

Bios

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California State University
Northridge

California State University, Northridge

Biology Students & Their Mentors Publish Research

Two of Dr. Aida Metzberg's former students, **Vince Pureza** and **Denise Smith**, are co-authors with her with recent publications. Both students are co-authors on a paper that appeared in *Genetics in Medicine*. That paper, entitled "Characterization of mutations in 22 females with X-linked dominant *chondrodysplasia punctata* (Happle syndrome), is also co-authored by Gail Herman, K. Kopacz, J. Pitt (all of Ohio State University), Richard Kelley (Kennedy Krieger Institute, Johns Hopkins University), Rebecca Sutphen (University of South Florida), D. Smith and Les Sheffield (Murdoch Institute, Melbourne, Australia). Vince was an author on a second paper published in the *American Journal of Medical Genetics*. The paper, "X-linked dominant *chondrodysplasia punctata* (CDPX2) caused by single gene mosaicism in a male," was co-authored by D. Aughton (William Beaumont Hospital, Royal Oak, Michigan), R. Kelley (Kennedy Krieger Institute, Johns Hopkins) and R. Pauli (University of Wisconsin). Vince is a former MARC student and winner of last year's Bianchi Award for Undergraduate Research; he currently is pursuing his doctorate at the University of Illinois. Denise is in medical school at UC Davis.

Former graduate student **Judy Peng** and her mentor, Dr. Cheryl Hogue, are co-authors of a paper that just appeared in *Comparative Parasitology*. The paper is entitled "Relationships between fish parasitism and pollution exposure in the white croaker, *Genyonemus lineatus* (Sciaenidae), from Los Angeles Harbor, southern California."

Students **Lylla Ngo**, **Marcella Barajas**, **Gayani Weerasinghe**, local teacher **Greg Zem** and their mentor, Dr. Steve Oppenheimer, have published an article

in *Acta histochemica*. The paper, entitled "A new histochemical approach for studying sperm cell surfaces," developed from Lylla's Master's thesis.

Students Present Research

A team from Dr. Steven Oppenheimer's lab co-authored a poster at the national meeting of the American Society for Cell Biology in San Francisco. Authors on the paper, entitled "Using frozen, thawed and fixed cells to identify cell surface properties of human cancer cells," were students **Maria Khurram**, **Azalia Contreras**, **David Khatibi**, **Tharenee Sakhakorn**, **Lital Kirszenbaum**, **Arash Razi**, **Evelyn Soriano**, **Stephanie Gipson**, **Rashad Rimani**, **Oliver Badali**, local teacher **Greg Zem**, and Dr. Oppenheimer. Maria, Azalia and Greg presented the poster at the meeting. An abstract of the work was published in *Molecular Biology of the Cell*.

Maria Khurram, **Evelyn Soriano** and **Stephanie Gipson** presented a poster, "Surface differences in human cancer cells detected with derivatized agarose beads," at the SACNAS national conference in Anaheim in September 2002. The three students work with Dr. Steve Oppenheimer, a co-author on the paper.

Biology student **Sara Chavez** presented her thesis research on the molecular genetics of *Chondrodysplasia punctata* at the annual meeting of the American Society of Human Genetics in Baltimore in October, 2002. Her mentor, Dr. Aida Metzberg, was co-author on the paper. Sara, a Fulbright Scholar, has joined the faculty at Universidad Antenor Orrego in Trujillo, Peru.

This past year Genetic Counseling student **Kristin Borsack** presented her research at two major venues: The annual meetings of the American Society of Human Genetics, in Baltimore, and the

National Society of Genetic Counselors, in Phoenix. Her work was titled "Patient acceptance of amniocentesis after a positive serum AFP screen is not influenced by level of risk." Co-authors on the papers were her mentor, Dr. Aida Metzberg, and S. Morton, J. Greenberg, R. Petucha, B. Huffaker, and J. Siegel-Bartelt, all of Kaiser Permanente, Los Angeles.

Ariadna Martinez, a recent graduate of Genetic Counseling and a former MARC student, gave two oral presentations of her work on "Hearing status influences attitudes toward genetic testing for deafness." Her presentations were in Baltimore at a meeting of the American Society of Human Genetics and in Phoenix at the National Society of Genetic Counselors. Her study was guided by two Cal State Northridge professors, Drs. Joyce Linden (Special Education) and Aida Metzberg (Biology). A. Martinez, A. Chimenti and C. Palmer, all of UCLA, were co-authors on the work.

In January, **Pavel Lieb**, coordinator of the DNA sequencing facility, gave a poster presentation at the annual CSUPERB (California State University Program for Education and Research in Biotechnology) meeting. The presentation, titled "DNA sequencing facility at California State University, Northridge," identified the research and teaching activities that take place in the facility. Faculty co-authors of the poster were Drs. Paul Tomasek, David Gray, Stan Metzberg, Mike Summers and Aida Metzberg. The poster is on display in Science 4.

Undergraduate **Annette Angus**, a MARC student in Dr. Aida Metzberg's lab, presented the results of her study at the annual SACNAS meeting in Anaheim. Her paper, entitled "Mutational analysis of candidate genes for otopalatodigital syndrome-type 2," was co-authored by Dr. Metzberg.

Christina Hwang earned Second Place

for an oral presentation by a graduate student at Cal State Northridge's 2002 Student Research & Creative Arts Symposium. Her talk was titled "Identification of cyanobacterial gene regulated by Crp using a transcriptional reporter library." Dr. Michael Summers is her mentor.

Mahboubeh Azarmnia, a graduate student working with Dr. Michael Summers, presented a poster at the 15th CSU Biotechnology Symposium in Pomona. Her poster was titled "Glucose catabolic pathways in the cyanobacterium *Synechocystis* PCC 6803."

Diana Andres presented her work on "Testing diet switching as a mechanism for the evolution of herbivory in lizards" at the 2002 Cal State Northridge Student Research and Creative Arts Symposium. Diana works with Dr. Robert Espinoza.

Graduate student **Fabricio Rojas** presented a poster entitled "Characterization of the carbofuran hydrolase promotor" at three venues recently. He presented his work at the 15th Annual CSU Biotechnology Symposium in Pomona, at the 66th annual meeting of the Southern California American Society for Microbiology in San Diego, and at the Cal State Northridge Student Research and Creative Works Symposium. Fabricio, a participant in the NIH-sponsored Bridges-to-the-Ph.D. program, works in Dr. Paul Tomasek's laboratory.

Graduate student **Jeanie Paris** presented a poster entitled "Characterization of 5-chlorosalicylate dioxygenase, a unique bacterial ring fission enzyme" at the 66th annual meeting of the Southern California American Society for Microbiology (ASM) in San Diego. The presentation, co-authored by undergraduate **Alejandra Young** and their mentor, Dr. Paul Tomasek, received First Place in the collegiate poster competition. Award funds will help defray Jeanie's travel expenses to the national ASM meeting in Washington, D.C. this spring. Jeanie also presented the work at the Cal State Northridge's Student Research and Creative Works Symposium and Alejandra presented a portion of the work under the same title at the SACNAS National Conference in Anaheim. Alejandra participates in the NIH-sponsored MARC program.

Two student-authored posters from Dr. Randy Cohen's lab were presented at the 32nd annual meeting of the Society for Neuroscience in Orlando, Florida. One,

entitled "Intracellular mechanisms underlying neuroprotection in the spastic Han-Wistar rat: A model of glutamate excitotoxicity," was the joint work of graduate student **Cyrille Khalili**, undergraduate **Don Reeder**, and former grad student **Jennifer Spear**, now a part-time instructor for the Department of Biology. The second, with the title of "Potential neuroprotective characteristics of endogenous cannabinoids on excitotoxic neurodegeneration in the spastic Han-Wistar rat," was presented by five undergraduates: **Jorge Iniguez**, **April Ochoa**, **Delilah Toledo**, **Adi Frimerman**, and **Pamela Villaseñor**. Jorge and April are RISE fellows, Pamela is a MARC fellow. Dr. Cohen was co-author on both papers.

Two students working with Dr. Steve Dudgeon presented their research at the Western Society of Naturalists meeting in Monterey. **Janna Fierst** gave an oral presentation entitled, "Spatial and temporal distribution of life history variants in the red alga, *Mastocarpus papillatus*." **Casey Terhorst's** poster presentation was entitled "Alternative stable states in marine fouling communities." **Kylla Benes**, another of Dr. Dudgeon's students, attended the meetings.

Top Bio Students Honored

Each year the Department of Biology recognizes its outstanding students, both graduate and undergraduate, at a special ceremony in the Botanic Garden preceding commencement. In addition, awardees receive monetary prizes and have their names added to plaques in the office of the Department of Biology.

Named Outstanding Biology Student for 2002 was graduating senior, **Mahboubeh Azarmnia**. The award for Outstanding Biology Graduate Student was shared by two students that the faculty judged equally deserving: **Josephine Allen** and **Sarah Kimball**. Similarly, **Greg Fox** and **Michael Brewer** shared the Bennett-Bickford Award, an honor reserved for top-notch students planning to enter a teaching career.

Biology students also were among those recognized by the College of Science and Mathematics. The College's Donald E. Bianchi Undergraduate Award went to **Ivette Estay** and the comparable graduate award to **Sarah Kimball**. Biology gradu-

ate student **Jaime Lopez** received a new College-level prize, the Heald Graduate Scholar Award.

Students Earn Fellowships, Honors, Awards, Grants

Jacqueline Padilla-Gamiño has received a prestigious Fulbright Scholarship to support her graduate research. Jacqueline, a graduate of the Autonomous University of Baja California with a major in oceanography, works with Dr. Robert Carpenter. She is studying seaweeds in an attempt to understand how temperature acclimation is related to the ability of some species to invade new habitats. Jacqueline became aware of Cal State Northridge's marine program via a Cornell University field course in Akumal, Mexico, where she was a student and later a teaching assistant. It was there that she met Drs. Peter Edmunds and John Bruno, the latter a former graduate student at Northridge and now a faculty member at the University of North Carolina, Chapel Hill. Jacqueline plans to obtain a Ph.D. and then return to Mexico to promote environmental protection and education.

Three graduate students working with Dr. Robert Espinoza have been awarded grants to support their research. **Diana Andres**, **Kamelia Fallahpour**, and **Jennifer Weist** each received \$1000 from the Cal State Northridge Graduate Thesis, Project or Performance Support Program. In addition, Diana received \$500 as a Grant-in-Aid of Research from the Sigma Xi Society, and Kamelia and Jennifer garnered \$940 and \$1065, respectively, from the University's Student Projects Committee. Diana studies "Diet switching as a mechanism for the evolution of herbivory in lizards." Kamelia is looking at the "Effects of female breeding coloration on the behavior and mate selection of leopard lizards, *Gambelia wislizenii*." Jennifer, who studies the western banded gecko, *Coleonyx variegatus*, is interested in the effects of microhabitat and social aspects of diurnal aggregations.

Don Reeder, an undergraduate student in Dr. Cohen's lab, was awarded \$2000 from the University Corporation to fund his research on the neuroprotective role of nitric oxide on epileptogenesis.

Casey Terhorst, a graduate student working with Dr. Steve Dudgeon, received a grant of \$1000 from the Office

of Graduate Research and International Programs. The funds will support his research on alternative community states in marine fouling communities.

In fall semester, **Gabriele Meyer**, an undergraduate, won Second Prize for her poster presentation at the University's Student Research and Creative Arts Symposium. The title of her poster was "Loss of the *AccD* gene in monocot evolution." Gabriele works in Dr. Virginia Vandergon's lab.

Faculty Publish, Present Results of their Research

Dr. Aida Metzberg and Boston University colleagues J. Milunsky and T. Maher published a paper in the *American Journal of Medical Genetics*. The paper's title is "Molecular, biochemical, and phenotypic analysis of a hemizygous male with a severe atypical phenotype for X-linked dominant Conradi-Hunermann-Happle syndrome and a mutation in EBP."

Dr. Michael Summers is co-author of a paper that appeared in the December issue of the *Archives of Microbiology*. The work, entitled "Cellular differentiation in the cyanobacterium *Nostoc punctiforme*," is co-authored by J. C. Meeks, E. L. Campbell and F. C. Wong, all from a collaborating laboratory at UC Davis.

A paper by **Dr. Robert Espinoza** has appeared in a recent issue of *Herpetologica*. The paper, entitled "Two new species of *Liolaemus* lizards from northwestern Argentina: Speciation within the northern subclade of the *elongatus* group (Iguania: Liolaemidae)," was co-authored by F. Lobo of the Universidad Nacional de Salta, Argentina.

Dr. David Gray presented a poster on his research at the 2002 Entomological Society of America Annual Meeting in Ft. Lauderdale, Florida. The title of the paper was "Efficacy of courtship as a pre-zygotic isolating mechanism in crickets."

Dr. Steve Dudgeon presented a talk on his research at the November meeting of the Western Society of Naturalists in Monterey. His paper was on the subject of, "The when, where and why of alternative stable states in marine rocky intertidal landscapes."

Dr. Robert Espinoza presented a paper entitled "Herbivory imposes constraints on

the life-history strategies of reptiles" at the 2003 meeting of the Society for Integrative and Comparative Biology. Co-authors on the work were K. Dean-Bradley and C. R. Tracy of the U.S. Geological Survey in Ft. Collins, Colorado and the University of Nevada, Reno, respectively.

Biology Faculty Garner Grants and Awards

Dr. Robert Carpenter received a 4-year grant from the National Science Foundation's Division of Ocean Sciences totaling over \$500,000. The project, entitled, "Scale-dependence of flow effects on coral reef primary production," will be conducted at the University of Hawaii's marine laboratory on Coconut Island. The grant, with funds to support a postdoctoral researcher and several graduate and undergraduate students, will allow Dr. Carpenter to test hypotheses about how water motion enhances the production of coral reefs, one of the most productive ecosystems on earth. The new project complements Professor Carpenter's research on Santa Catalina Island where he studies how hydrodynamics affects the form and ecology of macroalgae in kelp forests and coral reefs. He is aided in that NIH-MBRS-SCORE-funded project by **Dr. Loretta Roberson**, a postdoctoral researcher and a recent graduate of Stanford University's doctoral program. She is also an alumnus of the Department of Biology at Cal State Northridge where she was a MARC student.

The National Science Foundation has awarded **Dr. Michael Summers** an additional \$99,386, bringing total funding for the first three years of his 5-year CAREER grant to \$307,464. Funds for the grant, the first of its kind to be awarded to a Cal State University professor, provide research materials and supplies for three graduate students aiding Dr. Summers's study of the "Routes and regulation of cyanobacterial carbon catabolism."

The Eisenhower Program of the California Postsecondary Education Commission has funded a grant of \$278,294 to support a program entitled "Los Angeles Superfunded science leader initiative at CSUN." **Drs. Steve Oppenheimer** and **Virginia Vandergon** share leadership roles in the program with Professors

Gerry Simila (Geology) and Norm Herr (Secondary Education) and with Reseda High School teacher Tony Recalde. K-12 teachers selected to participate in the program will learn research methodology by working directly with science professors in their labs. Under the guidance of Biology professors and using California's science standards as a framework, the teachers will be trained in workshops and will work cooperatively with many prospective teachers from among this University's students to develop science activities for middle-school students.

The Regents of the University of California have awarded a \$127,052 grant to support the "San Fernando Valley Science Project," a program that provides K-12 teachers with science standards-based workshops. Authors of the grant were **Drs. Steven Oppenheimer** and **Virginia Vandergon** of Biology, **Dr. Edward Carroll Jr.**, a Biology Professor who also is Dean of the College of Science and Mathematics, and **Dr. Gerry Simila** of the Geology Department.

Tropical Biology Students off to Costa Rican Jungle

The new Tropical Biology Semester is under way and its students and faculty are preparing for an early March departure for a five-and-a-half-week research expedition to the ecosystems of Costa Rica. While in that small, Central American country, the students will conduct individual and group research projects in the tropical forests of several national parks and biological stations. "The Costa Rican field experiences are guaranteed to be interesting as well as thrilling and challenging," says **Dr. Jennifer Matos**, one of three program instructors.

The Tropical Biology students have spent the first five weeks of the semester on campus where they received intensive instruction about tropical organisms, ecological and evolutionary processes, and research methods. Says **Dr. Fritz Hertel**, another course instructor, "Having been together in classes for 27 hours each week we have already gotten to know each other quite well."

In the final few weeks of the spring semester, after the group returns to

—see Tropical, page 5—

Bios invites articles written by students about their personal "biological experiences." Interested students are encouraged to consult with the editors regarding their ideas.

About the student author: **Michael Brewer** is a graduate student working with **Dr. Fritz Hertel**. **Keri Silva** and **Ivette Estay** are undergraduates who work with **Dr. Maria Elena Zavala**. Both are MARC students.

In Search of Boobies: A South American Adventure

— by Michael Brewer

Last spring, I was lucky enough to accompany my advisor (Dr. Fritz Hertel) to Johnston Atoll, a remote locality in the eastern tropical Pacific that is home to twelve species of breeding seabirds. It was here that we gathered the initial data for my Master's thesis. The idea was to study wing morphology as it relates to differences in foraging ecology and flight capabilities of several seabirds related to the pelican—three kinds of boobies, a frigatebird, and a tropicbird—birds that most people rarely get to see. We took digital photos and collected data on the birds' body mass, wing dimensions, and beak morphology. It was a great introduction to field biology!

Dr. Hertel also invited me to accompany him on another three-week expedition during winter break, this time to explore a remote island off the coast of Chile. For this trip, we targeted the elusive Peruvian Booby, another seabird found only along the Pacific coast of South America. This was a true reconnaissance trip, for we weren't sure if the birds even lived on the island, let alone if they nested there or if we could access their nests on steep cliffs. But, after a year of taking Dr. Hertel's courses and being in his lab, I understood that he often organizes his field research in this manner. Consequently, I packed my bags and an extra large first aid kit and headed for South America.

Several major factors had to be overcome if this trip was to be a success. The first was the isolated environment where these birds are found: uninhabited offshore islands. Once in Chile, we drove several hours on rugged dirt roads to reach a small fishing village on the coast. Then,

we had to find a way to the island. With few options, we simply knocked on the door of a fisherman's cottage and negotiated an arrangement whereby he would take us to the island, approximately 16 miles off the coast, and retrieve us several days later. Since the seas in this area are unpredictable and can easily keep fishermen in port for days at a time, we packed extra water and hoped the weather would stay calm enough for us to be picked up in a timely manner. At first light we loaded a small 12-foot boat and were off to the island. As we traveled we saw many seabirds, among them petrels, shearwaters and albatrosses, as well as sea turtles, whales, and sea lions. And, to our excitement, as we approached the island we saw numerous Peruvian Boobies, the birds we had come to study.

Reaching the island after a four-hour ride we realized that finding a place to land the boat was almost impossible. The island's northern face was composed of cliffs up to 70 feet tall, its southern side of rocky shores with a strong surge. We split the difference and while one of the fishermen used oars to prevent our crashing on the rocks, we began to throw our gear onto the rocks and then jumped from the boat, nearly losing 60+ pounds of climbing gear in the process. It was at this point that I realized the draw of being a field biologist: fascinating remote locations and the unpredictability of the environment!

After making camp, we set out to find the best locations to capture the birds and determine how to go about it. The Peruvian Booby is one of the few booby species that nests on cliffs so we were prepared to repel down the cliffs to gain access to the birds. Generally, nesting boobies are relatively easy to capture because they stay on the nest to protect their eggs and chicks. But a brief survey quickly revealed that the many birds perched on the cliffs were not nesting. Fearing that we would be unable to capture any birds, we headed for several large rock outcroppings near the center of the island. There, to our pleasant surprise, we found five breeding colonies nesting on the bare rock of the island flats, a perfect place for us to collect our data. After several days of dodging the birds' sawtoothed beaks and nights huddling together to fend off vampire bats, we emerged with a very

substantial database. On our last day on the island, I used the guise of repelling down the cliffs to investigate nest morphology as an excuse to explore some deep caves at the base of many of the cliffs. (The fact that I had lugged the climbing gear 4500 miles for no reason had nothing to do with it!) In these caves I found sea lion skulls, whale bones and penguin nests almost everywhere. I also found two caves that served as lairs for the vampire bats that buzzed our camp at night.

All in all, the trip to Chile was a magnificent experience, one I won't soon forget. If you are at all interested in field biology and have the opportunity to make a similar excursion, I highly recommend that you take it! If you are actively looking for such an opportunity, I recommend taking any of the many organismal and ecology courses offered through Cal State Northridge's Biology Department.

Two Summers of Research: Priceless!

— by Keri Silva and Ivette Estay

Keri's thoughts:

I'm definitely a homebody, so participating in a summer program that required me to go beyond a twenty-mile radius of Cal State Northridge seemed incomprehensible. But as a MARC student, I had no choice. One of the requirements of all MARC participants is to spend a summer doing research at another institution. With summer fast approaching, the pressure was on to leave town, and I was feeling it!

Following the advice of my mentor, Dr. Maria Elena Zavala, I applied to UC San Diego's summer program and was accepted. Then, in June following my junior year I found myself packing my bags and heading south. But in my mind I knew I wasn't just taking a trip. I was also headed in a direction that would advance my undergraduate career and perhaps change the direction of my life.

For my first summer experience, I chose a lab that suited my biology and chemistry background and two years of research experience in chemistry Professor Sandra Jewett's lab. As soon as I arrived, I was given a research project that involved analysis of ribosomal proteins and put to work. Along with other program participants from other institutions, I put in a 35-

hour workweek at the lab. But in addition to my research, I participated in scientific workshops where I learned how scientists work and think, and how to go about applying to graduate school. And in the end I presented my research in the summer program's symposium. But it wasn't all work. I also had time on weekends and in the evenings to play, to enjoy the beach and, as it turned out, to make many new friends.

Until my experience at UCSD, I didn't know if I really wanted to obtain a Ph.D. I certainly enjoyed the freedom of research and the rewards reaped at the end when a problem was solved, a question answered. But, was a career in research really for me? I just didn't know. A second summer internship this past summer gave me another opportunity to evaluate my feelings.

Less fearful of leaving home, this time I elected to go to Virginia Tech, a beautiful university nestled in the lush green rolling hills of the South. There, as I had in San Diego, I spent the days working in a research lab, advancing my knowledge and skills in molecular biology, my field of interest. But I also found time to experience a whole new culture, to make many new friends, and to just have fun. I wouldn't trade the experience for the world! In many ways the "summer programs" might just as well be dubbed "summer vacations!" I learned, but I had fun doing it.

Now, I find myself committed to a career in research and am preparing to apply to graduate school for fall 2003. There is no question that my two summer experiences have served me well. Not only will they look good on my application, I will use what I learned from them to identify a graduate school, a program and a major professor that suit me personally. It was time well spent!

Ivette's thoughts:

When it comes to applying for graduate school, a summer research experience can be a very valuable asset. If you are serious about graduate work, be equally serious about selecting the summer program that is right for you. As a summer research program alumna at two universities, Harvard and Stanford, I thought I'd offer some pointers on what worked for me.

1) First, since your ultimate goal is

graduate school, keep that foremost in your mind. Then, as you check out the summer programs, constantly ask yourself—Which summer program will best improve my graduate application? With that in mind, I highly recommend that you begin your search for a summer program by checking out graduate programs that interest you. Not only will this help you identify a summer program that best benefits you, but it will save you loads of time when graduate application season arrives. You will already have done your homework!

2) If your "dream" graduate school has a summer program, you have an obvious choice. Here's your opportunity to get to know your "dream" school and its environment, to check it out, to meet faculty and students, to find out if it really is for you.

3) All else being equal, pick the institution with the highest ranking in the academic pecking order! Not only do high-ranking institutions typically have top-notch programs but a letter of recommendation from a faculty member at such an institution will definitely improve your graduate application, especially if you are applying to that institution! Upon completion of summer research programs, faculty expect their students to request letters of recommendation and willingly write them.

4) Every successful applicant to graduate programs must first define his or her weaknesses. If GREs are a problem, look for a summer research program that includes a GRE workshop. Many do, including UC San Diego.

5) Applications to summer programs require most of the same materials that graduate applications do, hence are good practice. You'll need letters of recommendation, a research summary, a personal statement, and the like. Treat it as a learning opportunity, because it is!

6) Summer programs provide a marvelous forum for networking with faculty and graduate students. Use the opportunity to its fullest. You never know when a contact will make the difference in getting you into a program or even a job. Spend time schmoozing!

7) Summer participants in research programs are expected to present their work at a symposium and/or poster presentation. Take this seriously, for it is your opportunity to show your abilities to best

advantage. It's also another chance to get to know people, often important people, in your chosen field.

There is absolutely no doubt that my summer research experiences at Harvard and Stanford provided me with excellent training and a wealth of academic experiences. But, the experiences would not have been nearly so beneficial without the friendships I formed with the many other phenomenal summer program students. In summary:

Airline ticket to dream school...\$0,
summer lodging...\$0, summer research
program experience...priceless!

—Tropical, con't from page 3—

Northridge, the students will present their research findings in a poster session. "The entire campus community is invited to attend, so keep an eye out for the announcements," says **Dr. Paula Schiffman**, the other member of the professorial trio.

Cal State Northridge's Tropical Biology Semester is unlike any other instructional program in the CSU system. All students in the program enroll simultaneously in three courses—Tropical Botany, Tropical Ecology and Conservation, Biology of Tropical Vertebrates—and a special seminar, for which they receive a total of 18 units of credit. Because of its uniqueness, the program has attracted three students from other campuses—**Andrea Hines** (Chico), **Jessica Lee** (Pomona), and **Kyla Puklus** (San Luis Obispo)—in addition to five Northridge Biology students, **Diana Andres**, **Michael Brewer**, **Matthew Danielczyk**, **Kammy Fallahpour**, and **Ray Hernandez**.

It is anticipated that the program will be offered in spring semester of odd-numbered years. Look for it again in 2005.

Biology Department Welcomes New Instructors

Short of full-time instructors, and in the process of searching for three new ones, the Department of Biology depends heavily on part-time instructors with needed expertise and willing to help out. This semester, six new instructors, most already affiliated with other universities or colleges, have taken on the challenge of providing quality instruction that will enable

our students to get the classes they need.

Two of the new instructors earned their Master's degrees at Cal State Northridge. **Ms. Kathy Blazer**, a Genetic Counselor, is part of a team teaching Clinical Cytology to Genetic Counseling students. **Ms. Kim Jesu**, adjunct professor at College of the Canyons and Oxnard College, teaches General Biology (Biology 101) and Embryology lab.

Also joining us this year are **Drs. Shannon Lee, Tom Odger, Kent Robbins** and **Bruce Yazejian**. Dr. Lee, a product of UCLA and still affiliated with that institution, teaches Principles of Biology I (BIOL 106). Dr. Yazejian, a neurobiologist who currently teaches at Loyola Marymount University, instructs Cell Biology. Both Drs. Odger and Robbins teach Human Physiology. Dr. Odger, a physiology specialist, is affiliated with Moorpark College. Dr. Robbins holds an MD from Hahnemann University School of Medicine.

Faculty Serve Beyond Campus

Dr. Michael Summers was appointed as a Cal State Northridge representative to the CSUPERB (California State University Program for Education and Research in Biotechnology) Faculty Consensus Group. In this capacity, his primary role will be to bring research and funding opportunities offered through CSUPERB to the attention of his colleagues, many of whom are already the beneficiaries of CSUPERB grant funds. The organization's grant programs offer grants to support travel, teaching and research of both faculty and students. More information is available at the CSUPERB website, <http://www.csuchico.edu/csuperb>.

Dr. Steve Oppenheimer has been appointed to the Editorial Board of the international journal *Acta histochemica*.

Dr. Robert Espinoza serves several learned societies in a variety of capacities. Currently, he is an Associate Editor for *Herpetological Review*, a publication of the Society for the Study of Amphibians and Reptiles. He is also a member of the Gaige Award Committee, the group that judges student grant proposals for the American Society of Ichthyologists and Herpetologists. For the Society for Inte-

News about the MARC, MBRS, Bridges-to-the-doctorate Program

Bridges-to-doctorate Applicants Sought

An extension of the "CSUN Bridges-to-the-doctorate" program has been requested from NIH. The program's purpose is to aid underrepresented minorities first to obtain a Master's degree at Cal State Northridge and then to move on to a Ph.D.-granting institution. The funding will support students pursuing a Master's at \$14,200 per year (plus travel, tuition, and materials).

In anticipation of continued funding, applicants with the ultimate goal of a Ph.D. in the biomedical sciences or related fields are encouraged to contact the MARC/MBRS/Bridges office for information (Science 2128 or 818-677-4981).

Deadline for applying to the Biology Master's program for fall 2003 admission is March 15. Applications for the Bridges Program will be accepted anytime this spring.

MARC Invitations Near

"Invitations to students eligible for the MARC program will be mailed shortly," says Dr. Maria Elena Zavala, director of the MARC and MBRS programs. Students accepted to the program are mentored and are supported financially with a monthly stipend, tuition, travel expenses, and research funds.

The National Institutes of Health-funded MARC program supports academically qualified minority undergraduates in the sciences. "If you have a 3.0 GPA, have completed 60 units, are two years from graduation and a member of an ethnic group that is considered underrepresented by the NIH, do consider applying," says Dr. Zavala.

MBRS Students to Visit UC

During spring break graduate participants in the MBRS RISE program will travel to various UC campuses. There they will visit graduate offices and talk with faculty and students in programs they are considering. NIH sponsors these activities.

Program Alumni Succeed

Former MARC students continue to bring acclaim to Cal State Northridge. Those

who have completed their doctorates include **Patricia Mora**, who completed her Ph.D. at UCLA last spring. Dr. Mora was a lecturer in the Cal State Northridge Biology Department in the fall 2002 semester. **Dr. Loretta Roberson**, a former MARC student, has also returned and is conducting post-doctoral research in Dr. Robert Carpenter's lab. Two others, **Drs. Eric Villegas** and **Kamilah Ali**, are also doing post-doctoral research at UC Berkeley and Yale University, respectively.

Other former members of Cal State Northridge programs are actively engaged in doctoral programs. **Josephine Allen** is in a doctoral program at Northwestern University and **Dang Huynh**, a former MARC and Bridges-to-the-doctorate student is in the Bioinformatics Program at Yale University.

Students Accepted to, Consider Ph.D. Programs

According to **Dr. Maria Elena Zavala**, director of the MARC, MBRS and Bridges-to-the-doctorate programs, three program participants—**Ivette Estay**, **Mabel Gonzales** and **Leticia Carrillo**—already have been accepted to Ph.D. programs this year. "In addition," says Dr. Zavala, "prospects for the other applicants are bright. Almost all program participants who have applied to doctoral programs have been invited for at least one interview. Some have more than five."

Summer Opportunities Available for Students

Says Dr. Zavala, "There is a 'ton' of information on summer programs available in the MARC/MBRS/Bridges office." Most of the programs offer paid internships and research opportunities across the USA.

Application deadlines vary, from January 10 to March 30, as do program requirements. Many programs solicit students a year or more from graduation.

All students are invited to stop in the office (Science 2128) and check out program information. "There's something here for virtually everyone who wants to learn during the summer," says Dr. Zavala.

grative and Comparative Biology he wears two hats: He is chair of the Membership Diversity Committee and he recently served as a Judge of student papers in the Division of Ecology and Evolution. In the past year Dr. Espinoza gave invited presentations on his research about herbivory in reptiles at UC, Irvine and at California State University, Long Beach.

Faculty Invite Students To Work in Their Labs

Dr. Steve Oppenheimer has room for students interested in aiding him in his research. Dr. Oppenheimer works on cancer and developmental biology. He can be found in his Science 2 basement lab, room 2005 or reached by email at: steven.oppenheimer@csun.edu. Dr. Oppenheimer is a Fellow of the American Association for the Advancement of Science and with his students has published about 200 papers and abstracts.

Dr. Michael Summers is seeking talented and energetic students, both graduate and undergraduate, to aid him in his studies of genetic and physiological changes during development of spore-like akinetes in the cyanobacterium *Nostoc punctiforme*. His work is supported by an NIH-SCORE grant. A background in microbiology is preferred.

Dr. Maria Elena Zavala is always looking for hardworking students to join her research program. To qualify, students should have completed at least one semester of organic chemistry and cell biology. Dr. Zavala studies the regulation of root development in plants.

Dr. Cheryl Hogue is looking for hardworking students to aid her in her research on fish parasites. She can be contacted by email at cheryl.hogue@csun.edu.

Oppenheimer Endowment Funds Student Awards

Dr. Steve Oppenheimer and his wife, Carolyn, have generously donated \$10,000 to establish an endowment that will fund two new student awards in the sciences. The awards, named in honor of Dr. Oppenheimer's parents, will be called *The Hugo and Irma Oppenheimer Awards for Excellence in Research and*

Teaching Promise. Each year one award will go to an outstanding Biology student and a second will honor an outstanding student in the College of Science and Mathematics. Both awardees will be recognized at commencement and will have their names entered on permanent plaques posted in the Biology Office and in the Office of the College of Science and Mathematics.

Although established by the Oppenheimers, many others have contributed to the Endowment. Others wishing to contribute towards the awards may send their contributions, made payable to the Cal State Northridge Foundation, to the Director of Development, College of Science and Mathematics, California State

University, Northridge, CA 91330-8238. To assure that the funds go to the proper account, the notation "Hugo and Irma Oppenheimer Awards" should be cited on the face of the check. Contributions are tax deductible.

Fall Semester Courses

Dr. Paula Schiffman will teach **Conservation Biology** (BIOL 533/592C), a new course that replaces Biological Conservation (BIOL 328). The course will focus on the application of ecological and evolutionary principles to problems in environmental biology, with particular attention to factors affecting biodiversity and the causes of species extinction. The course fulfills the

NOTES FROM THE ADVISEMENT CENTER

Advisement Center hours

"Students are invited to stop by the Biology Advisement Center (Science 2133) to have academic questions answered," says **Dr. John Kontogiannis**, Biology's faculty advisor. Dr. Kontogiannis is assisted this semester by graduate students **Diana Andres, Kamelia Fallapour, Melina Gregorian, and Sahar Sajadi**.

All student advisors are well-trained and knowledgeable of University procedures, thanks to the efforts of **Dr. Joyce Maxwell**. Dr. Maxwell, working under the auspices of the MARC/MBRS programs, is responsible for keeping the advisors aware of new rules and procedures.

The Center is open 28 hours per week; hours are posted on the door.

Plan to graduate in 2004? File "Application for Bachelor's Degree & Diploma" now!

Undergraduates expecting to graduate spring or summer 2004 must file an "Application for Bachelor's Degree and Diploma" form no later than May 2, 2003. Application Forms for Biology students must be completed at the Biology Advisement Center and signed by an advisor.

According to Dr. Kontogiannis, "Admissions and Records no longer sends students a special evaluation. Instead, they send a DARS Graduation Evaluation which reflects courses taken

at Cal State Northridge, courses substitution and/or waivers, exceptions granted through the University's petition process and transfer course work."

Says Dr. Maxwell, "It is highly recommended that each student obtain a DARS report at the end of each semester and examine it for deficiencies in G.E. and Major requirements, as well as other requirements established by the University. Doing so can prevent surprises that might delay graduation."

Upper-division writing exam, a must for graduation

Students expecting to graduate must attempt the Upper Division Writing Proficiency Exam no later than the semester in which they have completed 90 units. Students planning to graduate in this year (spring '03) must pass the exam no later than April 26. For more information call the Testing Office at 677-3303.

Accessing advisement info

A free Biology Advisement Handbook provides invaluable information on program requirements and course equivalencies. The handbook can be obtained in the Advisement Center or downloaded from 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.

Ecology/Environmental Biology requirement for the B.A., counts as an ecology course for the Environmental Biology B.S. and can be used as an elective for the Marine Biology B.S. Evolutionary Biology (BIOL 322) is a prerequisite; students who have completed BIOL 328 should not enroll.

Plant Morphology (BIOL 403) will be offered on Saturdays in fall. Says **Dr. Paul Wilson**, course instructor, "This is a class on sexual variety in the land plants. We study mosses, ferns, conifers, flowering plants, and everything in between. The class is ideal for those planning a career in teaching high school biology, as well as those who just think plants are beautiful. In addition to learning the methods of comparative biology, we'll be spending a lot of time with reproductive biology." The class will have several field trips. The all-day format makes taking field trips much easier than during a typical 3-hour lab.

Graduate students will have a choice of three graduate seminars planned for fall semester.

Dr. Paul Tomasek will offer a seminar on "**Symbiotic relationships with microorganisms**" (BIOL 655A). Says Dr. Tomasek, "The seminar will focus on the interesting and diverse array of symbiotic relationships between microorganisms and higher organisms and microbe-microbe interactions." For information, contact Dr. Tomasek via email at paul.tomasek@csun.edu.

Dr. Paula Schiffman will lead a seminar focusing on the "**Evolution of ecological understanding**" (BIOL 615C). "The point of this seminar will be to put our modern understanding of ecology into a larger informational context," says Dr. Schiffman. Students enrolled in the seminar will read and discuss classic twentieth century ecological papers and will make linkages to the research findings and ideas in recent literature. Students who enroll in this course should have a solid background in ecology.

Dr. David Gray plans to offer a seminar entitled "**Sex and evolution**" (BIOL 615F). "The seminar will address the evolutionary mystery of sexual reproduction and its consequences for organismal evolution and speciation," says Dr. Gray. Most likely, the course will be taught on Wednesday evenings, 6:00 to 9:00.

Student Earns Honors; Program Seeks Students

Graduating senior **Ivette Estay** earned Honors in Biology at graduation, the only Biology student to do so in 2002. To earn Honors in Biology she maintained a GPA of 3.5 or better, completed a research project and wrote a Senior Thesis. Ivette's senior thesis, embodying her research efforts, was entitled "The effects of plant phenolic compounds on Cyclin D transcripts." Dr. Maria Elena Zavala supervised her research.

Says Dr. Rheem Medh, Director of the Biology Honors program, "The Biology program is a great way for undergraduates to obtain research experience. Not only will they learn what research is all about, they will enhance their academic careers and be better prepared for graduate or professional school."

Students who complete the program are recognized at a ceremony during commencement week, receive a special certificate and have a special notation on their transcripts.

To be considered for the program, an applicant must have completed 90 units of college-level work, have a GPA of 3.50 in the major and overall, and have a faculty sponsor. If interested, contact Dr. Hogue at cheryl.hogue@csun.edu or by phone at 677-3349.

Students Needed to Help Organize Cancer Course

Dr. **Steve Oppenheimer** is seeking students to help organize his Biology of Cancer course for fall. Interested students should email Professor Oppenheimer at steven.oppenheimer@csun.edu. The class is tentatively scheduled for Monday evenings, 6:00 to 7:40.

Biology Alumni News

After defending their theses, three graduate students in Dr. Michael Summers's lab have moved on. **Kamile Yuksek** is in a Ph.D. program at USC, **Kimberly Ashe** is working at Amgen in sequence analysis, and **David Choe** is in Medical School at Loma Linda.

Student Organizations

Biology Graduate Student Association (BGSA)

The BGSA is organizing for the spring semester and beyond. BGSA has received funds for this semester to bring a distinguished visiting speaker, Dr. Mark Hay of Georgia Tech University, to campus.

Dr. Hay will speak on Friday, April 4, on "The cascading effects of seaweed chemical defenses on the ecology and evolution of coral reef communities." Most likely the talk will be at 11 AM, but details of the time and location will be announced later. This special seminar is in addition to the regular Friday colloquium, so look for an announcement of the location and time.

Microbiology Student Association (MSA)

The MSA elected new officers this fall. The newly elected officers are: Raquel Martinez, President; Denise Bell, Vice President; Natalie Chikhani, Treasurer; and Emerald Yu, Secretary.

During the fall semester, MSA sponsored a talk about resume writing and how to get a job in microbiology. Representatives of Aerotech presented the talk.

For spring 2003, MSA has invited criminalist Mary Keens as a guest speaker. Ms. Keens, a graduate of this department, works for the LA County Sheriff's Department. The organization is also planning another of its annual winery tours. All interested students and faculty are invited to participate!

Other events are in the planning stages. Suggestions are welcomed. Be on the lookout for upcoming events and feel free to check out the group's updated picture board in the second floor hallway of Science 4.

The Cal State Northridge MSA is a recognized student chapter of the national organization, The American Society for Microbiology. Membership is open to any student interested in microbiology. For more information, contact one of the student officers or one of the organization's faculty advisors, **Drs. Nancy Bishop** and **Paul Tomasek**.