Bios

The Biology Department Newsletter
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For back issues & more information about Biology Dept., see *www.csun.edu/biology.*

California State University Northridge

California State University, Northridge

New Publications by Biology Faculty and Their Students*

Drs. **Dean Lauritzen** (former instructor), **Fritz Hertel**, and **M. S. Gordon** have a paper in *Journal of Fish Biology*: "A kinematic examination of wild sockeye salmon jumping up natural waterfalls." Hertel with other coauthors also have a paper in *Journal of Field Ornithology*: "Birds from Chungungo, Tilgo, and Pajaros Islands in north-central Chile."

A recent paper, "Analysis of unconventional approaches to the rapid detection of surface lectin binding ligands on human cell lines," was given lead (first) position in *Acta Histochemica*. The co-authors include an all-star cast of Biology faculty: **Drs**. **Lisa Banner**, **Mike Summers**, **Larry Baresi**, **Stan Metzenberg**, **Cathy Coyle-Thompson**, and **Steve Oppenheimer**, along with former students **Lily Welty** (now in Ph.D. program at UC Santa Barbara), **Eileen Heinrich** (now in Ph.D. program at UCLA), and **Karina Garcia** (now in Ph.D. program at West Virginia University).

With colleagues, **Dr**. **Paul Wilson** has a new paper in the *American Naturalist*: "Anther evolution: pollen presentation strategies when pollinators differ." The paper presents data consistent with the view that flowers evolve by processes analogous to sexual selection in animals. Wilson and colleagues also have a chapter in a book just published by University of Chicago Press: *Plant-pollinator interactions*. The chapter is entitled "Shifts between bee- and bird-pollination among penstemons."

Three papers from the coral reef group have been accepted for publication. **Joshua Idjadi** and **Dr**. **Peter Edmunds** authored "Scleractinian corals as facilitators: evidence for positive interactions between scleractinian corals and other reef invertebrates" to be in *Marine Ecology Progress Series*. **Drs**. **Robert Carpenter** and **Peter Edmunds** authored "Local and regional scale recovery of *Diadema* promotes recruitment of scleractinian corals" to be in *Ecology Letters*. Edmunds and students **Joshua Idjadi**, **Sarah Lee**, **John Bruno**, **William Precht**, and **Laurie Allen-Requa** authored "Rapid phase-shift reversal on a Jamaican coral reef" to be in *Coral Reefs.*

From the laboratory of Integrative and Comparative Herpetology, **Jennifer Lancaster**, **Dr**. **Paul Wilson** and **Dr. Robert Espinoza** have a paper accepted by *Animal Behavior*: "Physiological benefits as precursors of sociality: why banded geckos band."

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

Research Talks and Posters Presented at National Meetings

In October a group of students from **Dr**. **Michael Summers**' lab attended the American Society for Microbiology Southern California Branch meeting and presented several posters. In the list that follows only the lead author is noted: •**Ronak Patel** on "Identification of akinete specific proteins expressed in a zwf mutant of *Nostoc punctiforme*" •**Jennifer Hedger** on "Optimum cyanobacterial growth requires a functional Crp" •**Joe Ireland** on "Characterization of *Nostoc punctiforme* akinetes using transmission electron microscopy" •**Kumuda Murthy** on "Identification and confirmation of Crp regulated genes in *Synechocystis* sp. strain PCC 6803." Murthy won first place in the poster competition and received a $600 travel award to attend the General ASM Meeting this May.

In January many from the Summers' lab attended the 18th Annual California State University Biotechnology Symposium meeting where six students presented posters. Only the lead author's name is listed below: •**Jennifer Hedger** on "Cyanobacterial transporters and Crp regulation" •**Joe Ireland** on "Isolation and characterization of akinetes in *Nostoc punctiforme* for transmission electron microscopy" •**Kumuda Murthy** on "Molecular characterization of Crp regulated genes in *Synechocystis* PCC 6803." •**Dennis Narcisco** on "Characterization of phaEC gene expression in *Synechocystis* sp. strain PCC 6803" •**Ronak Patel** on "Analysis of akinete specific protein expression in a zwf mutant of *Nostoc punctiforme*" •**Araceli Vasquez** on "Crp-regulation of ndhF3 in *Synechocystis* PCC 6803."

Dr. **James Hogue** was an invited speaker at the annual meeting of the Entomological Society of America where he gave an address entitled "Insects in sex (and love): insects and the amorous affairs of humans."

The students made us proud at the meetings of the Western Society of Naturalists. Talks were given by •**Annaliese Hettinger** on "Physical forcing of bottom-up processes in a shallow-subtidal community" •**Stephanie Talmage** on "Patterns of abundance of *Sargassum mangarevense* across hydrodynamic and

herbivory gradients in Moorea, French Polynesia" •**Kathy Morrow** on "Competitive and facilitative interactions between *Corynactis californica* and benthic algae are mediated by a shallow kelp canopy" •**Kylla Benes** on "Effects of *Eisenia arborea* on the development and structure of an understory algal community" •**Dave Bottinelli** on "The age, growth and fecundity of the California barracuda" •**Stacy Krueger** on "Regulation of growth and development via gastrovascular transport in a colonial hydrozoan" •**Robin Elahi** asking "Is bigger better? testing for energetic constraints on maximum size in the solitary scleractinian coral, *Fungia concinna*" •**Mairead Maheigan** on "Variation in morphological traits of the common pacific coral *Pocillopora verrucosa* at different spatial scales" and •**Rebecca Kordas** on "Latitudinal variation in interactions between rockweeds and barnacles in the gulf of Maine." •**Dr**. **Peter Edmunds** showed that faculty also can speak with "Temperature-mediated transitions between isometry and allometry in a colonial modular invertebrate." Posters were given by •**Danny Green** who addressed "Has a weedy species of coral become more abundant in the caribbean?" and •**Hollie Putnam** on "The relative importance of disturbance agents on the coral community of a pristine location."

The lab of **Dr**. **Randy Cohen** presented five posters at the Society for Neuroscience meeting: •**April Ochoa's** was on "Pharmacological role of mGluR5 receptors in mediating neurodegeneration" •**Vernita Davis'** was on "The neuroprotective effects of 17-ß-estradiol" •**Dina Antonacci's** was on "The characterization of CREB in neuroprotective mechanisms" •**Reem Agel's** was on "Progressive neurodegeneration assessed with magnetic resonance imaging" and •**Thiago Halmer**, **Eleni Kontogiannis** and **Don Reeder's** was on "Pharmacological manipulation of oxidative stress pathways." All were studying their topic using the spastic Han Wistar rat.

Ray Hernandez attended the meeting of the Society for Integrative and Comparative Biology where he gave a talk entitled "Is a dietary jack of all trades a master of none? Adaptability of gut form and function in an omnivorous lizard." **Christopher Rodriguez** recently gave two talks: "Herpetofauna of Mexico" to the Oregon Herpetological Society"and "Turtles and tortoises of western Mexico" to theChino Valley Turtle and Tortoise Club. Both are grad students who work with **Dr**. **Robert Espinoza**.

Many students who attended meetings received micro-grants to defray their costs from the Graduate Studies Office, Biology Department, College of Science and Math, and Associated Students.

Biology Struts at Student Research Symposium

Most of the students who presented at the meetings of the previous article also presented at CSUN's Student Research Symposium. Along with them, there were talks by •**Jolene Pucci** saying "Invasive species contribute to declines of Lyon's *pentachaeta*: Implications for management" •**Andrew Ellis** on "Biological soil crust impact on germination and growth of California native and alien plants at the Carrizo Plain National Monument" •**Joanne Moriarty** on "Aspects of female bobcat reproductive behavior and kitten survival in an urban fragmented environment" •**Julia Martin** on "Genomic cloning and sequencing of a methanogen phage that infects *Methanobrevibacter smithii*" and •**Mukta Shiwalker** on "Modulation of keratiocyte apoptosis by peroxisome proliferator activated receptors." **Jolene Pucci** won 1st place, **Annaliese Hettinger** 2nd place, and **Rebecca Kordas** 3rd place. Posters other than those listed in the previous article were given by •**Mark Harris** and **Gabriele Meyer** on "Loss of accD Gene from monocots" •**Claudia Hernandez** on "The epigenetics of autism" •**Ziba Razinia** on "Effects of sea urchin hyalin on gastrulation" and •**Jon Williams** on "Otolith structure and the age and growth of juvenile white seabass." Among the posters from all disciplines, **Hollie Putnam** won 2nd place.

Biology Faculty Receive Grants

Biology faculty members have received grants of nearly a million dollars this year:

•**Dr**. **Maria Elena Zavala**, $479,278 for MARC Undergraduate Student Training in Academic Research from the NIH;

•**Drs**. **Virginia Vandergon** and **Steve Oppenheimer**, $60,000 for the San Fernando Valley Project from the UC Regents;

•**Dr**. **Michael Summers**, $148,042 for CSUN Bridges to the Doctorate from the NIH;

•**Drs**. **Robert Carpenter** and **Peter Edmunds**, $190,000 for long-term dynamics of a coral reef ecosystem from the NSF;

•**Dr**. **Larry Allen**, $95,396 for Monitoring of juvenile White Seabass in the Southern California Bight from Cal Fish & Game;

•**Dr**. **Virginia Vandergon**, $18,641 for "System-wide change for all learners and educators" from the CSU system;

•**Dr**. **Steve Oppenheimer**, $15,000 for Perfecting undergraduate student research courses: Uncoupling of credits, seat time and learning through year round operation from CSUN Academic Affairs. As a result of this grant, students can do independent studies during summer and intersession in Oppenheimer's lab, while getting credit for the work during the regular semesters.

Biology Students Garner Funds

Ann Dorsey, **Ziba Razinia** and **Karineh Petrossian** were awarded thesis expense grants from the Graduate Studies office. Karineh also received an Associated Students Research Award.

Claudia Hernandez received a Graduate Equity Fellowship from the office of Graduate Studies.

The following students have been awarded University Corporation Grants:

•**Raymond Burke**, $1,500 for "Detec-

tion of germline mutations in B-Cell non-Hodgkin's lymphoma suggests a hereditary link"; •**Kaushali Thakore-Shah**, $1,500 for "Molecular analysis of the FMR1 gene in Waisman Syndrome"; •**Claudia Hernandez**, $2,800 for "The epigenetics of autism"; •**Julia E. Martin**, $1,700 for "Genomic cloning and sequencing of a methanogen virus that infects *Methanobrevibacter smithii*"; •**Rebecca D. Miller**, $3,500 for "Molecular evolution and expression of anthocyanin synthase and dihydroflavonol reductase in California tarweed and Hawaiian silversword families"; •**Hollie M. Putnam**, $1,500 for "The molecular response of scleractinian corals to thermal stress at varying temporal scales"; •**Stephanie Talmage**, $1,200 for "Allocation of carbon in *Sargassum mangarevense* across a flow and herbivory gradient in Moorea, French Polynesia."

Why do research? — an editorial

The CSUN Biology Department prides itself in providing research experiences for a large proportion of students. This has led to CSUN Biology being ranked by the National Science Foundation in the top five comprehensive universities out of over 500 in terms of science graduates who go on to earn doctoral degrees.

We have seen that when students are invited to interviews for graduate and professional schools, they are often asked to discuss their research done at CSUN. There is no doubt that doing a good job on a research project helps students gain admission to advanced programs. In fact, some students have told us that most of the interview time was used to answer questions about their research.

But there is also a more chaste reason to get involved in research; namely, that it will make your college experience substantially more of an education. You will be able to work closely with a researcher and see how she or he operates. You will focus in on a scientific problem, reading the literature on that problem and gathering data relevant to addressing hypotheses or describing the state of nature. And you'll learn skills that can be applied to many future endeavors.

Generally speaking, professors like to have students show an interest in their work. Go to *www.csun.edu/biology* and read some of your professors' past publications. Then go to someone's office hours to talk about that work and current research. Even if the professor has no room, you may find the experience profitable.

—con't p. 5, Research—

New GE package Imminent:

An interview with Dr. Jennifer Matos

Bios: Starting in the fall, there will be a new General Education package available. How were you involved in developing the new GE package?

Matos: I was the chair of the General Education Task Force. The Task Force was composed of faculty representatives from each of the Colleges, the Library, the Educational Policies Committee, EOP, and the Associated Students.

Bios: Why change GE?

Matos: The new GE package will address a basic inequity in the current GE program: native CSUN students have been required to take nine additional units of GE to graduate when compared with students that transfer in already GE certified. Additionally, the old GE required 58 units for students who began their university coursework at CSUN, one of the highest GE unit requirements in the state. The new GE, with its reduction in units to 48, should help students graduate sooner than the old GE.

Bios: What are the more important ways in which the new package differs from the old?

Matos: The new GE allows, and in some ways encourages, students to explore areas they are interested in, while retaining the breadth that is the spirit of General Education. The new GE does not require that students take courses in various sub-sections of a category of GE. For example, in the current GE, to complete the Humanities requirement, students were required to choose courses from three different subsections, totaling nine units. The new GE allows students to fulfill this same requirement, now called Arts and Humanities, by taking six units made up of any courses in the section.

What this means is that if an individual student is interested in art, for example, he or she can take two art classes. In the old GE, to fulfill this requirement, a student would have had to take one class in literature, one in the fine arts, and one in philosophy or religion. In other words, students now have the opportunity to explore subjects that they like.

Because of this greater flexibility of student choice, plus the reduction in units, there is a hope that students will be more likely to choose to minor in a subject matter area, as well as pursue advanced knowledge in a field of interest.

Bios: New students must study their way through the new GE package, but what about students who have been here for a while? What should they do?

Matos: Most students probably should opt into the new GE because of the reduced number of units. However, there will be forms in the advisement offices that will allow students to compare the old and new GEs given what classes they have taken and evaluate which is better. These forms will be available beginning in the summer.

Bios: What other benefits will there be to education at CSUN with the new GE?

Matos: The current GE program has little flexibility to accommodate students who enter the university with advanced skills and knowledge in areas outside their major. In addition to the benefits mentioned above, GE credit will be available to students who wish to take more rigorous majors-only courses. The new GE allows major programs to permit GE credit to such qualified non-majors for these courses.

Daniel Green is an undergraduate and Nancy Muehllehner is a graduate student, both working with Dr. Peter Edmunds on coral reefs. Dan Medic took the Costa Rica Semester as a PBU and is now a Biology grad student working with Dr. Fritz Hertel. Jonathan Kirzner is a grad student in the laboratory of Dr. Rheem Medh. Students interested in submitting articles such as these should contact paul.wilson@csun.edu.

If You're Gonna Get Wet, You Might As Well Go Swimming

—by Daniel Green & Nancy Muehllehner

This past year we've been busy doing research with Dr. Edmunds in the Virgin Islands and in Moorea. The work is on the health of the coral reefs over the long term, and it involves a lot of time under water. We couldn't have participated in this research without first getting scientific diver certifications from the American Academy of Underwater Sciences. The certification states that we've mastered the diving skills and underwater science techniques used in research.

There are two options available to students: the dive class through the Ocean Studies Institute or the dive class at the Wrigley Institute. Both are high-quality, but each has its own unique attributes.

The class taught by OSI is definitely a little easier on your wallet than the Wrigley class. It's $300 for Cal State students, and you meet for three weeks during August at the Southern California Marine Institute located on San Pedro's Terminal Island. Last year, students dove at locations such as the Long Beach Aquarium (yes inside the aquarium itself), offshore oil rigs, rock jetties, and the Catalina Channel.

The class taught by the Wrigley Institute has a heavier impact on your wallet, about $1,000, but what makes up for the cost is that you get to live on Catalina Island for two full weeks with all accommodations included. Many of the dives occur directly in front of Wrigley, but there are also opportunities for the students to take out Boston Whalers and explore a little bit of the island in pairs. The best diving on Catalina Island is definitely at Bird Rock, less than a mile from Wrigley, in the species-rich kelp forest.

We encourage anyone interested in learning to dive to participate in either program. Both offer high quality instruction and emphasize safety. To participate in the programs, you must already be a certified open-water diver with at least 12 dives already completed. The diver must also own or rent all of his/her own gear including a regulator, BC, wetsuit, etc. First-aid, CPR, and oxygen administration certifications are recommended, but classes on these subjects are often given either during or before the AAUS dive class.

For more information on class schedules and requirements go to the websites of the respective institutions: *http://osi.scmi.us/* or *http://wrigley.usc.edu/*. Either way you are in for some amazing dives, and the door is open for a grand future in marine research!

Field Notes from Costa Rica

—by Dan Medic

Two years ago, as a prospective student, I was given a list of professors who work on field biology. Little did I know as I knocked on Dr. Fritz Hertel's door that ten months later we would be lost together in the jungles of Costa Rica. It was on a day when the plan was to find a pristine patch of premontane rainforest, collect some data on vegetation structure, and be back by lunch. In retrospect, maybe it wasn't such a good idea to tell the guide after three hours of barely visible trails that we would be able to find the way back to camp ourselves. After data collection, we headed down the mountain, and it quickly became apparent that we had "missed a turn." Bushwacking and following gravity, we staggered back to the cabins just in time for a dinner of beans and rice.

The Tropical Biology Semester was a great experience. It caught my interest because I wanted a taste of field research, and the semester provided exactly that. The vast majority of the time in Costa Rica was spent in the field collecting data, individually or in groups. We visited lowland rainforest, dry deciduous forest, swamp, savannah, and premontane rainforest.

Learning in a classroom about the biodiversity and abundance of life in the tropics is all well and good, but nothing compares to experiencing the rainforest firsthand. The diverse locations gave us the opportunity to see a variety of mammals, birds, reptiles, and of course insects of every sort. On any given day we came across coatis, peccaries, agoutis, howler monkeys, capuchins, sloths, toucans, leaf cutter ants, army ants, golden orb spiders, iguanas, and poison dart frogs, just to name the ones we could name.

Being able to choose our own research ensured that students did projects that interested them. Topics included leaf litter composition, monkey vocalizations, seed dispersal, bird behavior, plant plasticity, and forest structure. Prior to leaving for Costa Rica, the professors were very helpful in preparing the class for what we would be working with. Once in the field, they provided insight and helped us to focus our research questions.

Accommodations and food at the research stations were better than expected, and by no means were we roughing it. A typical day involved waking up to the roars of howler monkeys, a breakfast of beans and rice, then off to the field for a day of collecting data. Downtime activities included zip-lining through the canopy and inner-tubing down caiman-infested rivers. Being able to do work at prominent research stations, such as La Selva and Santa Rosa, that we had read about in scientific papers made those papers more tangible. It also gave us an opportunity to meet, talk with, and learn from scientists who were doing research

at those sites. The Costa Rica Semester is a great experience for anybody interested in doing field work and seeing a different part of the world.

Editor's note: The Costa Rica class will be offered again in spring 2007. If interested, contact Dr. Gray, Hertel or Matos.

From Science 2, Not Eucalyptus Hall

— Jonathan Kirzner

Science 1-through-4 have been renamed
And by this misstep are so defamed

Our buildings of science
Each a straying child
Given a name at birth
Which has since been defiled
Replaced by an alias from the wild

These children have fallen in with the wrong crowd
Using monikers imposed by their new friends
Self-deceiving and ironically proud
Billed as an improvement
Forsaking their past, their parents'wishes
Nicknames made with uncalculating whim
Ignorant of the truth:
Good things that serve a purpose need not re-begin

Their parents were pragmatic
Perhaps perceived as too phlegmatic
Discredited and changed
Replaced by newfangled ideals,
Misguided
And until now no one complained

The bad influences propound
The need for a new sound
Here the problem can be found

The corrupters agreed
To rename and sow new seeds
Complaining only of non-nativity
In the end the same regardless
Pathogenic over-creativity

Bring the young ones home
Overcome the rude ambition
Of those with whom they have not grown
Return them to their informative roots,
For, the impractical names of over-glorified weeds
Must be overthrown

Magnolia,
Citrus,
Eucalyptus,
Live Oak
The names need not stay with us
Fix them 'cause they're broke
Undo the fancy, unwelcome labels,
Those the new clique spoke

The Long-Anticipated Fish Book

The Ecology of Marine Fishes: California and Adjacent Waters, edited by our own **Dr. Larry G. Allen** and colleagues **Drs. Daniel J. Pondella**, **II**, and **Michael H. Horn** has been published by UC Press. The book is 705 double column pages and costs only $75. It synthesizes a prodigious amount of technical information presented with themes that are accessible to a student majoring in biology. At the same time, the book will be the entry reference for all Californian ichthyologists.

The book includes chapters on the fishes of each habitat, as well as the major processes of fish ecology. Throughout, there is a strong biogeographic theme. Many practical issues with fisheries are discussed, and there is great sensitivity to the biology of each species, 500 of which are treated.

The most delightful aspect of the book is its illustrations. Tidy diagrammatic pictures of the species in color decorate nearly every graph and every conceptual discussion. This greatly improves the vividness of presentation for those who do not know all the fishes in the sea. It is with enormous pride that we note the CSU's prominent role in housing the authors of this text in an age when other universities force their faculty into highly focused research. The breadth is breathtaking.

—Research, con't from page 3—

One professor who always has room in his cancer/developmental biology lab is **Dr**. **Steve Oppenheimer**. Just visit him in the basement of Eucalyptus Hall, room 2005. Students who sign up for research for the coming fall will be able to start their work during the summer or intersession, before they are saddled with a heavy course load.

In addition, **Dr**. **Maria Elena de Bellard** is looking for two graduate students to work in her lab on: (1) an evolution-development project, (2) dissecting the mechanism of cell repulsion in the neural crest. She can be found in CH 3213.

The most productive period ever for Oppenheimer lab

With three published papers, 11 posters and two new manuscripts, with about 100 student and colleague co-authors, 2005-2006 was the most productive year ever for the Oppenheimer lab.

Dr. Steve Oppenheimer's students found that new, more specific anti-cancer drugs can be developed based on the differential binding ability of cancer cells. This discovery was made using derivatized beads and tissue culture, where agents that bind best to cancer cells were often more toxic to them than to normal cells.

In another set of experiments, Oppenheimer and students used fluorescence microscopy to demonstrate the usefulness of the bead assay in identifying cell surface components. Both techniques yielded nearly identical results, indicating that the bead assay works, but most important, it is more rapid in analyzing cell surface components than any other known assay.

The lab also found that by dissecting adhesive systems out of sea urchin embryos, they could study cellular interactions under controlled conditions away from confounding factors found in whole embryos. This was an entirely new development that may prove to be a breakthrough for the field.

Using other technology, the lab has isolated adhesion molecules from sea urchin

embryos using high pressure liquid chromatography. These molecules, currently being characterized, block a specific adhesive interaction under study. In addition, another project has shown that the protein hyalin appears to control initial gastrulation events. Oppenheimer, colleagues and students also developed a new microplate assay that allows accurate quantitative evaluation of the effects of molecular probes on specific morphogenetic events.

The NIH has designated the sea urchin as a model system because what is true in sea urchins is often true for humans, which are far less accessible for experimentation. Understanding of the molecular basis of adhesive interactions in the sea urchin should help lead to a better understanding of defective adhesive interactions in, for example, the spread of cancerous cells.

Finally, the lab developed a new approach to the design of carbohydrate drugs and diagnostic tests using beads as an alternative to microarrays. Based on 3900 replicates, the lab team developed the most comprehensive listing ever assembled of carbohydrate inhibitors of the most widely used lectin in the world, Concanavalin A (Con A). This listing replaces much less comprehensive reviews of the past. Con A is widely used to purify glycan-containing molecules and for identifying sugar-containing ligands on cell surfaces. Carbohydrate inhibitors of Con A binding are needed to elute off molecules bound to Con A and to examine specificity of Con A binding. The new list includes 30 Con A binding inhibitors ranked in order of effectiveness.

Clearly, a banner year for Oppenheimer, his students and colleagues.

Notes from the Advisement Center

Advisement Center hours

Students are invited to stop by the Biology Advisement Center (EH 2133) to have academic questions answered. Faculty advisors **Drs. John Kontogiannis** and **Joyce Maxwell** are assisted this semester by graduate students **Bridgette Froeschke, Lut Hang Li (Alex)** and **Ziba Razinia,** and by instructor **Robert Nohavandi**. The Center is open Monday through Friday, 9:00 a.m. to 5:00 p.m.

Summer term 2006

Students wanting to enroll for the summer 2006 term can apply for self-appointments to register online. Times to register are from March 21 to April 9, 2006 for registration by appointment dates of April 3-9, 2006. Nonrestrictive registration will be from April 10-June 4, 2006.

Upper Division Writing Exam required for graduation!

The Upper Division Writing Proficiency Exam must be attempted no later than the semester in which 90 units are completed. Students planning to graduate in spring 2006 must pass the exam no later than June 3. Those planning to graduate at the close of the fall semester 2006 must take the exam no later than January 20, 2007. For more information call 677-3303.

Plan to graduate next year?

Undergraduates planning to graduate in fall 2006 must file a Graduation Application form no later than March 3, 2006. Students planning to graduate in spring or summer 2007 must file the appropriate forms between April 7 and July 3, 2006. 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 is available in the Advisement Center.

Career information available

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

Local benefactor funds student research journal

According to **Dr**. **Steve Oppenheimer**, the Van Nuys Airport has agreed to permanently fund the publication of the *Journal of Student Research Abstracts,* a showcase for the research of K-12 students. The journal will be listed by the Library of Congress on its website.

Says Oppenheimer, editor of the journal, "We thank Stacy Geere, a director of Van Nuys Airport, for this fantastic contribution to science education." The additional funds will allow a print run this year five times as large as in past years.

For information about how K-12 students can have their work publish in this journal contact Dr. Oppenheimer at *steve.oppenheimer@csun.edu.*

Faculty Accomplishments

At the meeting of the Western Society of Naturalists, **Dr**. **Larry Allen** was elected President of the society. He will serve as President-elect in 2006 and President in 2007.

Dr. **Robert Espinoza** was named "Outstanding Minority Professional" by the University of Michigan School of Natural Resources and Environment. Seemingly unrelated, he spent January in Argentina setting up a long-term study to compare how high- and low-elevation lizards cope with freezing conditions.

Biology of Cancer, Help Needed

See **Dr**. **Steve Oppenheimer** if you are interested in helping plan BIOL 285, Biology of Cancer, for fall 2006. Many distinguished experts in the biological and clinical aspects of cancer will present lectures in this course.

Catalina Marine Semester
Scholarships Available: Apply!

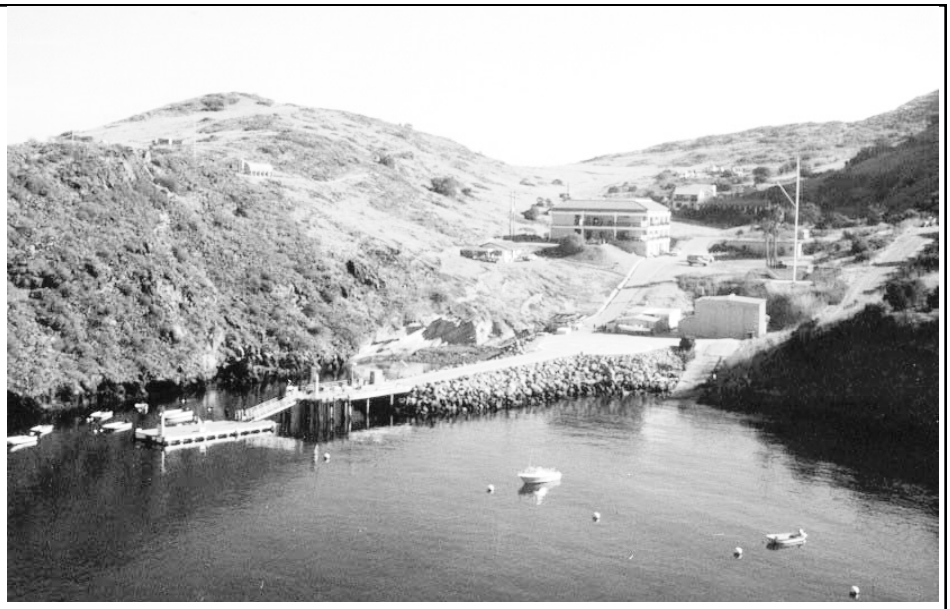
Next fall you can take all of your classes at Santa Catalina Island as a part of the "Catalina Semester," an intensive exposure to marine biology. The program is based at the Wrigley Marine Science Center, a location that provides access to beautiful, pristine marine habitats. Those who participate will take Marine Invertebrate Zoology, Ecology of Marine Fishes, and Marine Biology, and do an individual project—15 quality units!

All courses provide a strong element of hands-on field experience. Only snorkeling skills are required for course work but a research diving certification course is planned before the semester begins for qualified students who wish to dive on SCUBA.

The dorm and lab facilities are grand, as illustrated in the accompanying photo. The Wrigley Center is on a private and undeveloped portion of the Island, a 45-minute walk from Two Harbors. Three meals a day are provided at the lab.

The projected cost is your usual tuition, plus about $4,500 for food, lodging, and lab fees. However, scholarships of as much as $3000 are available for some students to defray some costs. Thus, you might save money by doing the Catalina semester instead of staying at Northridge.

Application information is available from Kristy Kull. She can be reached via phone (310) 519-3172 or email (*kkull@csulb.edu*) or by letter at: Catalina Semester, Ocean Studies Institute, 820 S. Seaside Ave., Terminal Island, CA 90731-7330. Applications can also be gotten from *http://osi.scmi.us/* by clicking on CSU Catalina Semester. For information on diving, click on OSI Scientific Diving Program. If you have academic questions, contact Dr. Peter Edmunds at *peter.edmunds@csun.edu*.



Array of interesting courses scheduled for fall semester

Graduate Seminars

Dr. Dave Gray will teach a grad seminar on the genetic differentiation of populations using molecular markers. **Dr. Robert Carpenter's** seminar will deal with how the physical environment affects organisms. **Dr. Rheem Medh** will offer a seminar on the genetics of inherited disorders. **Dr. Michael Summers'** seminar delve into photosynthetic life on Earth.

New, rarely taught courses

Dr. Cindy Malone will teach BIOL 562, **Molecular Genetics of Eukaryotic Organisms**.

BIOL 542, **Developmental Biology**, will be offered after many years of hibernation. Dr. Maria Elena de Bellard, course instructor, says, "Come and learn about genes, developmental patterns, model organisms, evolution-development relationships, and many more interesting things in this great course on how our systems come to be what they are."

BIOL 595K, **Quantitative Analysis in Molecular Biology**, is an experimental course to be taught by Dr. Stan Metzenberg. Topics include in vivo and in vitro labeling, binding and detection methods, DNA, RNA, and protein quantitation, expression profiling, combinatorial methods, clustering, imaging, and mathematical modeling. The course may be used for the Biology B.A. as a List 4 Elective; for the B.S. Option I in the List 5 Elective Group I; for Option III in the Selective Program; for Option IV in Biotechnology Selective Program; or for the M.S. as an additional course, but not as a substitute for BIOL 502 or 503.

Dr. Paula Schiffman will be teaching BIOL 533/592C, **Conservation Biology**. The course addresses the application of ecology and evolution to real human-caused biological problems. Topics to be covered include endangered species, issues of small population size, habitat fragmentation, invasive organisms, genetically engineered organisms, pollution effects, ecological restoration, habitat reserve design, and global climate change. The course should be of interest to many students, particularly those in the Environmental Biology and Marine Biology B.S. options and to graduate students, especially those with field biology orientations.

K-12 Research Symposium Slated

Everyone is invited to attend the 2006 K-12 Student Research Poster Symposium to be held at 10 a.m. in the Grand Salon of the University Student Union on Saturday, May 27. About 100 students, teachers and parents will attend, in addition to many dignitaries, among them the Director of Science of the Los Angeles Unified School District. Parents of potential student participants are urged to contact Dr. Steven Oppenheimer, syposium director at *steve.oppenheimer@csun.edu*.

Biological Ecology & Evolution Reading Group

This spring **Raymond Hernandez** will continue as President of the BEER Group. **Jolene Pucci** and **José Monzón** will serve as VP and Treasurer, respectively.

The purpose of the BEER Group is to provide students and faculty a forum for discussing the literature and project ideas in ecology and evolution. Through these interactions, students become familiar with the literature and hone their critical thinking and reading skills.

All students and faculty are encouraged to attend. The group meets Fridays at 3:30 p.m. in LO1322. Pizza, soda and candy are available at meetings for a small charge. Email *rah56284@csun.edu* or call 677-5737 for more information or to be added to the e-mail list. Proceeds from these sales fund BEER Group events.

Genetic Counseling Program

Six second-year students attended the annual meeting of the American Society of Human Genetics in October, along with **Drs. Stan** and **Aïda Metzenberg**. Highlights included talks by Francis Collins and Seymour Kessler.

In addition, sixteen students attended the annual education conference of the National Society of Genetic Counselors in November where they heard talks by Mary Claire King. **Fiona Field** also attended the annual meetings of the Association of Genetic Counseling Program Directors.

The GC Program will be sponsoring a conference on Lysosomal Storage Disease on May 17. The conference is open to the public, but it is necessary to reserve a space to attend. For details, email *genetic.counseling@csun.edu*.

New Grad Students

Dr. Tim Karel's lab has two new grad students: **Jarrod Peercy**, just graduated from CSUN with a B.S.; and **Taylor Anderson-McGill,** a native Californian and graduate of UCSD who worked with Karels in Canada in 2004.

Oliver Badali and **Youngkwang Kim** will work with Dr. Steve Oppenheimer; **Romina Moradian** with Dr. Larry Baresi; **Jenevieve Polin** with Dr. Cindy Malone; **Mohammed (Matt) Tabek Bakir** will document the herpetofauna of Syria with Dr. Robert Espinoza; and **Syeda Zaidi-Merchant** is working with Dr. Aïda Metzenberg.

Bienvenida a la CASA

To students thinking of doing graduate work at another institution, Dr. Maria Elena Zavala, Director of the C.A.S.A. programs, offers some words of advice.

Students hoping to do graduate work at another university should plan to visit that university. After applying, students being seriously considered are often invited for an interview, usually in spring semester.

In the sciences, the university inviting a student often pays for a visit, including costs of travel, lodging and food. Invited students are usually asked the names of faculty that s/he would like to meet during the visit. After identifying them, be sure to read at least one paper from each professor's lab so that you know what he or she is doing and will have something to talk about. Professors love to talk about their research and are more likely to select a potential student who shows an interest in and knowledge of it!

On their visit, invitees will meet current graduate students. There may be social activities associated with an interview, perhaps a dinner at a nice restaurant, or possibly a visit to the beach. While it may be tempting to beg out of the social event, resist that temptation! If accepted at the new institution you will be part of research team and it is important that your future peers get to know you as a potential friend. These functions also will allow you to determine if you want to belong to that team! Remember, you are interviewing them just as they are interviewing you.

After your visit send a thank-you note to the person who arranged your stay and to each professor you visited. All of the MARC and MBRS students who have applied to graduate school have several interviews scheduled with prospective graduate programs, and several already have offers in hand.

MARC applicants welcomed

Invitations to participate in the MARC U*STAR program have been mailed. MARC U*STAR is an NIH funded program to increase the numbers of traditionally under-represented ethnic groups in biomedical research. If you believe that you qualify, drop by the CASA office (EH 2128) for an application.

Summer opportunities available

What will you be doing this summer? The CASA office has a large collection of announcements for summer programs that offer opportunities nationally and internationally to conduct research. Many pay stipends, housing and travel to and from the site.

Most of the programs are for students planning to go to graduate school and are usually funded by Ph.D.-granting institutions, the NIH, foundations of various sorts, and federal laboratories. The deadline for some have passed, but some others have deadlines as late as mid-March. Come on by the CASA office (EH 2128) and check out these opportunities!