WHO IS THE BREN STUDENT?

A New Kind of PhD Student
The MESM Mix
Bren’s Eco-E Boom
Fueling Zero-Emissions Vehicles
Dean’s Message

This issue of Bren News is dedicated largely to our students — who they are, why they choose the Bren School, where that choice leads them, and how their experience reflects the school and its mission.

It reminded me of a process that began in 2007, before I was dean, when the Channel Islands National Marine Sanctuary (CINMS) first addressed the problem of endangered whales being struck and killed by container ships in the Santa Barbara Channel.

First-year Bren Student Leslie Abramson (MESM 2009), who was then interning with CINMS, co-authored a report offering recommendations for reducing the risk of ship strikes. Abramson continues to work on the issue today in her role as Sanctuary Advisory Council Coordinator for the Gulf of the Farallones National Marine Sanctuary.

Bren students became involved again in 2010, when a Master’s Group Project took up the ship-strike issue. At the time, the sanctuary staff and the Santa Barbara County Air Pollution Control District (APCD) were also thinking about how to control air pollution caused by the ships.

It turned out that the best way to reduce both ship strikes and pollution would be to slow the ships in the channel, but that would increase shipping companies’ costs, so CINMS started considering incentives.

Brainstorming on that subject while teaching a course at Bren, CINMS Resource Protection Coordinator Sean Hastings and his students had the idea of creating a kind of whale-credit trading program similar to California’s carbon-credit trading program. Hastings spoke with the APCD, and the idea evolved: perhaps funds from the state’s carbon-credit trading program could support the whale-credit plan.

Later, Bren professor Gary Libecap assigned students to do a cost-benefit analysis of the incentives project. Based on the students’ findings, the APCD wanted to launch a pilot program but needed funding. The Santa Barbara Foundation provided some and, after shipping companies embraced the idea, was joined by Santa Barbara County and the APCDs in Santa Barbara and Ventura. Finally, I was asked to moderate a public forum about the project in September.

The process says a lot about our school and its students. A Group Project led to a partnership. Our partner (CINMS) moved the idea along and included the APCD. Our students pursued it further, and then additional partners came on board.

This issue of Bren News is dedicated largely to our students — who they are, why they choose the Bren School, where that choice leads them, and how their experience reflects the school and its mission.

Milestone: The 1000th Graduate

Amid the buzz of kazoos and a shower of rose petals, the 2014 Bren School Commencement program came to a brief pause to celebrate the moment when Louisa Smythe (MESM 2014) became the school’s 1000th graduate.

“It was an honor to be the lucky thousandth graduate of the Bren School,” said Smythe, who smiled broadly on stage as the celebration occurred, with members of the Bren School’s all-student band, Brengrass, blowing kazoos and professors and Chancellor Henry Yang showering Smythe with rose petals. “It was a happy send-off after two fantastic years, surrounded by amazing people. I felt like my classmates were up there with me.”

The Bren School accepted its first students in 1996 and had nineteen graduates in the Class of 1998. The first PhD student was graduated in 2001. Back then, said Dean Steve Gaines, “The school had no building, no full-time faculty, and a curriculum that was very much in flux — primarily because there was no model for a school like this.” The school now has about 150 master’s students and 50 PhD students.
BN: What is the significance of the LCA study you prepared for the senate?

RG: This is the first time that a bill or regulation explicitly required an LCA to be conducted. That’s significant. It indicates that LCA is becoming a part of the environmental-policy process and how science can be linked to policy.

BN: What exactly did you examine?

RG: We had to model the entire used-oil management system in California — all the collection, storage, and transfer processes, and the steps involved in converting used oil into secondary products. We did that for the three kinds of reprocessing that take place, and for each process, we looked at eight environmental indicators, including climate change, acidification, smog, human health, and ecotoxicity.

BN: How many people took part in the LCA?

RG: The core team was made up of four people: myself, Trevor Zink [PhD 2014], postdoctoral researcher Brandon Kuczenski, and Ashley Henderson [MESM 2011], whom I recruited while she was in the Bren master’s program. Incidentally, she got a job out of this at the company owned by the man who chaired the external review of the LCA. I think that speaks to the quality of both Ashley’s work and the project.

BN: How was working as part of a government process unique?

RG: The project involved an extensive stakeholder process and quarterly meetings in Sacramento — a mix of thirty to fifty lobbyists, industry experts, and NGO representatives. It was a little like doing LCA with forty people looking over your shoulder. But it meant that we got immediate feedback and could address and integrate valid comments into the LCA. It felt good to complete the project under those conditions, knowing that, overall, the stakeholders accepted the validity of the work.

Kyle Meng

Kyle Meng is the Bren School’s newest professor. An economist who is dividing his UCSB academic appointment between the Bren School and the Economics Department, he earned both his master’s and PhD degrees in sustainable development from Columbia University after earning a BSE in civil and environmental engineering at Princeton University.

He is interested in two main topics: one is understanding the impacts and the costs of avoiding dangerous climate change; the other is how we get to useful climate change policies and how the political system interacts with economic cost-benefit analyses.

“My training is a little quirky,” he says. “My PhD was fairly interdisciplinary, focused about eighty percent on economics and twenty percent on atmospheric physics. It wasn’t too different from the training received by students on the PhD economics track at the Bren School.” He is teaching his first course, ESM 229, Economics and Policy of Climate Change, this quarter.

Dr. Meng is a classically trained pianist and once considered a musical career. One challenge in moving to California, he says, “was how to move a 1912 six-foot Steinway across the country.” He also cycles, runs, and plays soccer.

Ben Halpern

Congratulations to Bren professors Ben Halpern and David Tilman, who are included on Thomson Reuters’ new list of the world’s 3,200 most influential scientists.

Thomson Reuters analyzed citation data over the past eleven years to identify those who “are influencing the future direction of their fields, and of the world,” by virtue of the high impact of their work.

“It’s exciting to know that my research is having an influence,” Halpern said. “It is, of course, only one of many possible metrics that assess the impact of research, but it is an important one, and I’m thrilled to be included.”

According to Thomson Reuters, from 2002-2012, each of the 3,200 individuals on the list published the greatest number of highly cited papers in one of 21 broad fields. To be considered “highly cited,” a paper had to rank in the top 1 percent by citations for its field and year of publication.

Said Tilman, “I’m delighted to be included on this list of distinguished scientists, and to see that so many of them are friends I’ve known for years.”

A look through the third volume of the 5th Assessment Report on Climate Change (AR5), published earlier this year by the United Nations Inter-governmental Panel on Climate Change (IPCC), reveals two Bren School professors among the Coordinating Lead Authors: Professor Emeritus Charles Kolstad and Associate Professor Sangwon Suh.

Both professors served on Working Group III (Kolstad had done so also for the IPCC’s Fourth Assessment, released in 2007), which produced the volume “Mitigation of Climate Change.” Kolstad, a resource economist, served as co-coordinating lead author of Chapter 3, titled “Social, Economic and Ethical Concepts and Methods.” Suh, an expert in life-cycle assessment and the energy impacts of material flows, was a co-coordinating lead author for Chapter 5, titled “Drivers, Trends and Mitigation.”
This past summer, as the worst drought in California’s recorded history intensified, Bren adjunct professor Robert Wilkinson joined a group of other water experts, including Bren School PhD student Aubrey Dugger, to describe how California could be saving up to 14 million acre-feet of untapped water per year. That’s more water than is used annually in all of California’s cities combined. It could be done, say the authors, with an aggressive statewide effort to promote water-saving practices, reuse water, and capture lost storm water.

The findings appeared in the highly readable and comprehensive report titled The Untapped Potential of California’s Water Supply and published this past June by the Pacific Institute and the Natural Resources Defense Council (NRDC). Bren alumnus Jake Sahl (MESM 2013) also contributed to the report.

“Our current approach to water use is unsustainable, but that doesn’t mean there isn’t enough water to meet our needs,” said Kate Poole, NRDC senior attorney with the water program. Professor Wilkinson contributed to the chapters on agricultural water, storm water, and water re-use. Read the report at: pacinst.org/publication/ca-water-supply-solutions.

With global population projected to increase by 2.5 billion by 2050, the demand for animal protein is expected to grow by 80 percent over current levels.

Even if all of the world’s wild fisheries were operating optimally, they could provide only 10 percent of the projected increase in protein demand. Meeting that need on land would require an area the size of South America to raise animals and their feed. Aquaculture is often denigrated for its negative environmental impacts, but the environmental impacts resulting from aquaculture using best practices can be hundreds of times less than those generated by producing the same amount of protein on land.

See the complete interview at: bren.ucsb.edu/news/gaines_aquaculture_nceas.htm.

Environmental and natural resource problems tend to fall into two categories, says Bren professor Gary Libecap: too much production of something, leading to pollution or contamination of a resource, or depletion of resources, such as fish stocks or forests.

The standard responses to those problems are regulation and, less frequently, taxation. But such approaches don’t usually solve the problem, primarily because they don’t include incentives that motivate the regulated or taxed parties to respond. The result, says Libecap, is often a “them-against-the-state scenario.”

Libecap would like to see a system that uses property rights to create market-based cap-and-trade programs that make contributing to the solution a tradable asset. And that is the subject of his book Environmental Markets: A Property Rights Approach (Cambridge University Press, 2014). Co-authored by Terry L. Anderson, the 227-page book is intended as a text for those who need to understand the intricacies of rights-based approaches to addressing environmental and natural resource problems. It covers the theory behind cap and trade and, says Libecap, “all the cases we could come up with to show what works and what doesn’t, and the circumstances in which markets will be more or less effective.”
Bren students value the natural world and its importance to human well-being. They care about justice. They are drawn to California's natural diversity and to the Bren School's location overlooking the Pacific Ocean. They are optimistic realists who believe that solutions to environmental problems can be found and want to be involved in creating them. They embrace the challenges of interdisciplinary collaboration, because they are committed to finding the most innovative and comprehensive solutions to real-world problems. Whether they pursue PhD or master's degrees, students come to the Bren School to make a difference in the world.

A New Kind of PhD Student
At most universities, PhD students conduct research exclusively in a single discipline, disconnected from a broader perspective. Bren School doctoral students work differently: they first identify an environmental problem and then design a research project to solve it. This is the applied PhD.

Some Bren PhD students seek to understand human impacts on natural systems. Others focus on business structures and incentives for considering environmental impacts of a product throughout its life cycle. And others investigate social, economic, and policy drivers of environmental solutions.

Like students in traditional PhD programs, Bren doctoral students delve deeply into their central topic. But because real-world problems, by their nature, cross disciplines, Bren students must integrate broader subject areas to solve them.

That takes a different kind of person, and Bren students are willing to extend themselves into unfamiliar subject areas and

The MESM Mix
Bren School master's (MESM) students are a diverse group who arrive at Bren Hall with an array of experiences, interests, and academic backgrounds. By enrolling here, however, these distinctive individuals demonstrate an important shared perspective that might be described as practical idealism.

Faced with tremendous environmental challenges, Bren students choose to pursue meaningful, informed action. They enter the MESM program inspired by the natural world but guided by a desire to apply science and quantitative methods to environmental management.

They choose to be challenged and stretched by the faculty, the demanding interdisciplinary curriculum, and their equally ambitious classmates. They learn to ask the right questions, to work as part of a team, to request and provide support, and to communicate complex information effectively.

MESM students collaborate to develop solutions for clients
Students

New PhD
continued from page 5

collaborate with experts in various disciplines. It also takes creativity, patience, and communication skills.

“This is where our students want to be, because they realize that it’s where they can have the biggest impact,” says Dean Steve Gaines.

Bren PhD students are strongly connected to their peers. They camp together during an annual retreat at a Central California marine sanctuary, first-year students collaborate to co-author an interdisciplinary paper. PhD students share their ideas with fellows students and faculty at weekly coffee hours and bi-weekly seminars. They produce a research blog and share innovations and findings at their annual PhD student symposium.

The Bren PhD student is an interdisciplinary scholar and a well-rounded person. Below, we introduce you to a few of them and their research.

Applied Research

Lindsey Peavey with an olive ridley sea turtle

Scientists know a great deal about sea turtle nesting behavior and have taken many steps to protect nesting females and their eggs. But they know little about sea turtles’ habits where they spend the majority of their lives — in the ocean.

Fifth-year PhD candidate Lindsey Peavey is working to fill this knowledge gap through her research on the pelagic ecology of olive ridley sea turtles. She focuses on learning about the turtles’ roles in the food web, how they use habitat, and their foraging strategies on the open sea. Understanding these components of the animals’ behavior is valuable to those developing management strategies designed, say, to reduce unintentional interactions between turtles and fishing gear. More generally, Lindsey studies the ecology of large marine vertebrates (mammals, turtles, birds), with the intention of informing policies aimed at striking a balance between human resource use and species conservation.

Fourth-year student Adeyemi Adeleye is interested in the fate and transformation of engineered nanomaterials (ENMs) in natural aquatic systems. Used increasingly in consumer and industrial products, ENMs are being released into all kinds of aqueous environments. Understanding how specific particles move through them and what exposure levels to these materials are occurring as a result is necessary in order to assess any risk they may pose.

Adeyemi is studying how microbial extracellular polymeric substances (EPS) might affect the fate and transformation of widely used ENMs. He is currently studying the release of nano-copper and nano-zinc from common antifouling paints (used on boats), which often contain compounds of copper and/or zinc used as biocides. With ENMs multiplying exponentially in consumer products and, thus, in the environment, science such Adeyemi’s can help society avoid environmental surprises.

Now in his fourth year, Eric Fournier is interested in the “energy-water nexus,” a term used to describe the dynamic relationship between the water used to produce energy and the energy used to purify and transport water. He is investigating the reuse of treated municipal wastewater, California’s fastest-growing source of new water supply.

Eric is using extensive mapping data to construct an integrated assessment model. The model will be used to understand the energy-water usage efficiency of engineering projects that involve reusing treated municipal wastewater to recharge groundwater aquifers.

The components of the model require Eric to develop a quantitative understanding of the location and size of groundwater recharge sites; address the multiple factors that determine where infrastructure can be built to transport treated wastewater to a recharge site; and develop a spatially explicit life-cycle inventory to describe all of the energy and material inputs associated with a reuse project. Identifying how various geographic contexts influence the water-energy efficiency of such efforts will provide water resource managers with a more comprehensive understanding of the environmental impacts of existing and proposed reuse systems.

Sixth-year student Sara Sutherland studies the impacts of natural-resource management on industries and communities. For instance, the implementation of rights-based fishery management — in which fishermen receive ownership rights to a designated portion of a fishery’s harvest or an area in which to fish — has been met with resistance, particularly by seafood

see PhD Research on page 7
processors, despite gains in terms of fish stocks and harvesting efficiency realized under such management. How various groups in the supply chain perceive the impact of the new management strategy influences their positions relative to it. Further, the input of seafood processors and other stakeholders may influence public policy, thus affecting when and if a catch-share program is implemented. Sara’s dissertation examines the sources of seafood processors’ opposition to rights-based management, the consequences of such opposition, and ways to resolve it.

Also in his sixth year, Kyongho Son is building a better model to understand how watersheds function under climate change. Traditionally, in seeking to characterize how a system worked, hydrologists studied only water flow. More recently, it has become clear that the amount of water a system contains and releases is determined by an array of factors including elevation, the steepness of slopes and the directions they face, vegetation, soil, and atmospheric conditions. Mountain watersheds have a large amount of variance in such components over short spatial scales, what scientists refer to as “high spatial heterogeneities.” Thus, a key challenge in modeling to assess mountain watersheds under climate change is how and to what degree to account for those variations. Using satellite imagery for small square grids of less than 30 meters on a side, Kyongho is assessing how various components are distributed in estimating the watershed-scale ecohydrologic response to changes in climate over time.

The Master’s Internship: A Key Stop on the Professional Path

Jacob Skaggs knew he wanted to intern abroad, preferably in a developing nation, and he spent the summer in Kampala, Uganda, working for the U.S. Agency for International Development (USAID) Environment Team. His job was to research and design local environmental projects that the USAID mission in Uganda will support. They included a biodiversity-focused conservation trust fund and a biodiversity conservation activity that integrates agricultural development, family planning, and community health. He also had the opportunity to conduct visits to project sites related to climate change adaptation and agriculture.

Hansa Srinivasan wanted to broaden her understanding of transnational challenges and emerging environmental security issues while honing her analytical and organizational skills. As a native of India, she also hoped to work for an organization that focuses on developing countries. Her internship with the World Resources Institute (WRI) in Washington, D.C., met the requirements. Hansa’s varied duties in the WRI Food, Forest and Water Division included researching potential countries of focus for restoration activities, reviewing proposals and publications, and assisting in the development of funding proposals, blogs, and case studies.

Sam Young is another student who came to Bren wanting to complement field work with policy-related experience. Interning with Earthmind in Geneva, Switzerland, he took the lead in building and reorganizing websites, and researching and compiling...
Students

**Eco-E Boom at Bren**

Students in the Eco-Entrepreneurship (Eco-E) focus have experienced extraordinary success since the program was created in 2007, and particularly since 2012, when a new methodology was introduced, focusing on the “lean startup,” the business model rather than the business plan, and customer development.

Six teams have launched or are launching their businesses, including three of the six 2014 Eco-E projects.

“It’s amazing that the program is so young and we already have students launching businesses,” says Eco-E program manager, Emily Cotter. The first to launch was Birdeez in 2012. The mobile app for birdwatchers, conceived by Jeff Simeon (MESM 2012), can be purchased as a $1.99 download from the Apple App Store.

Next is Smarty Pants, which recently incorporated as a nonprofit. Developed by three MESM 2013 students, the business creates interactive media lessons that use environmental contexts to teach science.

The three teams launching from the Class of 2014 are Bottle Branders, Charborn, and Salty Girl Seafood. Salty Girl, which provides source-to-consumer fresh seafood while addressing issues of sustainability, mislabeling, and transparency, is already operating. Charborn, currently in the process of launching, sells and distributes biochar, an environmentally friendly biomass-based soil amendment. And Bottle Branders is preparing to introduce its improved version of the growler, the reusable half-gallon container popularized by microbreweries.

Bren School Eco-E teams have also excelled in national business competitions against teams from top MBA programs:

**MESM Internships**

continued from page 7

literature for the company’s Wildlife Trade, BioTools for Business, and Verified Conservation Areas projects. Shortly after starting, Sam’s supervisor invited him to attend the International Union for Conservation of Nature’s World Parks Congress in November.

The Environmental Defense Fund’s Climate Corps was the pathway to Claire Dooley’s fellowship at Apple headquarters in Cupertino, California. In her role, she supported efforts to implement energy-efficiency and renewable-energy strategies at the facility, and to evaluate strategies for future sustainability efforts in several areas. Claire had wanted to gain direct corporate environmental management experience in the San Francisco Bay area to supplement her previous consulting experience.

Adam Jorge had two internships that reflected his specialization in Pollution Prevention and Remediation. As a Commercial Toxics Reduction Intern with the San Francisco Department of Environment, he conducted scientific analysis and reporting on emerging pollutants, and worked on life-cycle assessment and program development for a healthy-schools initiative. At the University of Witwatersrand, in Johannesburg, South Africa, he collected primary data on indoor air pollution and indoor environmental quality in neighborhoods surrounding Johannesburg’s mining regions.

Jim Bond used his technical writing skills and economics knowledge while contributing to a project in the Flow Department and working with the Ecosystem Services and Legal/Policy Departments at The Freshwater Trust in Portland, Oregon. Having a strong background in government work related to his Bren specialization, Water Resources Management, Jim wanted to extend his skill set and knowledge base to advance his career after graduation.

Keith Shattenkirk came to Bren seeking a career in conservation planning. As part of the Net Impact National Parks Business Plan Internship, Keith was involved in setting priorities and analyzing financials and organizational staffing for the Interpretation & Education Division of California’s Sequoia & Kings Canyon National Park. The internship allowed Keith to combine his prior business-development experience in corporate development for the Anaheim Ducks hockey franchise with what he has learned so far at the Bren School.
Birdeez founder Simeon won a $5,000 first-place prize at the 2012 UCSB New Business Venture competition, and a DEMogod award as one of top five presenters at the DEMO Conference in Santa Clara, California.

In 2012 Forget Me Not Sourcing won the Southwest Regional round of the annual Walmart Better Living Business Plan Challenge, earning the right to compete in the semifinals at Walmart’s home offices in Arkansas. Their business model supported greening and environmental justice in fabric sourcing.

In 2013, SunShares, a business model to facilitate financing of community solar installations, also made the Walmart semi-finals.

Smarty Pants was one of only 28 teams (of 77 entrants) to earn a spot in the semifinals of the 2013 International Business Model Competition, held at Harvard University.

Salty Girl Seafood won three awards and $12,500 at the 2014 UCSB New Venture competition, and Bottle Branders took home a prize worth $5,000.

Charborn made it into a select group competing for $100,000 of funding as finalists in the 2014 Barrett Foundation Business Concept Challenge.

For Eco-E students at the Bren School, these are boom times, indeed.

Employers love Bren students. Here, they tell you why.

Bren students are successful in the professional world. They know how to get a job, they arrive at work prepared to make a difference, and they tend to get promoted quickly. The people who know that best are employers, like the following.

“We hire MBAs, attorneys, and biologists, but unless they have a lot of professional experience, they don’t normally come to the discipline with a view that’s as broad as what Bren students have,” says E. J. Remson, who, as Senior Program Manager at The Nature Conservancy (TNC), has hired numerous Bren students as interns and graduates as full-time employees. “They seem uniformly bright, business-like, and mature, and they have broad exposure to environmental issues. They’re not just coming at a project as a biologist or another kind of scientist, or with only a management perspective. They have a comprehensive understanding of a complex field.”

Perhaps most important, Remson adds, “We work with nontraditional partners and seek win-wins with companies that aren’t necessarily interested in the environment, and Bren students are savvy working with partners and their political sensitivities.”

As a principal at the consultancy RMC Water and Environment and its senior water resources planner, UCSB graduate Persephene St. Charles has hired at least ten graduates of the Bren School.

“As a relatively small firm [eight offices, all in California] that competes with much larger companies, we need to have significant differentiators, and one of the biggest ones we hear about from clients is our ability to communicate,” she explains. “We place a high value on that, and Bren students arrive with the importance of communication already ingrained in them, along with a technical appetite. And because of their group work in the Bren curriculum, they understand applied research, the importance of a client’s deliverable, and all forms of communication. They’re confident, they write well, and they’re more inclined to feel comfortable in a client meeting and in a marketing role, trying to win business.”

She notes the support students receive from the Career Services team, saying, “The grooming that comes with the program makes Bren students very marketable.”

For five years, now-retired U.S. Environmental Protection Agency (EPA) program management officer Roberta Miller recruited students at U.S. universities for EPA internships intended to lead to full-time jobs for qualified candidates, so she had a stake in finding the best students, those who could be hired after their internship.

She recruited some twenty Bren students into the agency and says that their appointment rate to full-time positions after their internships, either at EPA or other federal agencies, was above 90 percent. The only ones not appointed, she explains, were those who chose a different direction on their own.

“Lots of graduate schools were lucky if they got one student hired per year,” Miller says. “We recruited about four per year from Bren, and one year we brought in six. Bren students are absolutely tops; there’s a polish to a Bren student that isn’t always apparent in other students.”

As Resource Protection Coordinator for the Channel Islands National Marine Sanctuary, Sean Hastings is approached by graduate students from around the world who want to work on ocean management and conservation issues.

“I can spot a Bren student or a recent graduate of the program right away,” he says. “They come with an impressive world view on an array of the most challenging current and future issues. They also possess important specific skill sets, from modeling and quantitative analysis to the ability to conduct policy and legal research to writing experience and skills in negotiating, collaboration, and field work. Most importantly, they bring acute listening skills and the ability to assimilate various perspectives. This impressive combination of training and experience distinguishes a Bren graduate as someone who can break down ocean management challenges and propose reality-based solutions. The Bren School has the right recipe to advance ocean management in the government, non-government, and private sectors.”
SCE Gift to Expand Reach of Visitors Center

For more than 15 years, Southern California Edison (SCE) and the Bren School have formed a powerful alliance, partnering the professional innovation of a top energy corporation with the research and academics of one of the finest professional environmental schools in the nation. This partnership has benefited industry, education, and the public.

SCE has recently strengthened this alliance with a gift of $100,000 to the Bren School to support two emerging initiatives. First, SCE will fund technology to transform the Edison Visitor Center at Bren Hall into a distance learning center. The mission of this project is to enable the Bren School to offer courses and workshops globally that focus on energy efficiency, sustainable technology, and other academic offerings reflecting Bren School faculty expertise. Through distance learning, the Bren School will be able to increase scientific literacy in both K-12 students as well as the general public.

Second, SCE will fund the Coastal Marine Ecosystem Restoration Initiative (CMERI) to examine the effectiveness of marine resource restoration efforts. Initially, CMERI will support the enhancement of coastal marine resources in Southern California through a pilot project to assess the influence of a recent massive restocking project on the white seabass population near SCE’s now-closed San Onofre Nuclear Generating Station. The pilot project is intended to lead to future projects in California and elsewhere examining the capacity of reef restoration programs to enhance fisheries resources.

Collaborative science for solutions provides the opportunity to test innovative approaches for meeting conservation, restoration, and management challenges in the coastal marine environment. We are grateful to our partners at SCE for their vision in supporting the exciting CMERI initiative.

To contact the development team:
Assistant Dean for Development Andrew Krupa andrew@bren.ucsb.edu; 805-893-3712
Associate Director of Development, Corporate & Foundation Relations, Lindsey Kaplan lindsey@bren.ucsb.edu; 805-893-5047
Development Assistant Patti Winans patti@bren.ucsb.edu; 805-893-4589

Recent Donors
The Bren School would like to thank the following for their recent gifts of support.

<table>
<thead>
<tr>
<th>Alumni</th>
<th>Recent Donors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jessica Arm ‘14</td>
<td>Tinya Hoang ‘14</td>
</tr>
<tr>
<td>Samantha Arthur ‘14</td>
<td>Jason Huffine ‘14</td>
</tr>
<tr>
<td>Gina Auricemma ‘14</td>
<td>Evan Johnson ’08</td>
</tr>
<tr>
<td>Samantha Baker ‘14</td>
<td>Laura Johnson ’14</td>
</tr>
<tr>
<td>Alexandra Bell ’08</td>
<td>Zachary Jylkka ’14</td>
</tr>
<tr>
<td>Karin Bencala ’06</td>
<td>Nicole Kahal ’14</td>
</tr>
<tr>
<td>Harry Bergmann ’14</td>
<td>Jonathan Koehn ’05</td>
</tr>
<tr>
<td>Niles Brinton ’14</td>
<td>Adam Kreger ’14</td>
</tr>
<tr>
<td>Alex Brotman ’15</td>
<td>Ivy Ku ’14</td>
</tr>
<tr>
<td>Kristen Byler ’14</td>
<td>Kapil Kulkarni ’05</td>
</tr>
<tr>
<td>Alexandre Caillat ’14</td>
<td>Maxwell Ludington ’14</td>
</tr>
<tr>
<td>Bret Callaway ’14</td>
<td>Mary Luna ’14</td>
</tr>
<tr>
<td>Todd Carlin ’14</td>
<td>Rahul Madhusudan ’14</td>
</tr>
<tr>
<td>Jocelyn Christie ’14</td>
<td>Jenny Marek ’08</td>
</tr>
<tr>
<td>Tyler Clavelle ’14</td>
<td>Kara Mathews ’08</td>
</tr>
<tr>
<td>Ashley Conrad-Saydah ’08</td>
<td>Casey Maue ’14</td>
</tr>
<tr>
<td>Nicole Corpuz ’14</td>
<td>Dustin Merback ’14</td>
</tr>
<tr>
<td>Jessica Couture ’14</td>
<td>Jessica Midbust ’14</td>
</tr>
<tr>
<td>Taylor Debevec ’14</td>
<td>Renato Molina ’13</td>
</tr>
<tr>
<td>Emily Demarco ’14</td>
<td>Michael Mori ’14</td>
</tr>
<tr>
<td>Jenna Driscoll ’13</td>
<td>Kavitha Nambari ’14</td>
</tr>
<tr>
<td>Norah Eddy ’14</td>
<td>Christopher Newman ’14</td>
</tr>
<tr>
<td>Elena Egorova ’14</td>
<td>Andrew Nguyen ’14</td>
</tr>
<tr>
<td>André Estrada ’14</td>
<td>Amy Noddings ’08</td>
</tr>
<tr>
<td>Katherine Filipini ’14</td>
<td>Christopher Noddings ’09</td>
</tr>
<tr>
<td>Breanna Flanagan ’08</td>
<td>Pablo Obregon ’14</td>
</tr>
<tr>
<td>LeeAnne French ’10</td>
<td>Casey O’Hara ’14</td>
</tr>
<tr>
<td>Darrell Gregg ’14</td>
<td>Heather Perry ’14</td>
</tr>
<tr>
<td>Drake Hebert ’14</td>
<td>Katie Peterson ’14</td>
</tr>
<tr>
<td>Clayton Heinrich ’14</td>
<td>Shelby Petro ’14</td>
</tr>
<tr>
<td>Elizabeth Hiroyasu ’14</td>
<td>Erin Pettifor ’02</td>
</tr>
<tr>
<td></td>
<td>Giles Pettifor ’02</td>
</tr>
<tr>
<td></td>
<td>Noelle Phares ’14</td>
</tr>
<tr>
<td></td>
<td>Deborah Pierce ’14</td>
</tr>
<tr>
<td></td>
<td>Harish Prather ’14</td>
</tr>
<tr>
<td></td>
<td>Yuwel Qin ’14</td>
</tr>
<tr>
<td></td>
<td>Paula Richter ’14</td>
</tr>
<tr>
<td></td>
<td>Hannah Rieseley-White ’14</td>
</tr>
<tr>
<td></td>
<td>Shanon Rivers ’14</td>
</tr>
<tr>
<td></td>
<td>Timothy Robinson ’93</td>
</tr>
<tr>
<td></td>
<td>Jennifer Roecks ’14</td>
</tr>
<tr>
<td></td>
<td>Elizabeth Ross ’14</td>
</tr>
<tr>
<td></td>
<td>Allison Rowe ’14</td>
</tr>
<tr>
<td></td>
<td>Francisca Santana ’14</td>
</tr>
<tr>
<td></td>
<td>Lindsey Sarquilla ’14</td>
</tr>
<tr>
<td></td>
<td>Michael Schwartz ’12</td>
</tr>
<tr>
<td></td>
<td>Karen Setty ’07</td>
</tr>
<tr>
<td></td>
<td>Peter Shellenbarger ’13</td>
</tr>
<tr>
<td></td>
<td>Claudia Soholtoku ’02</td>
</tr>
<tr>
<td></td>
<td>Jota Soholtoku ’02</td>
</tr>
<tr>
<td></td>
<td>Jonathan Sim ’14</td>
</tr>
<tr>
<td></td>
<td>Ryan Smith ’11</td>
</tr>
<tr>
<td></td>
<td>Louisa Smythe ’14</td>
</tr>
<tr>
<td></td>
<td>Runsheng Song ’14</td>
</tr>
<tr>
<td></td>
<td>Sarah Sorensen ’14</td>
</tr>
<tr>
<td></td>
<td>Timothy Stilling ’14</td>
</tr>
<tr>
<td></td>
<td>Lindsey Taggart ’08</td>
</tr>
<tr>
<td></td>
<td>April Teekell ’04</td>
</tr>
<tr>
<td></td>
<td>Adam Teekell ’04</td>
</tr>
<tr>
<td></td>
<td>Hannah Tillmann ’14</td>
</tr>
<tr>
<td></td>
<td>Molly Troup ’13</td>
</tr>
<tr>
<td></td>
<td>Sinclair Vincent ’14</td>
</tr>
<tr>
<td></td>
<td>Morgan Visalli ’14</td>
</tr>
<tr>
<td></td>
<td>William Vosti ’14</td>
</tr>
<tr>
<td></td>
<td>Kristine Wall ’04</td>
</tr>
<tr>
<td></td>
<td>Katherine Westfall ’14</td>
</tr>
<tr>
<td></td>
<td>Benjamin White ’14</td>
</tr>
<tr>
<td></td>
<td>Melvin Willis ’99, ’03</td>
</tr>
<tr>
<td></td>
<td>Ryan Wilson ’14</td>
</tr>
<tr>
<td></td>
<td>Neil Wilson ’14</td>
</tr>
<tr>
<td></td>
<td>Yingda Xu ’14</td>
</tr>
<tr>
<td></td>
<td>Alana Yurkanin ’14</td>
</tr>
<tr>
<td></td>
<td>Jose Zenteno ’14</td>
</tr>
<tr>
<td></td>
<td>Dongxu Zhou ’12</td>
</tr>
<tr>
<td></td>
<td>Dale Zurawski ’04</td>
</tr>
<tr>
<td>Faculty &amp; Staff</td>
<td>Satie Airamé</td>
</tr>
<tr>
<td></td>
<td>Steve Gaines and Peggy</td>
</tr>
<tr>
<td></td>
<td>Lubchenko</td>
</tr>
<tr>
<td></td>
<td>Lindsey Kaplan ’12</td>
</tr>
<tr>
<td></td>
<td>Andrew Krupa</td>
</tr>
<tr>
<td></td>
<td>David Parker</td>
</tr>
</tbody>
</table>

Friends
Brooks Beard
Russell and Tansy Birchim
Craig and Gayle Cummings
Dennis and Patty Forster
Niko Hartline
William Kaplan
Kim Kimbell
Patrick Marek
Geoffrey Staff
Howard Sussman
Danielle Willis
Herbert Wright

Foundations & Corporations
Association of Environmental Professionals
Community Foundation for Monterey County
Michael J. Connell Trust
Defenders of Wildlife
Dehlsen Associates, LLC
National Philanthropic Trust
New Irvine Ranch Conservancy
Santa Barbara Foundation
The Stebbins Fund, Inc.
Toyota Motor Sales, U.S.A., Inc.
Walton Family Foundation
1998

Wilson Environmental Contracting, the company started by Daniel Wilson (MESM) after graduating from Bren, has had another great year, receiving multiple awards in recognition of its water-conserving designs.

2000

In June, Chris Coburn (MESM) accepted the position of executive director with the Resource Conservation District of Santa Cruz County (RCD). The RCD works with willing landowners to conserve and restore the county’s natural resources.

2002

Mark Kram (PhD) received the 2014 ASTM International D18 Technical Editors Award for his work on the ASTM book Continuous Soil Gas Measurement: Worst Case Risk Parameters.

Jonathan Saben (MESM) made partner at the San Francisco law firm Folger Levin LLP. He recently moved to Orinda, California, where he lives with his wife, Abigail, and their three-year-old twin daughters, Sydney and Madison.

2003

Danielle Fest Grabel (MESM) accepted a position as a senior international policy analyst with the Environmental Investigation Agency. She also co-owns Ravenwood Organic Farm in the Mt. Hood area of Oregon.

2005

Elizabeth (Sanger) Flegel continued to enjoy her work immensely as she approached her five-year anniversary as water conservation coordinator for the City of Mountain View, California. She and her husband, Nick, also had their second daughter, Emily Kay, on April 16, and their daughter Rosie turned two in January. The family lives in Redwood City.

A year ago this October, Theresa Lancy (MESM) was promoted to water distribution planner for the City of Santa Barbara Water Resources Division. Her replacement in her previous position as water resources specialist is fellow Bren alumna Dakota Corey (MESM 2008).

Since his election to the California State Assembly in 2010, Das Williams (MESM) has served as chair of the Committee on Higher Education. He also continues to work on environmental policy and recently authored a bill to close green-waste credit loopholes. He and his wife, Jonnie Erika Williams, recently moved to Carpinteria.

2006

On April 21, Erin (Hardison) Jones and her husband, Chris Jones (both MESM), welcomed a baby girl named Amelia Lynne Jones.

After six years at the Bay Area Air Quality Management District, Avra Goldman (MESM) left her position, took some time off, and then enrolled at the Maryland Institute College of Art in August to pursue a Master of Professional Studies degree.

Kaleena (Wheeler) Johnson and her husband, Chad Johnson, welcomed their first child, a son named Corbin James Johnson, on July 23.

2008

Overseeing the Santa Ynez Chumash Environmental Office from 2007 to 2014, Josh Simmons (MESM) recently started Prosper Sustainably, a consulting firm that assists businesses, governments, nonprofits, and tribal communities in developing and implementing solutions to meet environmental and sustainability needs.

2009

Last July, Sarah (Bumby) Anderson transferred from CH2M HILL’s office in Philadelphia to its corporate headquarters in Englewood, Colorado. Also, Sarah and her husband, Doug, welcomed their first child, Warren Edward Anderson, a year ago, on June 11, 2013.

Ashley Dean (MESM) and her husband, Paul Spraycar (MESM 2009), recently joined her parents in launching a Napa Valley family wine label, Spiriterra Vineyards. “Next time you’re in the valley, come by for a glass of wine,” she says.

Lara (Polansky) Buluç (MESM) and Aydin Buluç were married on May 2 in Berkeley. Four fellow Bren alumni attended the wedding, where, says Lara, “We most assuredly danced to ‘Wagon Wheel.’” Lara, Aydin, and their dog, Ozzy, live in Albany, California.

In June, Jonathan Berlin (MESM) moved from Ventura to Berkeley, where he is working as a trail and open-space planner for Rincon Consultants.

Kellen Klein (MESM) is now engaged to Jane Cartwright (MESM 2011); see above.

2011

Jane Cartwright (MESM) and Kellen Klein (MESM 2012) became engaged and moved to Portland, Oregon, where Jane accepted a new job as a sustainability reporting analyst at Nike. Kellen is helping his employer, Future 500, start a Portland satellite office.

On April 12, Kristiana Lorraine Teige and Liston Witherill (both MESM) married at the Santa Barbara Museum of Natural History. Michael Curry (MESM 2012) presided, and other Bren alumni attended.

In June, Jonathan Berlin (MESM) moved from Ventura to Berkeley, where he is working as a senior researcher with the University of California, where he is working as a senior researcher with the University of California.

In May, Philip Curtis (MESM) moved from Santa Barbara to Fayetteville, Arkansas, to start a new job as a senior researcher with the Food, Beverage and Agriculture sector at The Sustainability Consortium (TSC).

In August, Yoel Kirschner (MESM) moved from Los Angeles to Malawi, Africa, to work as the REDD+ advisor to the government of Malawi on behalf of the U.S. Forest Service International Programs.

Linda Kwong (MESM) began working as a land assistant at Peninsula Open Space Trust in September 2013 and was promoted this past July to land associate. She also married Michael Seeman in June.
Powering up California’s Zero-Emissions Vehicles

Governor appoints alumnus Tyson Eckerle to manage infrastructure development

Greening California’s transportation sector has proven to be a challenge, and the average driver still gets around in a traditional fossil-fuel-burning car, often alone. But Governor Brown and others in state government are determined to reduce transportation-related greenhouse gas emissions, and a key goal is to put 1.5 million zero-emission vehicles (ZEVs), including plug-in electric (PEVs) and hydrogen-fuel-cell electric vehicles (FCEVs), onto California roads by 2025.

While some public charging stations exist for PEVs, which can also be recharged at home, only ten public fueling stations are currently available for FCEVs in California. Since car makers won’t build the cars and consumers won’t buy them if they can’t be refueled, creating the fueling infrastructure is the first priority. To that end, last January Governor Brown appointed Bren alumnus Tyson Eckerle (MESM 2009) as California’s first Zero Emissions Vehicle (ZEV) Infrastructure Project Manager.

“It’s a dream job for me at this point in my career,” says Eckerle, who was previously executive director at Energy Independence Now. “It’s a change-the-world type of position with a lot of potential influence.”

For Eckerle, managing the project, which is currently focused on the hydrogen FCEV side, means working in the Governor’s Office of Business and Economic Development (GO-Biz) and collaborating with local governments to facilitate the permitting process for stations while ensuring that they are comfortable with the process. He also coordinates a multi-stakeholder group of state and local agencies, industry, and other experts.

The goal is to launch an additional 45 hydrogen fueling stations throughout the state by the end of 2015, with funding through Assembly Bill 8, which provides up to $20 million per year for the stations through 2024.

“By the end of 2015, you will be able to drive an FCEV from San Diego to Lake Tahoe and fuel up in Santa Barbara,” Eckerle reports. “Once we have about a hundred stations, California’s market will be pretty well covered. At that point, we expect private businesses to be able to make the case for unsubsidized stations in key markets.”

Because no one reports to Eckerle directly, he says, “It’s all about convincing people to work with me, so it comes down to relationships.” That’s where the skills and knowledge he acquired as a Bren MESM student come in handy.

“Bren prepared me for so many aspects of my job, but learning to communicate complex information concisely was probably the most important thing,” he says.

He also leans heavily on his Bren economics training and what he learned from his Group Project. “I work with a big team, and you have to play to everybody’s strength,” he says. “The GP was an important experience for working toward a common goal when the result isn’t clear until you get there.”

Eckerle is aware of what’s at stake. “If we get it right, it will change the world,” he says. “That’s really exciting, and I wouldn’t be here without the Bren School background.”

In This Issue

Special Section: Who Is the Bren Student?
PhD or MESM, they’re here to make a difference.

Page 5

Secrets of their Success
Employers love Bren grads. Here, a few of them tell you why.

Page 9

Fueling Zero Emissions
Governor-appointed alumnus Tyson Eckerle helps drive California’s transportation future.

Page 12