Bios

The Biology Department Newsletter
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Editor: Paul Wilson

For back issues and more information about the Department: www.csun.edu/biology

Scholarship for Biology Undergrad with Outside Responsibilities

An endowment has been established by **Mr. Ian Leslie**. Leslie received his second bachelor's in Microbiology from CSUN in '87. He went directly to a successful career at Amgen where he worked on optimizing production of proteins by bacterial cultures, and eventually on shepherding drugs through government regulations. Recently retired, Leslie looks back with approval at the opportunities he received while studying at CSUN, and remembers the financial struggle. Thus, annually a Biology undergrad with a similar biography will be granted a *Leslie Family Scholarship*.

In establishing the endowment, Leslie wrote: "CSUN has many students who work diligently to get their degrees and achieve their career potential in spite of many other obligations such as work or family. Many academically sound students such as this may lack the time, and possibly the savvy, to qualify for awards. Moreover, because they often work full-time, they do not qualify for need-based scholarships. This scholarship is intended to provide recognition and encouragement for such a Biology bachelor's candidate. The candidate must be nominated by a faculty member, have a GPA of 3.0 or better, and demonstrate the maturity, personality and determination to have a successful career in the life sciences. The candidate must be a strong student, but need not be the highest performer in the class. Preference shall be given to a returning student or one who has significant responsibilities in addition to their schooling."

If you think you might qualify, talk with your favorite professor about a possible nomination. If your professor agrees to nominate, go to www.csun.edu/biology/scholarships.htm, and fill out the application, which shall include a written statement that relates the winding road you have taken becoming a Biology student and your future career plans. Applications are due 27 February. The award for 2009/10 shall be $1500.❧

Invite to Spring Break Trip

A trip to the seashore has been designed for *you*. The trip is planned for Friday the 3rd into Sunday the 5th of April. There will be camping and natural history walks.

The trip is sponsored by The Biology Ecology & Evolution Reading Group and the Marine Biology Grad Student Association.

"The idea is to offer a field experience to lowerclassmen." says Chris Bowman-Prideaux, "Since many of the field classes are upper division, we feel it is important to make sure Biology majors understand that biology is more than lectures and labs – to give them a taste of what they can experience if they were to major in Environmental Biology."

The educational activities of the trip will consist of grad students leading walks each for a handful of undergrads. Possible topics of walks include bird and mammal behavior, intertidal zonation, fire ecology, food webs in streams, and plant diversity.

There will also be some down-time to make new friends, roast burgers, and the type of spontaneous entertainment one would expect of such a creative crowd.

To make a reservation or ask questions, email cmb24722@csun. edu❧

Grants Received

The office of Graduate Studies awarded Thesis Support Grants to the following students: **Valentina Korchagina** and **Wilber Excorcia** from Dr. Summers' lab; **Nick Colvard** and **William Goldenheim** from Dr. Edmunds' lab; **Kelly Sakaguchi** and **Jen Paur** from Dr. Gray's lab; **Krystal Jarvis** who works with Drs. Oppenheimer and Carroll.

The University Corporation awarded grants to students **Michael Kaufman** $1200, **Charles Abbott** $1500, and **Valentina Korachagina** $1000.

Drs. Tim Karels and **Mary-Pat Stein** received Probationary Faculty Support Awards.

Dr. MariaElena Zavala announces program grants were awarded to support MARC ($589,000), MBRS RISE ($631,000), and MBRS SCORE Administration ($129,000). Supplemental funds ($48,000) were also awarded to study how students enter research and how they are recruited into research labs. This work will be done in collaboration with Dr. Jack Mills, who will be completing the project. Other supplemental funds ($46,000K) were also awarded to add three more students to the RISE program.

Drs. Pete Edmunds and **Bob Carpenter** received an NSF supplement to their Coral Reef Long Term Research Project to travel to France and Monaco next summer to explore collaborative research on ocean acidification. Several other major external grants have been awarded to Edmunds recently, as explained in the article below on the polyp lab.❧

Polyp Lab Set to Grow in 2009

—Peter Edmunds

People call my lab "The Polyp Lab." We specialize on the physiological ecology of tropical reef corals, made up of polyps. The Polyp Lab is set to grow due to good luck with funding from the National Science Foundation (NSF). We have been working on aspects of polyp

biology on multiple fronts. In recent years the most conspicuous of these have been in Moorea (French Polynesia) and in St. John (US Virgin Islands). These projects have been ongoing for 5 and 22 years, respectively, and their success is fueling an expansion planned for 2009.

The project in Moorea is shared with **Dr. Robert Carpenter** and is part of the NSF Long Term Ecological Research program, which is designed to provide a core of time series analyses from major biomes throughout the U.S. and selected locations overseas. One important aspect of these efforts is to forge international collaborations that can further the mission of the LTER program. To this end, in 2006, we started to develop ties with colleagues at the National Museum of Marine Biology and Aquarium (NMMBA) in Taiwan. The initial steps in this process involved short trips of a couple of weeks duration, but after 18 months of building ties, in 2008 the collaboration led to the signing of a Memorandum of Understanding (MOU) between CSUN and National Dong Hwa University in Haulien, Taiwan (one of the parent universities that supports research at NMMBA). The signing of the MOU was an important step in the collaboration with Taiwan, and it opened the way for us to host Dr. Tung-Yung Fan and four of his students at CSUN last summer. We used this opportunity to learn about each other's research programs, and to host a joint NMMBA-CSUN science workshop in which CSUN students **Hollie Putnam** and **Nick Colvard** presented the results of their research in Taiwan.

So far our collaborations with Taiwan have been supported through modest funds secured through the NSF Office of International Science and Engineering (OISE), and these have been augmented by the personal hospitality of the researchers involved. We used the OISE funds to support the travel to Taiwan of CSUN students **Nick Colvard** and **Maggie Johnson**, with the grander objective of using the funding as seed support to secure more significant funds to expand our efforts in Taiwan. This January we heard from NSF that the next phase of our plans have been supported in the form of full funding for our 3-year project entitled, *The ecophysiological basis of the response of coral larvae and early life history stages to global climate change*.

The project will explore the effects of rising temperature and increasingly acidic oceans on coral larvae. All of the experimental work will take place in Taiwan with 4 months/year spent overseas in each year of the award. This project will create some spectacular opportunities for CSUN students (both graduate and undergraduate) to work abroad, and will also support a postdoctoral scholar who will be based in the Polyp Lab. **Cynthia Ross** is the first student to work on this effort, and this semester she begins a project at CSUN that addresses the effects of acidic conditions on local anemones, which serve as an effective model system for corals. Additionally, we plan to develop outreach activities and hope to forge learning opportunities between K-12 educators in California and schools in southern Taiwan.

The project in St. John is the longest running project in the Polyp Lab, having started in 1987 and still running with annual surveys. Numerous generations of CSUN students have allowed this project to thrive. Some years have been lean, and some funded. Importantly, there is now a 22-year record of changes in shallow coral reefs that is proving invaluable for detecting the effects of global climate change and projecting how further warming might affect these reefs. In December, NSF recognized the importance of this program with 5 years of support through their Long Term Research in Environmental Biology Program. This program is intended to provide modest support for lengthy periods with the objective of supporting decadal-scale analysis of ecologically important habitats. The new funding will support the next phase of this research, and will fund travel, analysis, and graduate research assistantships that will allow the project's goals to be realized while creating unique opportunities for independent study at CSUN. Already we have one new undergraduate, **Darren Brown**, working on the data coming from this project, and more will follow as the project takes off.

A critical component of the recent funding success has been the development of outreach activities with local schools as part of our larger research efforts. Over the last 4 years, we have been working with two teachers at Viewpoint School, **Mark McLaughlin** and **Craig Didden**, to create opportunities for them to work with us in the field. Additionally, we have created a means through which their students can complete independent study projects that exploit the photographic archive created by our fieldwork, and starting last semester, we have been hosting a marine biology club that routinely places CSUN graduate students and faculty in a discussion group in the school. With new support and more opportunities, we should be able to expand these opportunities to exploit our research themes in St. John, Taiwan, and Moorea. This semester, we have started working with a teacher, **Pavel Lieb**, and students at Milken Community High School and already are planning to work with Pavel in the Virgin Islands this summer.

By the end of 2009, the Polyp Lab will be bigger than it has ever been, with 5 graduate students, 1 undergraduate, 2 teachers, a postdoctoral researcher, and a marine technician all investigating coral biology through opportunities created on our campus. It is an exciting time that will bring unique learning opportunities to motivated students and scientists at all levels of investigation – this is what Biology is all about at CSUN!❧

A Guide to Programs of Advanced Studies

—Steve Oppenheimer

I write about 400 letters of recommendation each year and keep track of who gets in to where. I have a sense of what makes the successful applications successful. Here I'll provide tips, some of which are not widely known.

PHARMACY SCHOOL

Hundreds of our students apply to pharmacy school each year but many don't get in. Why? The primary reason is that our students generally do not take the PCAT and apply only to California schools that do not require the PCAT. The California schools are flooded with applications and most students who don't have a GPA>3.5 don't get in. My advice: study hard for the PCAT and take it. Decent scores on this exam will substantially increase chances for

admission nationwide. My guess is that the writing is on the wall, and many of our students will begin taking the PCAT. Be one of the first to do it, and do well on it, so your application will shine. And get some practical experience working in a pharmacy. That helps.

PHYSICIAN'S ASSISTANT, NURSING

Quite a few of our students apply for physician's assistant programs and pay well over $100,000 for this education. Few of our students go into nursing. What a mistake! The opportunities in nursing are fantastic, and a nursing education can cost next to nothing if you get it at a community college. Why be in debt for years, perhaps decades, to pay off loans for a PA program, while nursing may offer many more varied careers and excellent salaries and benefits? The problem once again is that many nursing schools have long waiting lists. You must do well in your science and health related programs.

DENTAL SCHOOL

Over the years, I've found that not only does a master's degree improve chances for admission to dental school, but it helps dentists in their careers. With M.S., D.D.S. in back of your name, this helps your admission to advanced dental programs. It's almost as good as Ph.D., D.D.S. but of course not quite as good. I can't remember a single student of mine who was rejected from dental school as an undergraduate, who was not admitted after doing a fine job in our master's program.

MEDICAL SCHOOL

By now most students realize that unless one gets about a 30 or more on the MCAT, the chances of being admitted to a U.S. medical school are not good. Students need to apply broadly. Many students cannot achieve a 30, so why not consider alternatives? I always rave about St. George's Medical School in the Caribbean. Many of my students graduated from St. George's, and each one appears to be a successful physician in the U.S. Good MCATs help, but St. George's looks at the whole student. A master's degree seems to help if the GPA is not stellar, but why not do it right the first time and study hard? And I am told that many students at St. George's are former engineers, lawyers, dentists, etc. I understand that St. George's boasts an excellent pass rate on the medical boards.

Ph.D. PROGRAMS

Ph.D. programs also look at the whole person and do not just look at test scores. High GRE scores do help immensely, and I suggest intensive study for this exam if you are interested in a career needing a Ph.D. Great letters of recommendation and research products such as publications and research presentations at national conferences help bigtime. Students whose undergraduate GPA is weak and/or who have not done extensive research as an undergraduate should first get a master's before attempting a Ph.D. The master's will give you research experience and your graduate performance could help mitigate a weak undergraduate record. Also, TAing will help with the subject GRE. Many students stop at the master's and enter careers in community college teaching, high school teaching, academic research technician, or industry. The master's degree is very versatile and opens the door to many exciting opportunities.❧

Farewell Genetic Counselors

Since 1994, the Biology Department has been deeply involved in an interdisciplinary master's program, the Genetic Counseling Program (GCP). We are sorry to announce that, due to budgetary concerns, the GCP will be closing at the end of the academic year.

Interdisciplinary programs are unusual at the University. The GCP has been a collaboration between three departments: Biology, Educational Psychology & Counseling, and Special Education. Others who have helped teach and apprentice students have been numerous clinical physicians and genetic counselors from the greater Los Angeles area.

Several courses designed to meet the needs of Genetic Counseling students have been popular among Biology majors as well: Medical Genetics, Molecular Diagnostics, Human Biochemical Genetics, and Seminar in Medical Genetics. Although the GCP will no longer exist, some of the courses will continue to be offered for Biology majors. This may serve students who plan a professional career in the health sciences.

Students have benefited from hearing lectures given by local clinicians, and also by distinguished visiting speakers at annual conferences given by the GCP. These have included conferences on cancer risk assessment, embryology and fetal pathology, lysosomal storage diseases, and muscular dystrophy. Prominent members of the genetics community who have been brought to CSUN to enhance the conferences include genetic counselors June Peters and Dawn Hadley (both from the NIH), Dr. Seymore Kessler, Dr. Jon Weil, and Dr. Sy Packman. Students in the GCP also conducted a great deal of outreach to local high schools and community colleges.

The program produced many genetic counselors who were usually employed by clinics within three months after graduation. The most recent time GCP graduates took the board exams, 100% of those sitting for the first time passed the tests. The board exams are needed to become a Certified Genetic Counselor.

We wish all those who have been involved in the GCP the best of futures.❧

Salt Spray and Smores

—Nanak Chugh

On the last Friday of September, two vans set out in the afternoon sun from CSUN. They were headed for the Kenneth S. Norris Rancho Marino Reserve located in central California near Cambria, which is north of San Luis Obispo and just south of San Simeon. The 250-mile journey along route 101 and Pacific Coast Highway took about 4.5 hours. The excursion was planned as a component of the Marine Biology class to expose students to the various fauna and flora that are found in the costal regions of central California.

Upon arriving at the marine reserve, we just took in the beauty of the view. The reserve is about 500 acres, ranging from extensive rocky shoreline, to massive near-shore kelp beds, costal grasslands, and a forest covered with pine and oak trees. We set up our tents on the cliff overlooking the ocean. That night we all went out for dinner and came home to

a warm campfire, over which we enjoyed making smores.

The next day, our professor (Dr. Shannon Lee) and graduate assistant (Maggie Johnson) prepared a delicious breakfast for us. The first place we visited after breakfast was Elephant Seal Beach. Here we could see hundreds of elephant seals just lying out on the sand and sleeping. It was amazing to see 10-16 foot animals, weighing anywhere from 1500-5300 pounds, resting so peacefully and so close to us.

Later, we conducted a survey of the intertidal zone. Standing in bone-chilling water, observing the different animals and plants was a real thrill! We saw sea stars, sea anemones, octopuses, mussels, kelp, sea grasses, barnacles, limpets, crabs, snails, and polychaete worms. That night we relaxed by watching *Finding Nemo* and roasting marshmallows over the warm and comforting fire.

The next morning, we had a beautiful hike into the pine and oak trees of the mixed evergreen forest. Upon getting ready to leave, we said goodbye to the beautiful scenery and left the reserve. Upon reaching home, we were left with a feeling of nostalgia for the environment we had just seen but also a sense of happiness for the friendships created along the way.

Field experiences are a crucial aspect of learning; actually being able to see, touch, hear, feel, and in some cases even taste the environment leads to education that can't be obtained from books. Besides providing the opportunity to travel to new and exciting places, field classes help students gain an appreciation of conducting research and having fun in the process. From the first time port-a-potty user to the experienced camper, everybody can enjoy the field experience and take away something new and meaningful each time.❧

Want to help revise a book?

Students who enroll in BIOL 285 BIOLOGY OF CANCER *plus* BIOL 499 INDEPENDENT STUDIES may elect to help revise Dr. Steve Oppenheimer's cancer text. The independent studies will involve studying recent advances, winnowing through references that may merit discussing, and suggesting changes. Those who do a good job will be acknowledged in the credits, and you'll learn about how books are kept up to date.❧

Featured in Texts

Dr. Tim Karels' research on ground squirrel population dynamics is now included in current editions of two prominent textbooks—*Ecology: From Individuals to Ecosystems* by Begon, Townsend and Harper; and an online supplement to Cain, Bowman, and Hacker's *Ecology*.

Dr. Robert Espinosa's research is featured in the *Herpetology* text by Vitt and Caldwell. The curious case of herbivorous liolaemid lizards being small bodied and living in cold climates is features, as is work on aggregation behavior in banded geckos.❧

New Chair, Associate Chair

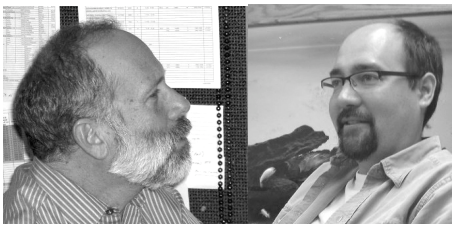
The faculty in Biology voted to recommend to the university administration that **Dr. Randy Cohen** be appointed chair of Biology. Cohen has been associate chair, graduate coordinator, and served on numerous committees that have shaped the department as we currently know it.

Cohen worked his way up through the ranks, starting as a part-timer two decades ago. Before that he had a post-doc at UCLA. He received his Ph.D. from University of Illinois. His M.S. was from CSUN. His bachelor's from USC. Cohen has studied everything from marine biology, to the physiological ecology of diet specialization, to hard-core neurophysiology.

His teaching has been equally varied, including general education courses, Principles of Biology II, Cell Biology, Human Physiology, Animal Physiology, and Neurophysiology.

In recent years, the Cohen lab has maintained two research programs: one on diet balancing in cockroaches, and one on neurological disease in rats. Cohen has been one of the more productive authors on the faculty, and has always had a healthy number of students working in his lab.

Cohen plans on continuing to teach a class here and there and on continuing to



Drs. Randy Cohen (left) and Paul Wilson (right).

work with research students. To allow for such intellectual work, **Dr. Paul Wilson** will serve as associate chair, available in the office when Cohen is away from the chair's desk.❧

New Publications

Dr. Jim Hogue and C. P. Hawkins have a paper in *Pan-Pacific Entomologist*, "Notes on the distribution of the mayfly *Caudatella edmundsi*".

Dr. Mary-Pat Stein and graduate student **Kavitha Thyagarajan** have published an article on Rab35 in *UCSD-Nature Signaling Gateway Molecule Pages*.

Dr. Robert Espinoza and two of his Argentine colleagues have a paper in *Herpetologica* describing two new species of *Liolaemus* lizards from northwestern Argentina.

Tarja Sagar (M.S. '07) and **Dr. Paul Wilson** have a new paper in *The Bryologist*, "Niches of common bryophytes in a semi-arid landscape".

Dr. Tim Karels and colleagues F. S. Dobson, H. S. Trevino and A. L. Skibiel have an article in the *Journal of Biogeography,* "Testing causal structure in the biogeography of avian extinctions on oceanic islands".

Dr. Dave Gray and colleagues have a paper in *the Annals of the Entomological Society of America* on "The Jamaican field cricket and two new sister species."

Four new publications are out from **Dr. Steve Dudgeon's** group: (1) Dudgeon, **K. M. Benes**, **S. A. Krueger**, **Dr. J. E. Kübler**, **P. Mroz**, and **C. T. Slaughter**, "On the use of experimental diets for physiological studies of hydrozoans" in *Journal of the Marine Biological Association*; (2) **R. Kordas**, and Dudgeon, "Modeling variation in interaction strength between barnacles and fucoids" in *Oecologia*; (3) P. S. Petraitis, J. A. D. Fisher and Dudgeon,

"Rocky Intertidal Zone" in *Encyclopedia of Ecology*; (4) **C. P. terHorst** and Dudgeon, "Beyond the patch: Disturbance affects species abundances in the surrounding community" in *Journal of Experimental Marine Biology and Ecology*.

Dr. Michael Summers contributed to a book chapter on cyanobacteria in *Sleeping Beauties–Dormancy and Resistance in Harsh Environments*.❧

In the Community

Dr. Jim Hogue gave a talk to the Topanga Canyon Docents, "Insects of the Santa Monica Mountains," and he gave a talk to the Theodore Payne Foundation, "Insects in Native Plant Gardens."

Dr. Polly Schiffman has been invited by the Natural History Museum of Los Angeles County to be a consultant for their development of a new permanent exhibit about the environmental history of Los Angeles to open in 2012.

Dr. Steve Oppenheimer is editor of the *New Journal of Student Research Abstracts*, published by The Los Angeles World Airports–Van Nuys. The 2008 volume contains contributions from 528 K-12 students. The abstracts are reviewed by the two associate editors. Poor abstracts are rejected and many are revised before acceptance.

Dr. Janet Kübler participated in the teach-in on climate change held on February 5th at the Student Union. She was on a panel discussing actions to combat climate change impacts, and she gave a presentation on biomimetic solutions to climate change.

Dr. Sean Murray is collaborating with teachers Pavel Lieb (Milken Community High School, L.A) and James Darmo (Assyrian American Christian School, Tarzana) to bring his research on the bacterial cell cycle into local high schools.

Dr. Cindy Malone was the keynote speaker at Arleta High School Science, Math, and Related Technologies (SMaRT) Symposium. Her talk was on "Gene regulation and cancer therapies."❧

Speaking Elsewhere

Dr. MariaElena Zavala presented a talk, "Money, Money, Whose Got the Money?" at the National Research Council's Ford Fellowship Conference in Washington, D.C.

Dr. Paul Wilson gave a presentation at San Diego State University on "Shifts between pollination syndromes."

Graduate student **Danny Green** presented his research at the University of Puerto Rico.

Dr. Pete Edmunds presented a seminar at the University of Hawaii on coral reefs.

Dr. Robert Espinoza gave talks at CSU Los Angeles and San Diego State University on his studies of herbivory in South American lizards.

Dr. Sean Murray gave a talk at CSU Los Angeles about research on tumor-targeting *Salmonella*.

Dr. Cindy Malone gave a talk at CSU Los Angeles, "Genetic and Epigenetic Gene Regulation in the Immune System."❧

Reviewing, Judging, Planning

Many professors tithe some of their time to reviewing manuscripts for scientific journals. "I recently passed a self-invented milestone," says **Dr. Paul Wilson**, "I reviewed my 250th manuscript, 5×5 × (5+5), five fingers on a hand."

Dr. Steve Oppenheimer was invited to serve on a National Science Foundation Grant Review Panel on Disease Detection and Screening. Oppenheimer has also been invited to chair a panel of the National Institutes of Health, National Institute of General Medical Sciences for R13 Grant Review.

Dr. Virginia Vandergon has been asked to be involved in the strategic planning of a Masters Teachers Program in Mathematics and Science at CSU Dominguez Hills. This program is being currently sponsored by an NSF grant.❧

San Fernando Valley Science Project, Teacher Initiative Program

Co-directors Drs. **Virginia Vandergon** (Biology) and **Gerry Simila** (Geology) are continuing their work with middle school teachers from four local middle schools (Olive Vista, Pacoima, Sepelveda, and Vista).

The grant is funding the participation of middle school teachers as they build professional learning communities at their schools. The goal is to ensure good content science teaching. Workshops are being held once a month on campus as well as professional development workshops on school sites. Check the websits at www.csun.edu/science/csp for more information or email virginia.vandergon@csun.edu.

Any 4th or 5th grade teacher that wants to participate in professional development workshops that focus on the science standards for elementary school should keep an eye out for flyers announcing the dates and times of summer workshops. ❧

Other K-12 outreach

Dr. Virginia Vandergon has been teaching workshops on CSET prep for pre-service teachers. The next one is scheduled for February 18th.

Ninety 6th grade students and their teachers from Patrick Henry Middle School visited our Botanical Garden with **Brenda Kanno** and our Biological collections with **Dr. Jim Hogue**.

Dr. Pete Edmunds and his students have started their "University–High School Collaborative Program in Marine Biology" with a 4-part seminar series at Viewpoint School. Earlier this month, graduate student **Nick Colvard** presented the seminar "Coral reefs: the color and light environment".

Dr. Sean Murray is collaborating with teachers Diane Fisher (Delphi Academy, lake View Terrace), Liz Gonzaga (Charles Maclay Middle School, Pacoima), and Pavel Lieb (Milken Community High School, L.A.) to bring his research on the bacterial cell cycle into local high schools and middle schools.❧

Moorea Commute

This January **William Goldenheim** and **Caitlin Cameron** from the Edmunds lab spent three weeks in Moorea, French Polynesia, doing field work for their respective thesis research projects. In addition, they teamed up to do some monitoring and maintenance of research projects for Dr. Edmunds.

Tasks included collection of settlement tiles to monitor coral

recruitment, replacement of new tiles for the duration of the austral winter, and the setup and monitoring of a mensurative study monitoring larval production of the coral *Pocillopora damicornis*. Though the winds were often strong and the swell too large for safe time underwater, windows of calm were found, and all the research was completed with some time to spare.

Goldenheim collected new data on the photophysiological response of the coral *Porites irregularis* to change in water flow and temperature, with the hope of completion of a thesis chapter. Cameron had a great time on her first foray to the South Pacific, learning the ropes of the Richard B. Gump Research Station, the complex lagoon boat channels, the relentless mosquitoes, and collected some preliminary data that will strengthen her proposal and allow her to hit the ground running on future trips.

Goldenheim and Cameron, along with grad students Daniel Green and Nicholas Colvard, technician Vinny Moriarty, undergraduate Darren Brown, and local high school teacher Craig Didden will be heading back to Moorea for six weeks at the end of March.❧

Grad Courses F09

Dr. Peter Edmunds shall teach a seminar on *Physiological basis of organismic response to climate change* on Monday nights. Also on Monday nights, Dr. Paul Tomasek will teach a seminar on *Insect-microbe symbiosis*. On Wednesday nights, Dr. Dave Gray will lead a seminar on *Speciation*. There will be two seminars in cell biology, one offered by Dr. Lisa Banner on _____ _____ _____ of _____, and one by our new faculty member Dr. Ernie Kwok on Friday mornings on *Organelle biogenesis: division and protein targeting*. Biometry will be taught by Dr. Steve Dudgeon on Tuesday and Thursday evenings.❧

Catalina Journal

—Sammy Davis

Imagine waking up every day and already being at school, no commuting, just a quick walk to the dock for a morning snorkel. Imagine spending most of your school days in the ocean or lab. Perhaps more significantly, imagine waking up every day to the sight of the ocean! As a student in the Marine Biology Semester, I was fortunate to have these exact experiences, while benefiting from the expertise of CSUN faculty and graduate assistants.

As a recent graduate from UC Santa Barbara, I had dabbled in many aspects of marine science, including ecology, physical oceanography, and fisheries. However, most of my classes were theory-based – heavy on the books, light on the practice. The Catalina Semester promised intensive hands-on work in marine ecosystems in southern California. I looked forward to augmenting theory with field-smarts, and also to spending an entire semester on the Island.

During the MARINE BIOLOGY course with Dr. Steve Dudgeon, we learned about ecological processes driving marine ecosystems. One of my most memorable experiences during the class was our trip on the *R/V Yellowfin* to sample water chemistry and taxon diversity at different depths in the Southern California Channel. We collected a diverse assortment of fishes and invertebrates, including brachiopods little changed since the Paleozoic. From a midwater trawl, we were able to study (and eat) organisms such as squid, hatchetfish, and ctenophores from 800 meters below the surface. Have you ever eaten a ctenophore? I recommend it. It's a bit like eating a salty, living grape.

After Dudgeon, we moved on to MARINE PHYCOLOGY with Dr. Robert Carpenter. What a challenge! Most of us were inexperienced with algae (which are not plants, though they do photosynthesize), and we had to put in quite a lot of effort. We spent hours in the lab studying taxonomy, life histories, and techniques for measuring physiological rates, using samples that we collected ourselves in the field. Dr. Carpenter was excellent and always took the time to unravel difficult material.

The third course in the series was ECOLOGY OF MARINE FISHES with Dr. Mark Steele. To the extent that Phycology was lab based, Steele's class was the exact opposite. Starting on the first day and continuing through the final, nearly half of each day was spent snorkeling or diving, sampling different sites around the island. Even our first test took place in the water, requiring us to identify and record the species, family and order of common local fishes. As a class, we used our own field data to examine the distribution and abundance of species in different habitats and across different depths at the sampled locations.

Throughout the semester we used the skills and concepts from each class to conduct independent research projects. With the guidance of faculty and graduate assistants, each student was responsible for the design, implementation, and analysis of a research project. This work culminated in a research symposium where each student presented his or her individual project. The opportunity to conduct my own research came with a little thrill, also it was frustrating at times, and it definitely strengthened my resolve to attend graduate school.

On Catalina, the days were intense, but the chance to study outside of a textbook was meaty and exciting.❧

Studies with Dudgeon

Former grad student **Casey terHorst** is a coauthor on a paper in *The American Naturalist* on how recent competition with now-absent species can shape community assemblages, a topic that bears the stamp of CSUN thinking. Former grad student **Stacy Krueger** has begun her doctoral program at the Station Biologique Marine in Roscoff, France. Her dissertation will examine whether genetic variation for resistance to infection by endophytic algae exists in the commercially important red seaweed, *Chondrus crispus*, and its demographic consequences.

Maria Vasquez is completing her work studying the effects of hypoxia and seawater viscosity on morphological development in colonial hydrozoans. **Carly Ryan** has completed study of the response of colony form to selection by intraspecific competition in populations of colonial hydrozoans. **Rebekah Rudy** has initiated her thesis research to develop microsatellite markers to distinguish life cycle variants of the red seaweed, *Mastocarpus papillatus*. **PA Rudy** has begun studies to determine the ploidy of life cycle stages of both the typical sexual, and variant asexual, life cycles of *M. papillatus*, which appear to differ in all species in the genus.❧

New Science Building

Despite the state stopping payment on building projects, construction of Chaparral Hall (CR) is still underway as of the moment of publication.

The building had progressed greatly before state bond projects were frozen, and it would have cost much more to stop construction and then re-start at a later date. Also, rescheduling fall classes without CR would be a reverse-domino choreography.

The University administration at all levels up to the Chancellor has worked hard to fend off a work stoppage.

It may yet be possible to take classes in CR in the fall.❧

Conference Presentations

Students from our department attended the Southern California American Society for Microbiology meeting in November:

• **Ruby Carrillo** in the Summers lab presented the winning undergraduate poster at the conference and received $1800 travel award to the next ASM meeting in Philadelphia in May.

• **Narine Arabian** in the Baresi lab presented the winning master's division poster and also received an $1800 travel award.

• Undergraduate students from the Murray lab **Anthony Daulo**, **Anabel Herrera**, and **Yannet Perez** presented a research poster.

MARC and MBRS students attended the Society for Advancement of Chicanos and Native Americans annual conference in Salt Lake City. **Dr. MariaElena Zavala** guided the "Plant Biology/ Agriculture Conversations with Scientists" session. **Vanessa Powell**, an undergrad in the RISE program working in the Vandergon lab, presented her work as a poster entitled "Evolution of anthocyanin synthase in Hawaiian silversword alliance"

Undergrad **Oscar Nnoli** in the Medh lab won an award for his presentation at the Annual Biomedical Research Conference for Minority Students held in Orlando, Florida

The Cohen lab presented four posters at the meeting of the Society for Neuroscience:

• "Magnetic resonance imaging reveals increased T2 values and decreased tissue volumes consistent with progressive neurodegeneration in the *spastic* Han-Wistar rat" by graduate student **Reem Agel**.

• "The pharmacological role of mGluR5 receptors in mediating neurodegeneration in the cerebellum of the *spastic* Han Wistar rat" by grads **April Ochoa**, **Sanda Oo**, **Charles Abbott**, and **Michael Kaufman**.

• "Does exercise ameliorate neurodegeneration in the *spastic* Han-Wistar rat?" by undergrads **Toni Uhlendorf**, **Jinah Lee**, grad **Brooke Van Kummer**, and Kinesiology Professor Dr. Ben Yaspelkis.

• "Regulation of feeding behavior in cockroach *Rhyparobia maderae* nymphs by the neurotransmitter dopamine" by grad **Jaclyn Waier**, undergrad **LaFrance Daniels**, and Dr. Maria Elena de Bellard.

Grad student **Taylor Anderson-McGill** presented a poster, "Effects of seed cache manipulations on population dynamics of a desert rodent, Merriam's kangaroo rat" at the 1st Biennial California Desert Research Symposium.

Many presentations were given by Biology students and faculty at the CSUPERB meetings. We have authors titles for three of them:

• **Ekaterina Kovacheva**, "Evolution of the anthocyanidin synthase gene in tarweeds and Hawaiian silverswords".

• **Travis Morford**, **A. Lindgren**, **D.R. Wisidagama**, **D. Martinez**, **Drs. M.E. de Bellard**, and **C.S. Malone**, "Epigenetic control of *Slit2* silencing in migratory neural crest cells."

• **Roonalika Wisidagama**, **T.A. Morford**, and **Dr. C.S. Malone**. "Genetic and epigenetic control of *YME1* expression."

Other presentations were given by **Jessica Beach**, **Carri Musser**, **Yasuko Hirakawa**, **Mia Wibowo**, **Oscar Nnoli**, **Adorina Moshava**, **Arbella Moshava**, **Anabel Herrera**, **Yannet Perez**, and **Sofia Radillo**.

Seventeen marine biology graduate students and professors traveled to Vancouver, British Columbia, to the annual meeting of the Western Society of Naturalists. Eight students and three profs gave presentations:

• Representing the fish lab were graduate students **Dawn Bailey**, "Effects of marine protected areas on community structure of kelp forest fishes", and **Jenna Krug**, "A test for correlated recruitment of predator and prey species of kelp forest fishes." **Dr. Larry Allen's** talk was entitled, "Fisheries independent assessment of a returning fishery? An update on the abundance of juvenile white seabass in the shallow nearshore waters of the Northern portion of the Southern California Bight, 1995-2008."

• **Christina Vasquez**, of Steve Dudgeon's lab, spoke on, "Probing for oxygen: Investigating how the availability of dissolved oxygen may lead to morphological plasticity in the hydrozoan *Hydractinia symbiolongicarpis*."

• **Dr. Peter Edmunds** spoke on, "The effect of simulated fish predation on juvenile massive *Porites* exposed to contrasting regimes of water flow and temperature." Also from the Polyp Lab were presentations by **William Goldenheim**, "Variability in the effects of temperature and flow on the growth and photophysiology of a reef building coral in Moorea", **Danny Green**, "Substratum effects on the early post-settlement success of juvenile corals on shallow fringing reefs in St. John, US Virgin Islands", and **Nick Colvard**, "Decadal-scale changes in the abundance of benthic reef invertebrates on the south coast of St. John".

• **Dr. Robert Carpenter's** talk was, "Scale-dependent effects of water flow on coral reef primary productions". His student **Abigail Poray** presented, "Spatial escape at a physiological cost: Consequences for coral reef macroalgae inhabiting refugia from herbivores", and first-year graduate student **Stella Swanson** had a poster on, "Species-specific effects of echinoids on coral reef community structure".

The students are all members of the Marine Biology Graduate Student Association, and appreciate the funding and support of the Biology Department, Graduate Studies, Research and International Program and Associated Students.❧

Oppenheimer Alums

Students who did research with Dr. Steve Oppenheimer, as undergrads or grads, are doing great in their respective

Ph.D. programs. **Ziba Razinia** completed her coursework at Yale with honors and is now doing her thesis research on filamin. **Maribel Alvarez** (UC Irvine), **Jennifer Nnoli** (Sloan-Kettering Cancer Center), **Karina Petrossian** (City of Hope) and **Eileen Heinrich** (UCLA) are making fine progress towards their Ph.D. All of these students have been authors on papers emanating from the Oppenheimer lab.❧

Darwin Celebrated

Biology faculty were heavily involved in Darwin Week (9-13 February).

The master was born 200 years ago, and got around to publishing his "abstract" of the theory of natural selection 150 years ago. His many contributions continue to affect disciplines all over campus, but of course they are central in Biology.

The celebrations included a film fest, a dance performance, a theater performance, a panel discussion of religion after Chuck, Darwinian K-12 activities, a symposium of evolutionary research done at CSUN, and talks by five guest speakers.

Enter Contest Now

Still accepting contestants, there is an essay and creative works contest for undergraduate students. The topic is "The Legacy of Charles Darwin." The contest is sponsored by CSUN's Writing and Reading Across Disciplines initiative and the College of Science and Mathematics. Monetary prizes will be awarded to the students who submit the best entries in several categories. Contest details are available at the Darwin Week website: http://www.csun.edu/darwin.

Displays will be in the library into March. They include specimens assembled by **Dr. Jim Hogue**, and posters by grad students **Wyndee Haley**, and **Lena Coleman**.

Dr. Polly Schiffman organized the week's celebrations.❧

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