

EVOLUTIONS

The University Of South Carolina Aiken
THE NEWSLETTER OF THE DEPARTMENT OF BIOLOGY AND GEOLOGY

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Welcome Dr. Michelle Vieyra



Dr. Michelle Vieyra feeds the lorikeets at Riverbanks Zoo

Dr. Michelle Vieyra, a new assistant professor in our department beginning January 2007, came by her interest in science honestly. Originally from Pasadena, California, her father was an engineer working for Boeing, and her mother was a docent at the Los Angeles Zoo and at the Eaton Canyon Nature Center. She grew up going to the zoo and became interested in animal behavior. When asked whether she had pets growing up, Dr. Vieyra

laughed and said, "Oh yes, I had just about everything! Dogs, cats, fish, snakes, lizards, turtles, hamsters, frogs...but reptiles and birds are my favorites." Her current pets are cockatiels Beaky and Henny, parrotlette Shrimp, and conure Scampi. She was president of the science club in high school and worked as a veterinary technician for four years before deciding that veterinary medicine was not for her. After two years of community college in California, she married her

high school sweetheart and they moved to South Dakota, where Marcos was stationed with the Air Force. She attended Black Hills State University while also working full time. She was originally majoring in psychology and sociology, but it was their biological aspects that interested her the most, so she started taking biology classes and ended up with a triple major before she was through.

Then followed the decisive factor in her career. One of her professors, who had done a post-doc at USC in Columbia, announced an NSF sponsored Research Experience for Undergraduates program at

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From The Chair:

by Dr. William Jackson

Wally's gone! An icon of the biology department for over 15 years is no longer a resident. For those who may not have seen him for some time, Wally grew from a hatchling at the Ruth Patrick Science Education Center to about 15 inches when he began living in the Science Building to a full 4 feet. For the past several years Wally has been living in a large tank in the greenhouse and all concerned decided he needed new digs. At the beginning of the fall semester, Dr. Hanlin arranged for Wally to take up residence at Myrtle Beach. He now lives at Alligator Adventures along with several other hand-raised alligators. All reports are that he has settled in nicely. Some of you may also be familiar with Sassy – a small alligator who has been residing in the Science Building for about two years. Sassy has gone on to star in a traveling education program through the SC Department of Natural Resources. All indications are that she is doing well too.

In other departmental news, we are welcoming a new faculty member this fall. This past spring semester Dr. Stephanie Muga accepted a position as an Anatomy and Physiology Instructor. Dr. Muga comes to us most recently from the Hollings Cancer Center at the Medical

University of South Carolina where she worked as a Research Assistant Professor. Although her primary teaching load will be anatomy and physiology, I am hopeful that we can tap into Stephanie's expertise in oncology through our cancer biology course.

Over the last academic year we made some significant changes to the biology curriculum in the area of the cognate. As many of you know, the cognate is a group of courses that support the major and since 2002 required at least one course in organic chemistry and physics. Beginning this year students can choose a second cognate option in geology. This cognate is particularly suited to students interested in careers in environmental biology. Students completing this cognate will be required to complete twelve hours taken from the 300-, 400-, or 500-level. Those pursuing this option will be required to first complete Physical Geology (AGLY 101) as a prerequisite. I would encourage any currently enrolled student who is interested in this option to speak with their advisor.



Dr. Hanlin kissing Wally Good-Bye

Classified Employee Of The Year

by Dr. Derek Zelmer

Every year, four classified USCA employees are selected for recognition as Classified Employees of the Year. This past academic year, our very own Carol Cutsinger was among the four rewarded for their extraordinary efforts. Carol certainly embodies the criteria for the award, which include diligence and initiative, but it is undoubtedly her special talent for dealing with even the most difficult and confused members of the faculty that has thrust her into this particular spotlight.

Carol's unique challenge has been to manage the affairs of a department with an unusual combination of disciplines. The Department of Biology and Geology is one of only 3 Biology and Geology departments presently in existence (the other 2 are at Baldwin Wallace College in Ohio and Babes-Bolyai University in Romania). In addition to this peculiar balance of disciplines, the affairs of the departments of Chemistry and Physics, also have become Carol's responsibility since Brad Reinhart joined the department to (among other things) relieve Carol of the chore of placing orders for items ranging from formalized fruit flies to fossilized foraminiferids (and the occasional Ford).

Carol has been working in the Biology and Geology office at USCA for 9 years, and has held similar positions at such renowned institutions as Harvard and the USC Columbia campus. Still, she cites her experiences raising cattle and chickens in Illinois, and later raising 3 children of her own, as proving the most useful for dealing with the day to day business, and the mosaic of personalities that occur at an institution of higher learning.

What is immediately obvious to anyone that has spent more than 15 seconds in the Biology and Geology office is that Carol greets every visitor, every responsibility, and every new crisis with enthusiasm, and a cheery disposition that most people could not muster without the assistance of strong medication. Her perpetual smile is sincere, and Carol seems to have made it her personal mission to make everyone's day just a little bit brighter.

Through all of numerous and generally mundane tasks required of Carol, she somehow manages to find the time for the little things. Everyone's birthday is marked with a cake, and Carol always keeps track of what is happening in the individual lives of every person that wanders through the office. Carol is more than a model employee. She is a model human being. We are fortunate to have her as a member of the department, and proud of her accomplishments as the 2007 Employee of the Year.



Congratulations Graduates

Fall 2006

Bachelor of Arts

Chevon Blackwell

La Tasha Wakefield Brown

Christina Fishpaw

Nancy Jones

Sarah Tracy

Bachelor of Science

Matthew Brewer

Lesley Duffie - cum laude

Twaneisha Gee

Bob Hatcher

Erin Jones

William Russell Owen

Sarah Tracy

May 2007

Bachelor of Arts

Diana Darr

Aimee Gunter - summa cum laude

Amanda Gunter - summa cum laude

April Miles - magna cum laude

Bachelor of Science

Holly Clarke

Katherine Fleming

Cari Fritz-French - cum laude

Jennifer Groomes

Brandon Hall

Elizabeth Brooke Harrison - cum laude

Melinda McDonald - cum laude

John Pierson - cum laude

Christopher Shealy

Bradley Temple - cum laude

Kenneth Alan Teuton

Ashley Vereen

Steven Walker - cum laude

August 2007

Bachelor of Science

Marcus Harris

Ancil Adkins

David Dorsey

Tyesha Sanders

Kimberly Dawn Sarka

Biology Student Of the Year

Cari Fritz-French, a May 2007 graduate with a B.S. degree, cum laude, in biology was selected by the faculty as this year's Outstanding Student in Biology. Cari grew up in Aiken and is an alumnae of Aiken High. She attended the College of Charleston for one year and transferred to USCA in Fall 2004. Like many college students, she didn't really know what she wanted to do, but decided on a biology major because she thought it would open the most doors. In her junior year she joined the lab of Dr. William Jackson and found she really liked being involved with research. She learned the techniques necessary to begin cloning ribozymes for HIV inhibition and completed several independent research projects under Dr. Jackson's tutelage. Thinking back over her journey from undecided to biology, Cari credits her classes in Immunology and Cell and Molecular Biology with focusing her on molecular biology. A class in Marine Microbiology with Dr. Smith also sparked an interest in the marine field. During the summer between her junior and senior years, Cari worked in the lab with Connie Arthur, a May 2006 graduate who began graduate studies at Emory that fall, which solidified her plans to go into research. She continued her work in Dr. Jackson's lab during her senior year, while she also worked in the departmental office helping the administrative assistant with the day to day operations of the office.

Cari distinguished herself in April at the South Carolina Academy of Science annual meeting, held this year at the Midlands Technical College Airport campus. Her presentation, "Development of a Luciferase Assay for Analysis of Anti-HIV Ribozyme Activity in Tissue Culture" won the award for Outstanding Undergraduate Research in the Molecular Biology field, as well as earning her the overall award for the American Association for the Advancement of Science Outstanding Female Undergraduate Scientist. She was honored with these awards at the Academy's award banquet in Charleston.



Chancellor Hallman, Cari Fritz-French and Dr. Bill Jackson

Cari is grateful for the mentoring she received at USCA: "I want to express my thanks to all of my professors for getting me where I am. Their support and encouragement meant a lot to me." And we in the department look forward to hearing about her future successes.



Alumni Focus continued from page 8

both Dewayne and Casey. Dewayne decided on medicine as a career because he enjoyed the technical aspects of caring for patients and being in the operating room. He says, "I really appreciate the time I spent at USCA. The lower cost of tuition, close proximity to my home, and the quality education I received made becoming a doctor possible."

Casey, originally from Rigby, Idaho, graduated from South Aiken High. After receiving her degree from USCA, she worked as a GCMS Chemist for NFT, Inc. at SRS. She is presently a stay-at-home mom to Reagan, born in December 2006. Casey's favorite class was Genetics with Dr. Jackson. Casey and Dewayne were married in Island Park, Idaho on January 8, 2003. They hope one day to return to Aiken where Dewayne would practice general surgery.



Geology Student Of The Year

Virginia (Ginny) Kopald was selected by the geology faculty as Outstanding Student of the Year in Geology for 2007. Ginny is the mother of three children, aged 19, 17, and 13 and returned to school 12 years ago. She has been diligently working on a BIS degree in history and anthropology as a part-time student. She also instructs tennis and competes nationally in court tennis/real tennis.



Dr. Hallman and Dr. Jackson congratulate Geology Student of the Year, Virginia Kopald at the Academic Convocation

When asked about her interest in geology, Ginny explained, “Geology was a natural for me. I have always been fascinated by the different geography of the continental US. I also love looking for and collecting different rock specimens from different locations, which I have been doing for years. Thanks to the knowledge that I gained over the past year and Dr. Dennis’ patience, I now have a slight understanding of how these rocks originated and have insight into their depositional environments! I find geology truly fascinating and would love to pursue it further. Hopefully, I will be able to incorporate more geology classes into my schedule and perhaps even do further studying in geology after I accomplish my degree.” We congratulate Ginny and hope she’ll be back for more geology classes.



Alumni Update Online

Did you know?

You can update your address and let us know what you’ve been doing since graduation online! Just go to www.usca.edu/biogeo/alumni.html. We’d love to share your news!

Tara Poppy, Fall 2000, was awarded the Doctor of Veterinary Medicine degree from the University of Tennessee School of Veterinary Medicine in May 2007.

Adam Hoffman (Fall 2005) and Yianne Kritzas (Spring 2006) recently returned from a month-long trip to Western Europe, including France, Italy, Switzerland, Austria, and Poland.

Recent Faculty Activities

Garriet Smith: January 07 attended workshop for the World Bank Coral Disease Working group in Manila, Philippines; June 07 presented a talk at the 32nd Annual Eastern Fish Health Workshop in Gettysburg, Pennsylvania.

Allen Dennis: March 07 presented a paper at the Southeastern Geological Society of America meeting in Savannah, Georgia; served on the Geological Society of American Research Grant committee in Boulder, Colorado

Derek Zelmer: April 07 presented a paper at the Southeastern Society of Parasitologists meeting at Belle Baruch Marine Laboratory in Georgetown, South Carolina

Harry E. Shealy, Jr.: April 07 chaired a session at the Association of Southeastern Biologists in Columbia, South Carolina

Andy Dyer: May 07 attended General Education review and reform conference, American Association of Colleges & Universities at Salve Regina University in Newport News, Rhode Island; June 07 served as a grader for ETS Advanced Placement biology exams in Louisville, Kentucky

William Jackson: June 07 attended a four-day workshop on Basic Confocal Microscopy techniques at the USC School of Medicine, Columbia, SC

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USC in the lab of Dr. Richard Vogt studying olfaction in sharks. Michelle applied, was chosen as a participant, and by the end of the summer Dr. Vogt had offered her a place in his lab. She began her studies at USC in the Fall of 2000.

Dr. Vieyra wanted to teach from the very beginning of her graduate studies and was a teaching assistant every semester. She loved the teaching and gained experience with anatomy and physiology classes as well as her favorite subject, animal behavior. Her research in Dr. Vogt's lab centered on olfaction in turtles. She was interested in the evolution of olfactory receptor genes. "There was an evolutionary gap in the research," Dr. Vieyra explains. "No one had done reptiles." A grant from the National Marine Fishery Service allowed study of several species of sea turtles: loggerheads, greens, and leatherbacks.

After earning her Ph.D. in May 2006, Dr. Vieyra was hired as an assistant professor in our department to begin Spring 2007. She had already committed to serving as the Lab Coordinator for the biology department in Columbia for Fall 2006. After her first full semester of teaching two lecture/lab classes (ABIO 101 and ABIO 232), Dr. Vieyra is sure she has chosen the right profession for her. She loves the teaching. Most rewarding for her is teaching the students how to learn and developing one-on-one relationships with them. "You need to figure out their learning style to help them, and that's easier to do when you have them for both lecture and lab. You can see which are visual learners and which are conceptual learners."



Dr. Vieyra with her birds, Beaky, Henny, Shrimp, and Scampi

Her biggest challenge was learning to time her lectures to fit into the appointed class times. She will be continuing her research involving olfactory receptor genes in snakes, lizards and birds. She would also like to establish a relationship with the Riverbanks Zoo so USC Aiken students can do some animal behavior studies there. Dr. Vieyra is enjoying the community in the department and campus wide. We welcome her wholeheartedly!



Wedding Bells

Dr. Hugh Hanlin officiated at the wedding of 2003 alumnae Pamela Wall and Eric Steen, Jr. on Saturday, June 23rd at the Rye Patch in Hopeland Gardens in Aiken. Attending the bride were 2004 graduates Jackie Davis Hall and Vanessa Guy Etheridge. Pam is entering her 5th year of graduate studies at the Medical College of Georgia, where she expects to receive her Ph.D. in 2008.



Fall 2006 Independent Research

Research continues to be an integral part of our department's program. Students pursue independent study projects under the tutelage of faculty members, and those pursuing a B.S. degree are required to complete a senior research project. Listed below are projects for Fall 2006 and Spring 2007.

Independent Study Projects

- Stacie Evans: Toxicity of secondary compounds in *Phyllanthus*. Advisor: Dr. Andy Dyer.
- Cari Fritz-French: Analysis of anti-Tat ribozyme activity using a luciferase assay. Advisor: Dr. William Jackson.
- Amanda Gerolstein: Design and cloning of an anti-HIV hammerhead ribozyme. Advisor: Dr. William Jackson.
- Elizabeth Harrison: Cloning anti-HIV LTR ribozymes into a retroviral vector. Advisor: Dr. William Jackson.
- Audrey Hendley: Design and cloning of an anti-NEF hammerhead ribozyme. Advisor: Dr. William Jackson.
- Glenna Holley: Coral Pathogens from East Africa. Advisor: Dr. Garriet Smith.
- Nancy Jones: Cloning of an anti-HIV Vpu ribozyme. Advisor: Dr. William Jackson.
- Mindy McDonald: Cloning of an anti-HIV LTR ribozymes. Advisor: Dr. William Jackson.
- William Owen: Advanced GIS in the Sciences: Biology. Advisor: Dr. Hugh Hanlin.
- Bradley Temple: Advanced GIS in the Sciences: Biology. Advisor: Dr. Hugh Hanlin.
- Bradley Temple: Habitat use of coyotes (*Canis latrans*) in Hitchcock Woods. Advisor: Dr. Jeff Priest.

Senior Research Projects

- Matthew Brewer: Phenotypic plasticity in yellow nutsedge. Advisor: Dr. Andy Dyer.
- Lesley Duffie: Design and cloning of an anti-HIV ribozyme. Advisor: Dr. William Jackson.
- Twaneisha Gee: Transgenerational plasticity in *Phyllanthus urinaria*. Advisor: Dr. Andy Dyer.
- Erin Jones : Golf course runoff and nutrient analysis. Advisor: Dr. Michele Harmon.
- Adrienne Kemp: Competitive interactions between two species of nutsedge. Advisor: Dr. Andy Dyer.
- William Owen: . Advisor: Dr. Hugh Hanlin.
- Kevin Pope: Phenotype switching in *Phyllanthus urinaria*. Advisor: Dr. Andy Dyer.
- Sarah Tracy: Landscape Epidemiology. Advisor: Dr. Derek Zelmer.

Spring 2007 Independent Study Projects

- Amanda Gerolstein: Synthesis of T7 vpu DNA templates for in vitro transcription. Advisor: Dr. William Jackson.
- Audrey Hendley: Synthesis of T7 DNA templates for in vitro transcription. Advisor: Dr. William Jackson.
- Theresa Ramos: Cloning of an anti-HIV-1 hammerhead ribozyme. Advisor: Dr. William Jackson.
- Dorice Wilson: Methodology and protocols for parasitological examination. Advisor: Dr. Derek Zelmer.

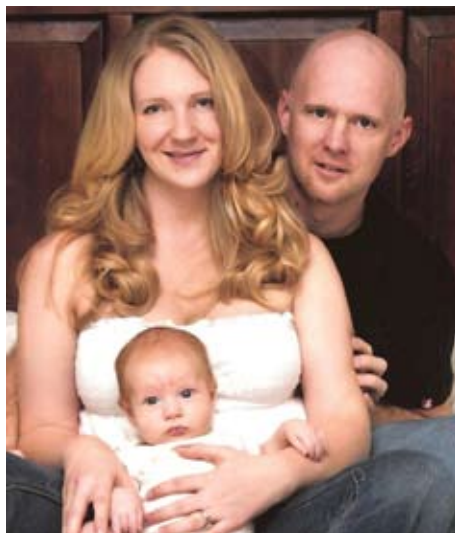
Senior Research Projects

- Ancil Adkins: Water quality assessment of upper Three Runs Creek. Advisor: Dr. Michele Harmon.
- Patricia Barber: Is Brassica phenology affected by competition and resources. Advisor: Dr. Andy Dyer.
- Holly Clarke: Maternal effects in Brassica seeds from contrasting environments. Advisor: Dr. Andy Dyer.
- David Dorsey: Plasticity of tuber production in *Cyperus esculentus*. Advisor: Dr. Andy Dyer.
- Carla Dupert: The effect of alternative foods on *Bombyx mori* development. Advisor: Dr. Andy Dyer.
- Cari Fritz-French: Analysis of anti-Tat ribozyme activity using a luciferase assay. Advisor: Dr. William Jackson.
- Deep Ghadawala: Competition and root allelopathy in *Phyllanthus urinaria*. Advisor: Dr. Andy Dyer.
- Jennifer Grooms: Causes of childhood mortality in Graniteville, SC before 1920. Advisor: Dr. Andy Dyer.
- Brandon Hall: Using freshwater invertebrates to study ecotoxicology. Advisor: Dr. Michele Harmon.
- Marcus Harris: Host biology as a parasite community process. Advisor: Dr. Derek Zelmer.
- Elizabeth Brooke Harrison: Cloning anti-HIV LTR ribozymes into a retroviral vector. Advisor: Dr. William Jackson.
- Larry Hicks: Identification of Indonesian coral microbes. Advisor: Dr. Garriet Smith.
- Melinda McDonald: Design and cloning of a ribozyme to the HIV-1 LTR. Advisor: Dr. William Jackson.
- John Pierson: Expression of bphF and bphG in LB400. Advisor: Dr. James Yates.
- Tyesha Sanders: Analysis of Chromosomal Deletions in LB400. Advisor: Dr. James Yates.
- Kimberly Sarka: Aquatic toxicity testing of Upper Three Runs Creek. Advisor: Dr. Michele Harmon.
- Christopher Shealy: Cloning p1 from LB400. Advisor: Dr. James Yates.
- William Simmons: Deletion Analysis of the Promoter p1. Advisor: Dr. James Yates.
- Bradley Temple: Using freshwater invertebrates to study ecotoxicology. Advisor: Dr. Michele Harmon.
- Kenneth Alan Teuton: Germination in *Aegilops triuncialis* across three populations. Advisor: Dr. Andy Dyer.
- Ashley Vereen: Do resource patches influence maternal effects in *Cyperus tubers*. Advisor: Dr. Andy Dyer.
- Steven Walker: Transcription of bphB and bphC in LB400. Advisor: Dr. James Yates.

Alumni Focus

They met in Dr. Jackson's Genetics class and started dating after working together in Dr. David Strom's research lab—a match made in the halls of the Science Building here at USC Aiken. Dewayne ('01) and Casey (Johnson) Edwards ('02) recently paid a visit to the department with their son Reagan.

Dewayne is from Barnwell, SC and graduated from Barnwell High. He earned a nursing diploma from Aiken Tech in 1993. During his years at USCA and after graduating in 2001, Dewayne worked at Aiken Regional Medical Center and Newberry Hospital as a nurse and began medical school



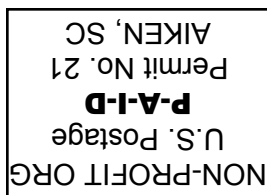
*Dewayne & Casey Edwards
with son Reagan
(photo courtesy of Misty Morris)*

in 2003. Now Dr. Edwards, he graduated in May of this year from the West Virginia School of Osteopathic Medicine with the degree of Doctor of Osteopathic Medicine. He joined the army under the Health Profession

Scholarship Program after being accepted into medical school. He served in the reserves since April 2003 and entered active duty after his graduation in May. He is presently doing a General Surgery Residency at William Beaumont Army Medical Center in El Paso, Texas and will be providing surgical care to his fellow soldiers both in the theater and at home.

Dewayne's favorite classes were Dr. Hanlin's Herpetology and Vertebrate Natural History. "I had a great time on the trips to the beach and mountains with Dr. Hanlin," Dewayne reminisces. Working with Dr. David Strom in his lab on cancer research was also a strong influence for

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