

Bios

The Biology Department Newsletter
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Biology Dept., see www.csun.edu/biology.

California State University
Northridge

California State University, Northridge

New Publications by Biology Faculty and Their Students*

Dr. **Robert Espinoza**, J. J. Wiens, and C. R. Tracy have a paper entitled "Recurrent evolution of herbivory in small, cold-climate lizards: Breaking the ecophysiological rules of reptilian herbivory" in *Proceedings of the National Academy of Sciences*. It was featured on the cover.

"Local ecology and geographic ranges of plants in the Bishop Creek watershed of the eastern Sierra Nevada" was published in *Journal of Biogeography*. The work was done by **Sarah Kimball** when she was a Master's student, Dr. **Paul Wilson**, and Jack Crowther, an amateur botanist and retired high school teacher. Wilson is also a coauthor on "Pollination syndromes and floral specialization" recently published in *Annual Review of Ecology, Evolution, and Systematics*.

Dr. **Mary Lee Sparling** had a paper published in the *Journal of the Chinese Chemical Society*, "Echinoderm gametes make PAF: Artificial activation of external PAF bypasses calcium channels regulated by 2APB unlike jelly activation of sperm."

Dr. **Peter Edmunds** has had two papers accepted for publication: the solo-authored "The effect of elevated temperature on the aerobic respiration of coral recruits" to be in *Marine Biology*; and with **R. Gates** (an adjunct Biology faculty member), W. Leggat, O. Hoegh-Guldberg, and student **Laurie Allen-Requa** "The effect of temperature on the size and population density of dinoflagellates in larvae from the reef coral *Porites astreoides*" to be in *Invertebrate*

Zoology.

Dr. **Wendy Birky** is co-author of a paper to be in the *International Journal of Primatology*: "Temporal variation in adult interaction patterns in wild *Macaca cyclopis*," co-authored with Hsiu-hui Su.

Behavioral Ecology has published, "Does courtship behavior contribute to species-level reproductive isolation in field crickets?" by Dr. **David Gray**. *Entomological News* has published "Two new Orthopteran hosts of North American *Polideini*" by J. O'Hara and Gray.

Research Talks and Posters Presented at National Meetings

At the Raptor Research meetings, **Diego Sustaita** won the best-student-paper prize for the talk "An anatomical comparison of the hindlimb and jaw of North American hawks and falcons in relation to prey procurement." He also presented "Winter raptor densities and habitat use in northern Mexico based on roadside surveys" with Dr. **Fritz Hertel** and F. Chavez-Ramirez. At the CALFED science conference, Sustaita and colleagues from California Fish and Game presented "Salt marsh harvest mouse demography and habitat use."

Dr. **Michael Summers** attended the American Society for Microbiology, Southern California Branch, where he gave a talk on the subject "Surviving hard times: The lowdown on cyanobacterial akinetes." He also chaired the session. In addition, Summers attended and served as poster judge at the SACNAS 2004 National Conference at which MARC student **Julieta Aguilar** presented a poster entitled "Screening of cAMP receptor protein regulated genes by quantitative real-time

polymerase chain reaction."

Cal State Northridge had a great showing at the annual meeting of Western Society of Naturalists (WSN). The following were oral presentations (only first authors reported): •**Dr. Larry Allen**, "Documenting the return of a fishery? Abundance of juvenile white seabass off southern California, 1995-2004"; •**Dr. Steve Dudgeon**, "Fertilization rate, life history and hypothesized effects on the ecology of macroalgae and life cycle evolution"; •**Becca Kordas**, "Quantitative analysis of per capita interaction strength between rockweeds and barnacles along a latitudinal gradient"; •**Robin Elahi**, "The effects of age and size on the physiology of scleractinian corals"; •**Jackie Padilla-Gamino**, "Differences in thermal acclimation of *Laurencia* spp. and *Asparagopsis taxiformis* from different biogeographic regions"; and •**Kylla Benes**, "Effects of *Eisenia arborea* on patterns of recruitment and settlement of understory algal species."

Several students also presented posters at the WSN: •**Annaliese Hettinger**, "The role of hydrodynamics in the structure and function of shallow subtidal communities"; •**Kathy Morrow**, "Mediation of competitive interactions between *Corynactis californica* and benthic algae by light and water flow in a kelp forest habitat"; •**Graham Ferrier**, "Influence of variations in algal morphology across flow microhabitats on drag and thallus compaction"; •**Mairead Maheigan**, "The recovery of a dominant grazer: Is the fish community affected?"; •**Stevie Adams**, "A comparison of distribution and abundance patterns of tidepool fishes in the Southern California Bight"; •**Bridgette Nace**, "Reproductive behavior and col-

* Readers will find full citations & often PDFs at www.csun.edu/biology/faculty.

oration of black perch”; •**Jonathan Williams**, “Age and growth of juvenile white seabass including an investigation into the significance of sub-annular rings in sagittal otoliths.” Travel funds for attendance at the meetings were gratefully received from the Department of Biology, College of Science and Mathematics, and the Office of Graduate Studies.

Students from Dr. **Randy Cohen**’s lab presented two posters at the Entomological Society of America meeting: •**Robert Nohavandi**, “Let’s chew the fat: Nutrient choices governed by physiologic and energetic needs”; and •**Brandie Cross**, “Altered hemolymph levels of free amino acids modifies nutrient self-selection in the cockroach, *Rhyarobia mader*.” In addition, Cohen’s lab presented five posters at the Society for Neuroscience meeting: •**April Ochoa**, “The Pharmacological role of mGluR5 receptors in mediating neurodegeneration in the spastic Han Wistar rat”; •**Vernita Davis** and **Dina Antonacci**, “The pharmacological and biochemical effects of 17-B-estradiol neuroprotection in the spastic Han Wistar male rat”; •**Erin Mettlen**, “Phospholipase A2 as an effector of the neuroprotective effects of nicotine in the spastic Han-Wistar rat”; •**Jorge Iniguez** and **April Ochoa**, “Chronic cannabinoid neuroprotection in the spastic Han-Wistar rat: Mediated by altered CB1 receptor expression?”; •**Banessa Maldonado**, “Neuroprotective effects of Riluzole on the spastic Han-Wistar rat.”

Two students in Dr. **Lisa Banner**’s lab presented their work at national meetings. At the American Society for Cell Biology **Christopher (Chip) Carey** gave a paper, “The expression of the cytokine receptor gp130 is altered in diabetic wounds.” At the same meeting, **Omar Escamilla** presented a poster on “Analysis of leukemia inhibitory factor in brains of diabetic mice.” Omar also gave presentations on “Altered expression of interleukin (IL)-6 and tumor necrosis factor alpha (TNF-a) in brains of diabetic mice” at the Society for neuroscience and at the Society for the

Advancement to Chicanos and Native Americans in Science. His presentation at the last venue, where he competed with Ph.D. students, received the “outstanding graduate oral presentation award.”

A large group from the Biology Department went to the 2005 meeting of Society for Comparative and Integrative Biology. At the meeting the following talks were given (only first authors are listed):

•**Kammy Fallahpour**, “Love sees no color: Indiscriminate courtship in male leopard lizards”; •**Diana Andres**, “Can the cost of diet switching explain the evolution of herbivory in reptiles?”; •**Diego Sustaita**, “Myology and biomechanics of the hindlimb and jaw of hawks and falcons in relation to bite and grip force”; •**Michael Brewer**, “Wing shape as correlated with flight behavior in pelecaniform seabirds”; •**Dr. Paul Wilson**, “Pollen presentation by bee- and bird-adapted flowers.” In addition, a poster was given by •**Jennifer Lancaster**, “What good is grouping for geckos? Testing the benefits of aggregation in *Coleonyx variegatus*.” Jennifer’s poster won Best Poster prize in the Animal Behavior division.

Students of Dr. **Rheem Medh** presented with her three posters at the CSUPERB meetings: •**S. J. Priceman, J. D Kirzner**, and **D. Morris**, “Role of Intracellular calcium in glucocorticoid-evoked lymphoid cell apoptosis”; •**P. M. Lopez** and **M. A. Shiwalkar**, “Role of protein kinase C isoforms in hydrogen peroxide-evoked apoptosis of human keratinocytes”; •**M. Bagherabadi** was a coauthor on “Oxysterol- and oxidized LDL-induced monocyte/macrophage apoptosis and BTG1 expression.”

Biology is Well Represented at Student Research Symposium

Biology students put on an excellent show at Cal State Northridge’s annual student research and creative works symposium where talks were given by •**Christopher Carey** claiming “The expression of the cytokine receptor gp130 is altered in diabetic wounds”; •**Pavel**

Lieb on “Mutational analysis of EBP, gene causing X-linked dominant form of Chondrodysplasia Punctata Type II, patients revealed novel mutations”; •**Joanne Moriarty** on “Survival and dispersal of bobcat kittens in a fragmented urban environment”; •**Jolene Pucci** who won Second Place in this session and spoke on “Effects of competition from invasive plants on the endangered *Pentachaeta lyonii*”; •**Robin Elahi** on “The effects of age and size on the physiology of a scleractinian coral”; •**Ray Hernandez** saying “It takes guts to go green: The evolution of herbivory in reptiles”; •**Kylla Benes** on “Effects of *Eisenia arborea* on patterns of recruitment and settlement of understory algal species”; and •**Amanda Izzo** who won First Place in this session and spoke on “Investigating the lack of hybrids in the sympatric zone of *Gryllus rubens* and *G. texensis*.”

Also at the meeting posters of their research were given by: •**Kamelia Fallahpour** who warned “Don’t judge a lizard by its color: Mate selection in male leopard lizards”; •**Mark Harris** and **Gabriela Meyer** on “Loss of accD gene from monocots”; •**Eileen Heinrich** and **Lily Anne Welty** on “Toxicity of lectins on human colon cell lines”; •**Jorge Iniguez** and **April Ochoa** on “Possible cannabinoid neuroprotection in the spastic Han-Wistar rat mediated by altered CB1 receptor expression”; •**Jennifer Lancaster** who won First Place among posters for “Why do banded geckos group? Testing the benefits of aggregation in *Coleonyx variegatus*”; •**Katheleen Marrow** who won Third Place among posters for data showing that “Competitive interactions between *Corynactis californica* and benthic algae are mediated by light and water flow in a kelp forest habitat”; •**Robert Nohavandi** on “Let’s chew the fat: Nutrient choices governed by physiologic and energetic needs”; •**Sally Smith** who has been “Searching for a key locus in the adaptive radiation of *Dubautia linearis*, Hawaiian Silversword, and putative founder species”; and •**Jonathan P. Williams** on “Age and growth of juvenile

white seabass including an investigation into the significance of subannular ring formation.”

CSUN Hosts Fetal Conference

On January 28th and 29th, Cal State University and the Genetic Counseling Program hosted an embryology and fetal pathology conference. In attendance were Biology students from Northridge, genetic counseling students from this University and from UC Irvine, medical fellows from UCLA and Cedars-Sinai, faculty from all four institutions, and genetic counselors (including many Northridge alumni) from the community.

According to Dr. Aida Metzenberg, Director of the Genetic Counseling Program, “More than 70 people attended. Of particular interest were the speakers, Dr. Thomas Sadler and Dr. John Graham, who were excellent.”

The conference was supported by grants from the Cal State Northridge office of Research and Sponsored Projects (a Distinguished Speakers award), by grants from UCI and the UCLA intercampus Medical Genetics Training Program, and by contributions from attendees. Says Metzenberg, “The event was a resounding success, and we plan to repeat it.”

Evolution and Cancer Reading Groups Welcome Participants

The **Biology Ecology & Evolution Reading Group**, better known as the BEER club, meets on Wednesdays at 11:30 in Sc 1322. Some weeks papers are read; other weeks people present proposals. This year graduate students **Mandy Izzo** and **Raymond Hernandez** were elected co-presidents of the group, and graduate student **Diego Sustaita** was elected treasurer. Students interested in joining the group or who would just like to know what’s going on should contact Ray at rah56284@csun.edu.

A **Cancer Research and Journal Club** has just been created for students interested in learning more about cancer and jobs related to it. At its meetings the group

plans to discuss current research and journal articles, and to learn about trends and treatments in cancer and oncogenesis. Guest speakers prominent in the cancer scene are also planned.

Eileen Heinrich and **Lily Anne Welty** are the club’s co-chairs. **Karina Garcia** is the secretary. Graduate students or students planning to pursue graduate study in oncology are encouraged to attend the group’s monthly meetings.

The next meeting is scheduled for Friday, March 11, at 11:30 in Sc 2102. Brown bag lunches are encouraged. For more information, contact Lily Anne at lily.welty@csun.edu.

Genetic Counseling Program Has First Fund Raiser

On November 7, the Genetic Counseling Program held its first fund raiser, an afternoon high tea at the Gilded Rose. According to Dr. **Aida Metzenberg**, the event raised about \$1000, funds that will be used to upgrade student computers and for student travel.

In addition to Metzenberg and many invited guests, the event was attended by Drs. **Nancy Bishop** and **Joyce Maxwell**. Maxwell was one of the founders of the program and is still on the advisory board.

Pre-dental News

According to Dr. **Mary Corcoran**, Pre-dental Advisor, “The Pre-Dental Club is organizing for spring. Some off-campus speakers are expected to meet with the group to discuss aspects of dentistry and dental schools.” Students interested in joining the club are encouraged to contact club president, **Hesam Hekmatjou**, at voroopak@juno.com. Prospective dental students will find the club a source not only of comradery but of information about their chosen career since the club commonly invites speakers about the dental profession.

Successful dental school applicants must have many volunteer hours in the dental profession. Says Corcoran, “The USC Dental School operates a mobil clinic

that provides dental services to the poorer areas of Los Angeles and other parts of California and right now they are seeking students to assist the dentists.” The Secretary of the Dental Club, **Elena Katus**, is in charge of organizing our part in the Clinic. Elena can be reached at elenaemk@yahoo.com.

“What many students don’t realize,” says Corcoran, “is that preparation for dental school needs to start early in the college program.” Two years of chemistry with labs are required, and frequently CHEM 105 is needed before starting the required courses. Moreover, “The DAT has a section on organic chemistry so completing the year of O’Chem, or at a minimum the first semester of O’Chem, is essential before taking this exam.” Because the DAT is typically taken in the spring of the Junior year, a student’s first year of chemistry needs to be completed while a freshman or sophomore.

Students wishing more information about dental school requirements are encouraged to contact Corcoran. She holds office hours every Wednesday in Sc 3216B.

Listen to the Evolution Report

Students complain that they don’t have time to study more than they are already studying.

“Yes,” says Dr. **Paul Wilson**, “but there’s a lot of ‘unused’ bits of time just lying around, time when people are commuting, time at the gym, time relaxing before bed. This time is not high-quality—it can’t be used for studying—but it can be used for ‘mental diffusion’.”

Acting on this idea, Wilson has produced an audio program that he claims takes no more effort to listen to than National Public Radio and that he hopes will make students grasp evolutionary ideas more easily when those ideas are presented formally in BIOL 322.

The evolutionary episodes, each of which explores a topic in evolutionary biology, are available for downloading as .mp3 files from www.csun.edu/~hcbio028

—con’t p. 5, Evolution—

The Students' Forum

José Monzón is an undergraduate working in Dr. Robert Espinoza's laboratory. In the second article Dr. Shannon Lee presents, anonymously, comments made by students in her Life in the Sea class. The editors encourage all students who have had interesting professional experiences to consider writing articles for future issues of Bios.

First Conference

—José Monzón

As a graduating senior, I've been debating whether I should apply to the graduate program. I like animal behavior and marine biology. Unsure of my options, I enrolled in an independent studies course with Dr. Espinoza who I knew had students working on behavior in lizards.

I worked on the vertebrate collections, learning pickling procedures, how to catalog specimens into the collection, and how to prepare skeletons. I'd like to think I made a good impression. Anyway, Dr. Espinoza found money for me and a couple of other students to go to the 2005 meeting of the Society for Integrative and Comparative Biology, held this January in San Diego.

The SICB meeting was pretty amazing. There were hundreds of biologists, working on many corners of this diverse world of biology—physiology, morphology, ecology, and phylogenetics. I tried especially to go to talks on the behavior of birds, mammals, reptiles, and amphibians. I found many of the talks fascinating, but also many were hard to understand. The rapid-fire charts and graphs, statistics, and analyses were confusing for a novice such as myself. I wish I had taken Design and Analysis of Experiments.

Among all the brain-straining, over-achieving conversations, I noticed, lies a network of friendship and good-times, which in the end I found as enticing as the science itself. This experience cemented my desire to do some research of my own and to go on to grad school. I got a clearer

idea of my next two academic years. I would like to go to some future SICB meeting with some data in hand, and I'd like to thank Dr. Espinoza and the other professors who sponsored my attendance at my first meeting.

It Ain't Mud if it's not Muddy

—Dr. Shannon Lee

We talk about the importance of active learning, but we sometimes lose sight of the impact of hands-on learning. Last semester I taught Life in the Sea (BIOL 325, for non-majors), and had the students keep field notebooks. Below I present a series of quotes—grammatical errors and all—from those journals that underscore the effect of the field trips on the students' view of the natural world:

"Thank you for the opportunity to get out of the classroom and see the stuff we are learning about in person. It was great to actually get to touch the rocks, mussels, sea stars, etc. I learned a lot more in a couple of hours at the tide pools than several hours studying the material at home."

"I got to see many fish! Reading about their characteristics is one thing, yet seeing them and observing them first-hand is another. I would never have thought one could learn so much from mud that we gathered in the harbor."

"The gulls were fighting for food! The sanderling and curlews were together by the wet sand and pecked for food. These two birds didn't seem to compete for food at all."

"Along with all of the organisms we found in the intertidal zone, we found sea anemones and sea slugs! These slugs were shaped like corn dogs, were a yellowish-brown color and had two 'ear' shaped extremities on their head! One of us picked one up out of the water and got inked!"

"I cannot count how many times I have walked on the beach and was so clueless as to what was around me. Normally, I am extremely inquisitive and interested in my

surroundings, but I guess since I never knew what organisms were there, I never looked for them. This trip has definitely opened my eyes!"

"After this trip, I feel privileged to have seen such wonderful things. This was something I wish I had seen when I was younger! The ocean is full of things that make anything seem possible."

"On a rock that was pulled up, there was a clam living in it, and the rock had many holes which I learned were from clams that burrow themselves and become stuck because they grow!"

"When I arrived at the docks at 6:45 am I thought to myself, people actually get up this early, on a Saturday? And as we moved off from the pier I saw that the harbor was alive with folks working large machinery, driving ships and boats of all sizes. This is a world I know nothing about."

Bridges to the Doctorate Program Seeks Student Applicants

The Bridges to the Doctorate program is designed to aid minority students belonging to groups underrepresented in the sciences to earn a Master's degree at CSUN, and then gain admission to a Ph.D. program in one of the biomedical sciences. Students accepted into the program receive extra training, mentoring, and also receive financial support while working on their Master's degree.

Dr. **Michael Summers** oversees the program. More information can be obtained from the C.A.S.A. Office in Sc 2128 or at 677-4981. Much information is also available on the program's webpage, www.csun.edu/~ree77914/bridges.htm.

NMFRP Needs Field Helpers

The Nearshore Marine Fish Research Program has contracts that require student help with extensive field work and provide invaluable research experience for undergraduate students. Students interested in working in the field on professional projects should contact Dr. **Larry Allen** (677-3340) or **Josh Lindsay** (677-4037) in the fish lab (Sc 4112).

—**Evolution, con't from page 3**—
/EvolutionReport.html.

But, says Wilson, "If you're old-fashioned, bring me six blank CDs in cases for exchange for CDs on which the audio has been burned." Wilson's office is Sc 1323.

The Evolution Report is funded by a grant for supplemental instruction in the biomedical sciences to Dr. **Maria Elena Zavala**. Supplemental materials with a similar goal are being developed for each of the courses in the Biology core. For more information, check the web at www.csun.edu/~csummore.

Service and the Outside World

Dr. **Michael Summers** gave a colloquium talk at CSU Long Beach: "Spore formation in cyanobacteria; a molecular genetic approach."

Dr. **David Gray** spoke on "The evolution of reproductive behavior in crickets: Investigating the role of sexual and natural selection in speciation" at CSU Fullerton.

Dr. **Steve Oppenheimer** has been asked to be one of three regional editors of *Acta Histochemica*. In his editorial role, Oppenheimer will receive submissions from the U.S., Canada and South America. Researchers with manuscripts in histochemistry, cytochemistry, structural biochemistry, cellular and tissue imaging, and the like are invited to contact him.

Drs. **Dave Gray** and **Paul Wilson** served this winter on panels judging dissertation research proposals for the National Science Foundation.

Dr. **Larry Allen** was appointed to the California State Scientific Advisory Panel overseeing the white seabass fisheries management plan of the California Department of Fish and Game.

Dr. **Steve Dudgeon** served as a judge for the International Phycological Society's Christenson Prize awarded to the best paper over a two-year period (2003-2004) in *Phycologia*.

Dr. **Larry Baresi** was recently elected as a member at large for the Southern California Branch of the American Society for Microbiology. His duties include

being student activities coordinator and academic moderator for the upcoming annual meeting to be held in San Diego, November 3-5, 2005.

Biology Teaching Associate **Diana Andres** is a member of the union bargaining team for the contract negotiations for academic student employees.

DNA Class Website Top Hit

If you type the words "recombinant LDNA" into the Google or Yahoo search engines, CSUN's Biology 572 website now comes up on the first page! Indeed, the website is ranked about tenth out of 1.7 million in referrals.

According to Stan Metzenberg, creator of the website for his class, "My page hits have gone up a lot as a result of its high standing on search engines. I'm closing in on my first 100 Mbyte day."

Not too surprisingly in view of his website's success, Metzenberg has contracted with Garland Press to write a book on the basics of DNA techniques.

Student Research Gets Funding

Eight students were granted support by the University Corporation's Student Projects Committee: •**Dina**

Antonacci received \$1,515 for her study of "The neuroprotective effects of cyclic AMP response element binding protein in the spastic Han-Wistar Rat"; •**Chris Chabot** was awarded \$1,500 for his work on "Genetic variation in the tope shark off the California coast"; •**Brandie M. Cross** garnered \$2,695 for an investigation of "The effect of individual amino acids on nutrient self-selection in *Rhyarabia madera*"; •**Robin Elahi** walked away with \$1,337 for work on "A molecular investigation into the effects of age on the physiology of scleractinian corals"; •**Raymond Hernandez** received \$2,340 for his work on "The evolution of herbivory in reptiles"; •**Adrian Javaherian** latched onto \$1,600 for an investigation of "RNAi silencing of MPP1, a candidate tumor suppressor gene and its effect on contact inhibition"; •**Rebecca Kordas** was award-

ed \$1,760 for her studies of "Quantitative analysis of per capita interaction strength between rockweeds and barnacles";

•**Nikki Osborn** received \$1100 for and investigation of "Distribution barriers to movement and gene flow in carnivores in the eastern Santa Monica Mountains." These are each whopping accomplishments. Each should be very proud.

From another source, **Stevie Adams** was awarded a James R. Simpson Merit Scholarship (\$750) to support her studies.

Raymond Hernandez received a \$600 Thesis Support Grant from the Graduate Office.

Rebecca Kordas received a \$200 grant from PADI AWARE foundation and \$400 from the Associated Students.

To cover costs of travel associated with her research, **Kamelia Fallahpour** received \$200 from the Society for the Study of Amphibians and Reptiles, \$300 from Associated Students, and \$200 from the Society for Integrative and Comparative Biology.

Jennifer Lancaster also was awarded a travel grant of \$316 from the Associated Students and received \$924 in aid of research from the Society for Integrative and Comparative Biology.

Reef Study: More Funds!

Drs. **Robert Carpenter** and **Peter Edmunds** are recipients, with Drs. Russ Schmitt and Sally Holbrook of UC Santa Barbara, of a grant to establish a Long Term Ecological Research (LTER) site in Moorea, a tropical island in the South Pacific near Tahiti.

Since receiving their original grant, Edmunds and Carpenter have also been told that another grant application, this one to the Moore Foundation, has been funded, adding an additional \$1.4 million to their multi-million dollar LTER grant.

"This money is earmarked for equipment and infrastructure to be used in Moorea, such big-ticket items as a 23-ft boat, four 15-ft boats, a Land Rover, and a bunch of lab equipment," says Edmunds. "Some of the funds also will be made

available to other LTER researchers, including CSUN students.”

January saw the start of the field research associated with the new LTER grant in French Polynesia. The first trip was focused on preliminary surveys with the goal of selecting the locations where reefs will be monitored for decades. Assisting Dr. Edmunds on the initial visit were **Mike Murray** (the full-time technician working on the project) and graduate student **Mairead (Mai) Maheigan**. In addition to helping with the LTER research, Mai also will begin her M.S. research that is focusing on the ecology of Pacific corals.

Over a three-week period, the team visited much of the 50 km of reefs surrounding Moorea and were able to dive and snorkel on both outer reef and lagoon habitats. The next steps in this project are to make the final selection of study sites, a decision to be deferred to a two-day workshop at UCSB, and another lengthy field trip in April-May to really get things moving.

Robin Elahi, also in Edmunds’ lab, currently is spending ten weeks in the South Pacific completing a portion of his M.S. research while working as a teaching assistant with the East/West Marine Biology Program.

Tropical Biology Semester Ready for Five Weeks in Costa Rica

On March 8, students **Taya Cummins, Dan Medic, Tania Berreno, Milagro Lemos, Rebecca Galbo, Christine Hofmann, and Janet Walle** will depart LAX for a five and a half week field trip to the tropical ecosystems of Costa Rica. These students are enrolled in the Tropical Biology Semester (18 units of upper-division biology) led by Drs. **Paula Schiffman, Jennifer Matos, and Fritz Hertel**.

In its excursions, the group will experience all of the major ecosystem-types of Central America including lowland rainforest, seasonally dry forest, beaches and coastal forests, high elevation cloud forest, and alpine paramo. With guidance from their professors, the students will

REMINDERS FROM THE ADVISEMENT CENTER

Advisement Center hours

Students are invited to stop by the Biology Advisement Center whenever they have questions about requirements. The advisors are Drs. **John Kontogiannis** and **Joyce Maxwell**, and graduate students **Bridgette Nace, Robert Nohavandi, Ziba Razinia** and **Lily Welty**. All advisors are highly knowledgeable, thanks to Dr. Maxwell’s training program (funded by the NIH minority programs). The Advisement Center, Sc 2133, is open 38 hours per week with times posted on the door.

Upper-division Writing Exam required for graduation!

Students expecting to graduate must pass the Upper Division Writing Proficiency Exam not earlier than the semester in which they have completed 90 units. Students planning to graduate in spring 2005 must pass the exam no later than April 23. Students planning to graduate at the close of the Fall semester 2005 must pass this exam not later than November 2005. For more information

call the Testing office at 677-3303.

Plan to graduate next year?

Undergraduates expecting to graduate in fall 2005 must file Graduation Evaluation and Graduation Application forms not later than March 1, 2005. Those students planning to graduate in spring or summer 2006 must file not later than July 1, 2005. Students may have their forms completed at the Biology Advisement Center.

Accessing advisement info

An Advisement Handbook provides invaluable information on Biology requirements and course equivalencies. The free handbook can be obtained in the Advisement Center or at www.csun.edu/biology.

Career information available

Career sheets are available in the Advisement Center. Each sheet describes career opportunities associated with the various Biology options.

develop and conduct individual research projects involving the wild plants and animals in these amazing habitats.

Highlights of the trip will include week-long stays at world class biological research stations (La Selva, Las Cruces), national parks (Santa Rosa and Manuel Antonio), and nature reserves (Monteverde).

Says Schiffman, “When they return to CSUN, the students will present the results of their research projects to the Biology Department at a May 20 poster fair.” The Tropical Biology Semester program will be offered again in spring 2007. If interested, talk now to one of the instructors. “Experiences of a lifetime are guaranteed,” says Matos.

Fall Course Offerings Planned

In the fall semester Dr. **Michael Summers** will offer an evening section of BIOL 566, The genetics of bacteria and their viruses. The class is open to both seniors and graduates. Because it is only infrequently offered, interested students should give serious consideration to working it into their schedules.

Three graduate seminars have been proposed for fall. The general topics and instructors of the trio are: “Molecular genetics” (655D) by Dr. **Rheem Medh**; “Biogeography” (615E) by Dr. **Jennifer Matos**; and “Microbiology” by Dr. **Paul Tomasek** (655A).