francis '05**

Gary and Joanne Hunt Fellowship: **Jeanne Boland '05**

Arturo and Brigitte Keller Prize: **Peng Wang '04**

Takashi Kiuchi Prize: **Connie Chen '05**

Claude G. Poncelet Prize: **Claire Cowan '05**

John C. Pritzlaff, Jr. Prize: **Jeff Phillips '05**

Brian and Joanne Rapp Prize: **Christina Danko '05**

The Reimer Family Prize: **Ryan McMullan '05**

Beth and Richard Rogers Prize: **Andrew Raaf '05**

Barry and Jean Schuyler Prize: **Corey Chan '05**

Barry and Jean Schuyler Prize: **Betsey Rubio '05**

Mary D. Nichols Fellowship: **Timothy Olsen '05**

Ronald and Charlotte Williams Prize: **Jonathan Koehn '05**



Career Development Director David Parker speaking with master's students at a professional development seminar held at a local restaurant.

Streaming Video Technology Comes to Bren Colloquium Room

Benefit Premiere of James Cameron's Titanic IMAX Film



James Cameron talks with Nobel Prize-winning Physics professor Alan Heeger and UCSB Chancellor Henry Yang.

In April 2003, Academy Award-winning film director **James Cameron** was the guest of honor at the benefit premiere screening of his newest IMAX film, "Ghosts of the Abyss" to raise funds for advanced technology in the Bren School's Colloquium Room and to provide research support for Cameron's Blue Planet Marine Research Foundation. The premiere was an outcome of the School's partnership with Cameron, the Windows Media division of Microsoft, and the Anschutz Foundation.

"Ghosts of the Abyss," digitally filmed in 3-D, is a remarkable exploration of the wreck of the *Titanic*—the subject of Cameron's Oscar Award-winning feature film "Titanic." "Ghosts of the Abyss" details Cameron's diving expeditions of the wreck, which took research vessels 2.5 miles beneath the surface of the North Atlantic Ocean to the sea floor.

From these three-person subs, two tiny especially designed traveling robots with lights and cameras were launched into the interior of the ship, filming rooms and items never before seen—including gorgeous unbroken stained glass windows, bedsteads, mirrors, glasses and plates, and personal effects—as well as the extraordinary rusticles that are feeding off the ship's iron hull. Narrated by actor Bill Paxton and including overlays of blueprints, room and hallway recreations, as well as ghostly passengers walking, dancing, and conversing, "Ghosts of the Abyss" brings the *Titanic* to life.

The 3-D technology employed in the making of the film vividly demonstrates how advanced technology can immerse a viewer in scientific research being conducted in extreme environments, thereby enhancing the learning process and increasing viewers' understanding of rare and distant species and habitats. In an interview Cameron noted, "Any kind of exploration should always try to acquire the highest level of imaging. That's how you engage people—you give them the sense that they're standing there."



Deep sea research of the Titanic today (right) helps scientists recreate the original (left).

Titanic Discoverer Takes Audience to the Ocean Floor

The excitement, immediacy, and potential of what this advanced technology can accomplish in the Bren School's Colloquium Room was unveiled at a special event in August 2003, with streaming live video from the Mediterranean Sea featuring the research of world-renowned scientist, UCSB alumnus **Dr. Robert Ballard '65**. Ballard—discoverer of the *Titanic* and founder of the JASON project—broadcast live from his research vessel, where he presented up-to-the-minute findings on his archaeological discoveries at the bottom of the Black Sea. He showed artifacts from shipwrecks that are thousands of years old—almost perfectly preserved due to the relative anoxicity of the water—and answered questions from the audience. The artifacts, and other evidence of ancient sea levels and previous settlements along what was then the existing shoreline, may offer proof of a cataclysmic flood that occurred 7,000 years ago when the Mediterranean Sea breached a land barrier to reach the Black Sea, corroborating the Biblical Noah's flood story.



Geography Professor Tanya Atwater presented a fascinating overview of the history of the Black Sea.

Dean's Council Breakfast Club Provides Open Forum to Community

The Breakfast Club, sponsored by the Bren School Dean's Council, is a primary conduit for outreach to the Santa Barbara community. This trice-yearly breakfast gathering features a presentation by a prominent thinker in an area of environmental science and management. They are held at the University Club in downtown Santa Barbara. Membership in the Breakfast Club is complimentary, and open to everyone.

The next Breakfast Club meeting, on **Friday, May 7, 2004**, features molecular biologist **Bob Goldberg**, a professor at UCLA, who will give a presentation on the emerging field of "plant genomics" and how it will help engineer and produce high-yielding crops to feed the world's growing population (10.5 billion people by the year 2050). For more information, and to request an invitation to this and future Breakfast Club meetings, please see the Breakfast Club webpage (www.bren.ucsb.edu/supporting/breakfast.html).

The first presenter in the series was **B.J. Kirwan**, an attorney with Latham & Watkins in Los Angeles, who spoke about the new federal regulations concerning the Source Review under the Clean Air Act recently promulgated by the EPA. In May 2003, Assistant Secretary for Policy Management and Budget in the U.S. Department of the Interior **Lynn Scarlett** discussed "Environmental Entrepreneurship: Moving from Conflict to Cooperation." In October 2003, **Hunter Lenihan**, an assistant professor at Bren who specializes in marine ecology and resource conservation, gave a presentation on coral ecology and restoration. And in February 2004, Bren Professor **Oran Young**, founder and co-director of the Program on Governance for Sustainable Development, spoke about "Managing the Global Carbon Cycle: Policies and Measures vs. Targets and Timetables."



Dennis Allen of Allen Associates is the new Chair of the Dean's Council.

Annual Corporate Summit & Golf Tournament

In April 2003, the Bren School held its first Corporate Summit, which brought together its Corporate Partner liaisons, the senior managers of leading companies and organizations, and members of the academic community. The topic of this first Summit was "The Business Case for Sustainability," featuring presentations by Mary Jane McQuillen, Vice President & Analyst for Citigroup Asset Management/Citigroup Global Markets, Inc. and Roberto Piccioni, Director, Environmental Health & Safety, Baxter BioScience. URS Vice President **Tim Cohen** chaired the event.

Held the morning prior to the annual Bren golf tournament & barbecue, the Summit is an excellent opportunity for business leaders and the academic community to discuss a key topic of business relevance from both corporate and academic perspectives before teeing off for an afternoon of golf.

This year's **Corporate Summit & 5th Annual Golf Tournament** will be held on **Friday, May 14, 2004**. The topic for this year's Summit is "Energy: What Every Corporation Should Know About Reliability, Renewable, and Distributed Generation." **William L. Bryan**, Division Vice President of Southern California Edison Company, will be the keynote speaker. For more information and to register, please visit our Corporate Partners webpage (www.bren.ucsb.edu/supporting/CorporatePartnersSummit2004.html).

Initiated in 1999 by two Bren Ph.D. students, the annual Bren golf tournament is enjoyed by Bren faculty, alumni, and staff, as well as corporate and strategic partners, and members of the Dean's Council and Advisory Board. Last year, 10 foursomes played in the tournament, with 50 more guests joining the post-tournament barbecue. **David Raney** of American Honda and three Bren alumni and students—**Willie Brummett '00**, **John Onderdonk '03**, and **Rachel Tornek '04**—were the victorious team.

For more information and to register, please visit the golf tournament webpage (www.bren.ucsb.edu/supporting/TournamentInvitation2004.htm).

We look forward to seeing you at one or both events!



Teammates Jana Hartline '04, Tommy Liddell '98, Ph.D. student Scott Lowe, and Bob Priola '03 on the green. For more photos, please visit www.bren.ucsb.edu/supporting/tournamentphotocollage.htm



New Corporate Partners

The Bren School is very pleased to welcome two new Corporate Partners.

Zurich North America is a leading commercial property-casualty insurance provider serving multinational, middle market, and small business sectors in the United States and Canada. Headquartered in Schaumburg, IL, Zurich North America has 12,750 employees and wrote \$13.6 billion in premiums in 2002. The company is comprised of eight U.S. business units as well as Universal Underwriters Group, Zurich North America Canada, and Zurich Corporate Solutions and Centre.

The parent company, Zurich Financial Services (ZFS), is an insurance-based financial services provider with an international network in North America, the United Kingdom, and continental Europe. Founded in 1872, ZFS has offices in approximately 60 countries and employs about 68,000 people. It is headquartered in Zurich, Switzerland.

Our corporate liaison with Zurich is Lindene Patton. Zurich North America's website is www.zurichna.com/zus/aboutUs.nsf

The largest privately supported international conservation organization in the world, the **World Wildlife Fund** (WWF) is dedicated to protecting the world's wildlife and wildlands and has more than 1 million members in the U.S. alone. Since its inception in 1961, WWF has invested in over 13,100 projects in 157 countries.

WWF has been a conservation leader for 40 years. It directs its conservation efforts toward three global goals—protecting endangered spaces, saving endangered species, and addressing global threats—by creating and strengthening parks and protected areas to weaving conservation into the fabric of local economic development, and from protecting endangered species to influencing global environmental policies.

Our liaison with WWF is Gina DeFerrari. The WWF website is www.worldwildlife.org

Recent Gifts to the Bren School

Dennis J. Aigner	Takashi Kiuchi
Allen Associates	National Foundation for Environmental Education
Bank of American Foundation	Claude G. Poncelet
Hazel Blankenship	Paul Portney
California Community Foundation	Bernard & Lori Sandler
Cole Family Foundation	Systech Engineering, Inc.
CH2M Hill	The Nature Conservancy
John & Beverly Colgate	Toyota
Frank Davis & Laura Haston	UCLA, Evan Frankel Environmental Law & Policy Program
Robert T. Deacon & Jennifer Purcell	University of Idaho
James & Deanna Dehlsen	URS
Dozier Charitable Trust	Venoco
Environmental Defense	Weeden Foundation
Dennis & Patricia Forster	Douglas Wheeler
S. David Freeman	Ron & Charlotte Williams
Mary Livingston Griggs Foundation	World Wildlife Fund
Fred & Pamela Harris	Zurich North America
International Academy of Santa Barbara	
Arturo & Brigitte Keller	

News from the Bren School Advisory Board

After seven years of outstanding leadership, Advisory Board Chairman and UC President Emeritus **Jack Peltason** has announced his retirement. Board member **Douglas Wheeler**, a partner at Hogan & Hartson, will succeed Jack as chairman at the next annual meeting on April 22, 2004.

At its annual meeting in April 2003, the Bren School gratefully acknowledged the services of Advisory Board members **Steve McCormick**, CEO of The Nature Conservancy; **Bruce Babbitt**, currently of counsel at Latham & Watkins; **Maureen Cropper**, a lead economist with the World Bank; **Mark de la Garza**, president of Watershed International; and Bren master's student **Brandy O'Gorman '03**.

The Bren School also welcomed new Advisory Board members **Brigitte Bren**, of counsel at Arter & Hadden and president/CEO of International Strategic Planning; **Graham Chisholm**, head of the California division of The Nature Conservancy; **Bruce Darling**, the University of California Senior Vice President for University Affairs; **Richard Rogers**, Chairman of the Board of Pacific Earth Resources; Bren master's student **Leanna Struzziery '04**; and Bren Ph.D. alumnus **Mel Willis**.

For brief biographies of each board member, please see the Advisory Board webpage (www.bren.ucsb.edu/people/catnew.asp?cat=advisory%20board).

Introducing Alumni Class Chairs

With the growth in number of Bren School alumni—six graduating classes of 196 MESM alumni total, plus eight graduated Ph.D.s—alumni from each class have stepped forward to serve as Class Chairs. We are delighted to welcome **Tommy Liddell '98**, **Ryan Pingree '99**, **Chris Coburn '00**, **Ian Adam '01**, **Amanda Eichel '02**, **John Onderdonk '03**, **Jana Hartline '04**, and **Karen Wolowicz '05** to their new posts.

Each Class Chair acts as a pointperson for the class, soliciting and communicating alumni news and information, helping facilitate internships and employment possibilities, and spearheading alumni fundraising efforts. Hitting the ground running, an unprecedented 82% of the class of 2003 participated in supporting the School with a class gift directed to Class of 2005 team-building efforts. This is a wonderful example of giving to the Bren community, and we hope to build on this great beginning.

Please visit the new Class Chairs webpage (www.bren.ucsb.edu/supporting/Alumni_Class_Giving.html) for contact information for the Class

Chairs. We encourage all of you to keep in touch with them and with the School when you move, change jobs, or have any news to share.

Bernard & Lori Sandler Make Generous Estate Gift



In October of 2003, Mr. and Mrs. Bernard Sandler made a contribution of named prizes to recruit two outstanding master's students to the Class of 2006. In addition to this wonderful gift, the Sandlers named the Bren School as the future recipient of a percentage of their estate, the current value of which is estimated between \$3-4 million.

The desire of Bernie and Lori Sandler is that their gift forms an endowment that will support as many outstanding students as possible who wish to enroll in the Bren School and need financial assistance. With careful administration of this fund in the years to come, the Sandlers are hopeful that the fund will continue to increase and provide the School the opportunity to train much needed environmental professionals worldwide "to help save this planet." Their planned gift also enables them to earn income and provide for their children and grandchildren as well as supporting the Bren School.

When asked what motivated their generous gift, Bernie, the former CEO of Commercial Talent Agency and co-founder of For Love of Life Foundation, stated "My wife and I are believers in taking care of all those we love. Other than the immediate family we feel the entire family of earth needs our support. It is our belief that to save the people and animals of the world we must first save the place in which we all live... We look at this as a gift to all and hope others can see the value in similar granting of estates aimed at expanding environmental education. The Bren School is training the next generation of environmental problem-solvers. Their education will enable them to be wise stewards of the planet. I can think of no better way to save the earth than to invest in the future of those who will ensure a healthy future for us all."

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