

# FIU BioNews

The Newsletter of the Department of Biological Sciences at Florida International University

Available on the web at [www.fiu.edu/~biology/BioNews](http://www.fiu.edu/~biology/BioNews)

Volume 5

Spring 2009

## FEATURE STORY

### Four New Biological Sciences Faculty!

**Despite layoffs, shuttered degree programs, and budget shortfalls that could reach over \$35 million The Department of Biological Sciences was fortunate to bring in four new, highly qualified faculty over the last two semesters, including two marine biologists, a virologist and an aquatic ecosystems specialist. Meet our new faculty members.**

**Dr. Deron Burkepile** (upper left) specializes in consumer-prey interactions and their effects on community organization. His Ph.D. thesis on the relationship between species richness of marine herbivorous fishes and its effects on seaweed abundance and diversity was completed in 2006 with Mark Hay at Georgia Institute of Technology. Subsequently, Deron embarked on a postdoc at Yale University where he began an examination of terrestrial ecosystems (African savanna grasslands and North American prairie grass) and how they are structured by herbivore size. Deron came to us last Fall and resides at the Biscayne Bay Campus as part of our Marine Biology Program.

**Dr. Jim Heffernan** (upper right) is an ecosystems ecologist specializing in wetlands. He is especially interested in the effects of natural and anthropogenic disturbances on hydrology and the resultant changes in system dynamics, including biogeochemical patterns and the fate of nutrients. His model systems include the Florida Everglades and its peatlands. Jim received his BA from Cornell, and his Ph.D from Arizona State University in 2007. Following a postdoctoral appointment at the University of Florida's School of Forestry Resources and Conservation, he joined the faculty in Biology and SERC in January, 2009.



After receiving separate bachelor's degrees in chemistry and microbiology, **Dr. Ken Murray** (lower left) completed his Ph.D. thesis investigating the mechanisms of polio virus RNA replication and regulation of the viral gene expression at the University of Colorado in 2003 with David Barton. During several postdoctoral posts, Ken became interested in double stranded DNA viruses, especially members of the family Reoviridae and Birnaviridae, which affect vertebrates including humans. His studies focus on viral gene expression and the interactions between virus and host during viral replication. Ken joined the faculty in the Fall of 2008.

**Dr. Rebecca Vega-Thurber** (lower right) is the newest addition to the growing Marine Biology faculty at Biscayne Bay Campus and arrived this Spring, 2009. Becky earned undergraduate degrees in both marine biology and cellular-molecular biology

at UC Santa Cruz and went on to get her Ph.D. with David Epel at Stanford University in 2005. Beginning with a postdoctoral post at San Diego State University, her research focused on the use of metagenomics to investigate the ecology and physiology of microbial and viral communities. This has taken her to examine viruses that infect corals, which appear to be unlike anything discovered previously, but are most closely related to herpes viruses. Her work will focus on how these infections affect coral health and resilience to environmental change.

### MIGRATIONS and PROMOTIONS

The new College of Medicine (COM) is due to open this Fall and some of our faculty have made a new home for themselves there. Associate Professor KALAI MATHEE, a specialist in pathogenic microbiology, came to the department in 1999 and had a very successful career here both in terms of external funding and in departmental service. She is now Interim Chair of Molecular Microbiology and Immunology at COM. Professor RENE HERERRA came to the department in 1987 as an assistant professor of genetics, specializing in human genetics and molecular evolution. As of last term, Rene became a member of the Department of Molecular and Human Genetics and serves as a member of the medical school admissions committee and will begin teaching medical genetics next Fall. Dr. BARBRA ROLLER served in the department since 1994 as an instructor and was the Director of the pre-Health Professions Advising Center in the college. She has since moved on to COM where she is Assistant Dean of Student Affairs. In the same year Dr. ROBERT GEORGE, a gifted forensic anatomist and artist, came to the department and served as instructor of Human Gross Anatomy. Dr. George has taken up residence at COM where he will continue as instructor of human anatomy. FERDINAND GOMEZ, Instructor and coordinator of human anatomy laboratories will also migrate to COM's Department of Cellular Biology and Pharmacology this year. Ferdie has been with the department since

2001 and will be responsible co-teaching with Bob George.

Professor MAUREEN DONNELLY is another veteran who arrived in our department in 1994, which was apparently a very good year for us. She is a notable and successful specialist in herpetology and served admirably as Graduate Program Director for the department from 2003 to 2005. In addition, she has won more university awards for just about everything than anyone else in the department including outstanding achievement in service (1998 and 2006), teaching (2000), research (2005), mentorship (2008), and has been nominated for Outstanding University Professor (2009). No, she has not gone to the College of Medicine, but has taken a position with the College of Arts and Sciences as Associate Dean for Graduate Studies. Despite full time administration Mo continues to advise eight graduate students and continues to be actively involved in departmental affairs.

Dr. LAURIE RICHARDSON was elected by the department to serve as its 10<sup>th</sup> chairperson (11<sup>th</sup> if we count Professor John Makemson who served two terms). This election moved Laurie from interim chair to a full four-year term.

Associate Professor MIKE HEITHAUS assumed the duties of Director of the Marine Science Program beginning this academic year after the able interim leadership of professor Joel Trexler. The Biscayne Bay Campus-based program includes faculty from the Departments of Biological Sciences and Chemistry, and specializes in the dynamics of coastal marine habitats. With a new building, a fleet of research vessels and more than 20 graduate students, the program is poised for considerable growth in teaching and research.

Congratulations are also due to Dr. TIM COLLINS whose promotion to full professor takes effect later this year. Tim's specialty is the application of molecular information to address questions of systematics and evolutionary biology, especially within the Mollusca.

## HE'S BAAACK

Professor DAVID LEE stepped down as chairperson of the department in August to take another administrative position as Director of the Kampong in Coconut Grove. The Kampong is a beautiful garden and was the retirement home of Dr. David Fairchild (of Fairchild Garden fame), and has been part of the National Botanical Garden since 1995. David kept a partial assignment at FIU, continued his teaching and finished his book *Nature's Palette, The Science of Plant Color* (University of Chicago Press), which was published with critical acclaim. But after a year of administration at the Kampong, David decided to return to FIU and we are happy he did. Welcome back, David.

## NEW STAFF

MS. WILHELMINA (Wilma) DAGDAG joined the department as our Administrative Assistant last November, a role very similar to the one she served in the Women's Studies Center since early 2001. Her multiple roles in Biology will include course scheduling, budget records, web and listserve support, SACS credentials documentation and other office functions. Wilma was born and raised in the Philippines where she obtained her Bachelor's degree



in Biology, but has embarked on a career in administration. We welcome Wilma to the Biological Sciences department.

## FORMER FACULTY AND STUDENTS

Dr. CHRIS BROWN, former director of the Marine Biology program is now Chief of the NOAA's Division of Aquaculture and Enhancement in Milford, Connecticut. Chris was recently awarded a \$400,000+ grant to study methods of shellfish planting and how their harvesting affects the benthic communities of coastal estuaries, and his laboratory has been selected as a National Center of Excellence in sustainable marine aquaculture.

Dr. DAN CHILDERS, a standout faculty member and head of a prestigious NSF Long Term Ecological Research Program of the Florida Everglades at FIU from 2000-2008 took a year off to become Program Officer at NSF's Division of Environmental Biology. He then moved on to the Arizona State University where he is now Associate Director for Research Development at ASU's Global Institute of Sustainability, an organization with a \$25 million endowment. BioNews believes that this makes him "Professor of Sustainability", suggesting that he will be at ASU for some time to come.

Dr. FRANK JOCHEM, a former member of the marine biology faculty has taken a position as Director of Aquaculture and Field Research with Algenol Biofuels in Palm Beach County, a privately owned company engaged in research and development using algae to produce ethanol. According to their forward-looking statements, Algenol intends to become the world's largest recycler of CO<sub>2</sub> using algal photosynthesis to create engine-combustible material while minimizing the use of fossil fuel-based fertilizer and conventional sources of fresh water.

Dr. GUANGPING GAO was our first Ph.D. student and was directed by MARTY TRACEY in the early

1990s. In 1994, Gao moved on to the University of Pennsylvania and quickly established a reputation as an innovator in the modification of adeno-associated viruses for gene therapy. Currently, Dr. Gao holds 20 patents, has published more than 100 papers, and is currently the founding director of the University of Massachusetts Medical School's Gene Therapy Center. Our first doctoral student has set a high standard of achievement and is a source of pride for our department.

Professor Emeritus LEON CUERVO was one of our first faculty members in the department, arriving in 1973. He became our 2<sup>nd</sup> chairman shortly thereafter and was a productive member of the faculty until he retired from full service in 2003. At that time he endowed the Marta Montiel de Cuervo prize for outstanding scholarship after his beloved late wife through the FIU Foundation. After a brief hiatus Leon returned as Biology Career Advisor, a post that gave him much satisfaction. Regrettably, BioNews has learned that Leon will not be returning to the University as of the current term due to health problems. All of who had the pleasure of knowing him as a colleague, friend and mentor will miss him deeply and we wish him all the best.

## GRADUATE STUDENT NEWS

### New Graduate Students

Thirteen students were newly admitted to the graduate program this last Fall (sponsors in parenthesis).

Emily Broderick (Laurie Richardson), Mark Clifton (F. Noriega), Meagan Dunphy-Daly and Philip Maitch (M. Heithaus), Monica Isola, Seiichi Murasaki and Kelsey Reider (M. Donnelly), Zachary Jud and Elizabeth Stoner (C. Layman), Monica Rodriguez (A. Barbieri), Vidya Sagar (S. Smith) and Adam Webb (T. Collins). Welcome to all!

### Defense of Dissertations and Theses

**L. Alice Warren-Bradley**, Ph.D. (advisor: Dr. Bradley Bennett) defended her dissertation entitled: "Demographic effects of thatch harvest and

implications for sustainable use of Irapai Palm (*Lepidocarpium tenue* Mart.) by riverine communities in the Peruvian Amazon" on September 26<sup>th</sup>.

**Flavia Carneiro Brito**, Ph.D. candidate (advisor: Dr. L. Kos) successfully defended her dissertation entitled: "Melanocytes in the developing and adult atrioventricular valves of the murine heart" on November 7<sup>th</sup>.

**Jeremy Moynihan**, Ph.D. candidate (advisor: Dr. J. Francisco Ortega) successfully defended his dissertation entitled: "*Dioon lindl.* (Zamiaceae): Perspectives from phylogeny and a population study of *D. edule*" on November 10<sup>th</sup>.

**Karen Laubengayer**, M.S. candidate (advisor: Dr. J. Francisco Ortega) successfully defended her thesis entitled: "*Aiphanes minima* (Gaertn.) Burret (Arecaceae): A morphological analysis of the Lesser Antillean Species Complex." on November 6<sup>th</sup>.

## Publications

Ph.D. candidate **Rudolph von May** (advisor: M. Donnelly) recently published the following three papers : Von May R., M. Medina-Müller, M.A. Donnelly, K. Summers. 2008. The tadpole of the bamboo-breeding poison frog *Ranitomeya biolat* (Anura: Dendrobatidae) *Zootaxa* 1857: 66-68.

•von May, R., and 27 others. 2008. Current state of conservation knowledge on threatened amphibian species in Peru. *Tropical Conservation Science* 1 :376-396.

•von May, R., K. Siu-Ting, J.M. Jacobs, M. Medina-Müller, G. Gagliardi, L.O. Rodríguez, and M.A. Donnelly. 2009. Species diversity and conservation status of amphibians in Madre de Dios, southern Peru. *Herpetological Conservation and Biology* 4(1): in press

Ph.D. candidate **Longin Kaczmarzky** (advisor: Dr. LL Richardson) co-authored the following paper: Sekar, R., L. Kaczmarzky and L.L. Richardson. 2008. Microbial community composition of black band disease on the coral host *Siderastrea siderea*

from three regions of the wider Caribbean. *Marine Ecology Progress Series* 362: 38-98.

Ph.D. candidate **Flavia C. Brito** (advisor: Dr. L. Kos) contributed the image that appeared on the journal cover and accompanied her paper: Brito, F.C. and L. Kos. 2008 Timeline and distribution of melanocyte precursors in the mouse heart. *Pigment Cell Melanoma Research* T21T:T464-470.T

Ph.D. candidate **Claude-Henry Volmar** (advisor: Dr. Ophelia Weeks) has recently co-authored the following papers: Ait-Ghezala G., Abdullah L., Volmar C.H., and 10 others 2008. Diagnostic Utility of APOE, soluble CD40, CD40L, and Ab<sub>1-40</sub> levels in plasma in Alzheimer's Disease. *Cytokine*. (In Press).

•Laporte V, Ait-Ghezala G, Volmar CH and 4 others. 2008. CD40 ligation mediates plaque-associated tau phosphorylation in beta-amyloid overproducing mice. *Brain Research* 1231: 132-142.

•And the following book chapter in collaboration with Ph.D. candidate Nikunj Patel, and Amita Quadros, Ph.D. 2007 (both advised by Dr. O. Weeks): Claude-Henry Volmar, Nikunj Patel, Amita Quadros, Daniel Paris, Michael Mullan (2008). An Introduction to Biological Systems. In: *Bioinformatics: A Concept-Based Introduction*. Editors: Venkatarajan Mathura and Pandjassarame Kanguane. Springer-Verlag New York, USA.

Ph.D. candidate **Mario Perez** (advisor: Dr. Fernando Noriega) has co-authored the following paper that was accepted for publication:

Mayoral, J.G, Nouzova, M., Yoshiyama, M., Shinoda, T., Hernandez-Martinez, S., Dolgih, E., Turjanski, A.G., Roitberg, A., Priestap, H., Perez, M., Mackenzie, L., Li, Y., and Noriega, F.G. (2008) Molecular and Functional characterization of a Juvenoid Methyltransferase expressed in the corpora allata of mosquitoes. *Insect Biochemistry and Molecular Biology* (In press).

Adriana Galvis, M.S. candidate (advisor: Dr. A. Barbieri) authored the following papers:

Galvis A, Giambini H, Villasana Z, Barbieri MA. 2009. Functional determinants of Ras interference 1 mutants required for their inhibitory activity on endocytosis. *Experimental Cell Research* in press.

•Galvis A, Balmaceda V, Giambini H, Conde A, Villasana Z, Fornes MW, Barbieri MA. 2009. Inhibition of early endosome fusion by Rab5-binding defective Ras interference 1 mutants. *Archives of Biochemistry and Biophysics* in press.

## Grants Awarded

**Meagan Dunphy-Daly**, Ph.D. candidate (major advisor: Dr. Michael Heithaus) was awarded a Young Explorers grant from the National Geographic Society's Committee for Research and Exploration in the amount of \$4,500.00 in support of her project "Trophic cascades in seagrass ecosystems and implications for conservation."

**Cassandra Quave**, Ph.D. (advisor: Dr. Bradley Bennett) was awarded the Ruth L. Kirschstein postdoctoral fellowship for her project, Anti-biofilm activity of white horehound extract in catheter-associated infection. The grant will cover her stipend, research and conference expenses for 3 years (2009-2011) at the University of Arkansas for Medical Sciences in Little Rock, Arkansas.

**Melissa Doud**, Ph.D. candidate (advisor: Dr. K. Mathee) received a \$1500 Cystic Fibrosis Foundation Student Training Grant for November 1 to Jan 31, 2009.

**Jay Munyon**, MS candidate (advisor: Dr. E. Gaiser) was awarded the SERC Christina Menendez Fellowship for \$5,000.

**Kristin Kuehl**, MS candidate (advisor: Dr. Laurie Richardson) received a \$64,000 EPA GRO fellowship for 2009 to study differences in susceptibility to black band disease in two species of *Diploria* corals in Bermuda.

**Please join the FIU community in recognizing and celebrating these accomplishments.**