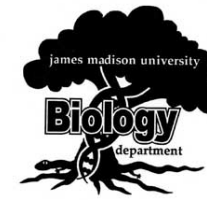




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Summer 2005

Message from the Department Head

In August 2004 I became the Head of Biology, taking over the leadership from the able interim head, Jon Monroe. It has been a wonderfully rewarding and exciting time for me and for the department. You will read about some of the activities of our faculty and students in other articles in this newsletter. To introduce myself to the alumni/ae and other readers, I am a microbiologist and biochemist by training, having gotten my doctorate from Medical College of Va. in 1988. Prior to going to graduate school, I had a career in church music and family management—I have several children! For ten years I was in the biology department at Drew University, a small liberal arts school in New Jersey.



My research focus is on a pathogen of birds, *Bordetella avium*, which is a “kissing cousin” to the whooping cough bacterium, *Bordetella pertussis*. I work with several collaborators as we try to dissect out the pieces and parts of this bug that do the dirty work in disease causation, primarily in turkeys. Many of you will chuckle at this, since you know that I’ve moved to a major poultry growing section of the country. In fact, I am taking advantage of this proximity and have obtained fertilized turkey eggs and adult turkey tracheae from local industry folks. Our ultimate goal, in addition to simply understanding the biology of the bacterium and its ecological niches, is to create an effective vaccine to prevent the disease, bordetellosis, which is a highly contagious respiratory infection. I have an active lab at JMU, with three research students, a post-doctoral fellow who also teaches in the department, and funding from NIH and USDA.

I will also be teaching in the microbiology curriculum and in the introductory biology courses. Also, I have a strong interest in interdisciplinary studies, having previously team-taught a course called “Gender Issues in Science”, which I am planning to offer here with the help of an English professor. I support the biology department in its commitment to teacher training, general education, and outreach to the community.

You already know this, but I am discovering more every day what an outstanding and committed group constitutes the biology faculty here at JMU. They are passionate about the teaching and learning of our students, and they are immersed in scholarly activity of all sorts, which they eagerly share with their students. Two of our professors, Dr. Sharon Babcock and Dr. Carol Hurney, have received awards this year, Outstanding Teaching Award, CSM, and Outstanding General Education Teaching, respectively. Dr. Ivor Knight gave the Madison Scholar presentation on March 29. It is an exciting environment in which to work! The group has just begun a modest remodeling plan for a number of spaces in Burruss, which will result in our being able to successfully continue our good work in spite of severe space limitations. We are looking forward to planning for a new building in the east campus complex in about 3 years.

We hope you will take the time to contact your professors, come to see us here, send us ideas you might have about how we can better serve you, and/or send your children to attend JMU! We have established a Speakers’ Fund to which you can contribute through the JMU Foundation. Jon Monroe is heading up an effort to get our alumni/ae more involved, so you may hear directly from him in the future. I would love to hear from you, meet some of our department graduates, and get some of your feedback.

-Louise Temple

Inside:
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Trelawny Learning Community

This year, 18 freshmen biology majors were members of the Trelawny Learning Community. These students lived together in Gifford Dorm and all were enrolled in the Trelawny Learning Community seminar along with their freshman biology, chemistry and math courses. During the seminar, the students explored many aspects of biology including careers, ethics, current topics in the news, and genetic engineering. Students also met with department faculty to learn about their research and study abroad opportunities. Along with the formal course work, students worked with the Trelawny coordinator, biology faculty member Jennifer Clevinger, to organize social events and field trips. This year the learning community had an ice cream social and a science fiction movie night. In Fall 2004 they traveled to Shenandoah National Park and hiked to Dark Water Falls and Hawksbill Peak, the highest point in the park. During the Spring 2005 they traveled with biology faculty member David Jaynes to Washington D.C. to visit the Smithsonian Natural History Museum.



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Tell us what you’re doing!
We love to hear from our alumni, so send us your news!

New Faculty in the Biology Department

Dr. Kyle Siefert received his Ph.D. in Biomedical Science (Microbiology - Immunology) from the University of Florida. Kyle teaches Allied Health Microbiology. His research interests include identifying and characterizing novel genes found in a more pathogenic lineage of group B streptococci.



Dr. Judith Wubah received her Ph.D. from Thomas Jefferson University. Judith joined the Department in August 2004 although she had served as an affiliate since 2000. She teaches Cell Biology and her research is on the early development of the prostate.



Student Awards and Highlights

Tri-Beta Outstanding Junior Award: **Ryan T. Bushey**

Margaret A. Gordon Memorial Scholarship: **Jennifer Costanzo, Karen Duncan, Ross Haynes, and Ashleigh Lane**

Clinical Laboratory Science Award: **Cara DiGiovanni**

Dr. Peter T. Nielsen Annual Award for Botanical Studies: **Erin Culpepper and Emily Treadaway**

Excellence in Biology: **Ju-Han Chang, Ashley Crawford, Christin Donnelly, Christopher French, Ross Haynes, Takara Shourot**

Excellence in Teaching: **Kryisia Magnuson**

Shawver Senior Book Award: **Ashley Crawford**

Chappelear Scholarship: **Elizabeth Carter, Ju-Han Chang, Christopher French, Ross Haynes, Jennifer Jackson, Jennifer Kallenborn, and Ashley Lakner**

Biology Merit Scholarship: **Scott Toney** (1st year) and **Lynn Lacarino** (2nd year)

Leslie Taylor received a \$1000 grant from Sigma Xi for her research.

Faculty Highlights

Sharon Babcock received the College of Science and Mathematics Outstanding Teaching Award this year.

Carol Hurney received the General Education Distinguished Teacher Award.

Conley McMullen was elected to the General Assembly of the Charles Darwin Foundation, an organization dedicated to promoting conservation, education, and research in the Galapagos Islands.

Grace Wyngaard was recognized as a Fellow of the American Association for the Advancement of Science (AAAS) at the AAAS annual meeting.

Chris Rose spent 6 months working in the lab of Dr. Filippo Rijli at the Institut de Génétique et Biologie Moléculaire et Cellulaire, in Strasbourg, France studying Hox gene function in frog metamorphosis.

Ivor Knight took a leave of absence to work as the Director of Research and Development for Canon U.S. Life Sciences, Inc., a new biotechnology subsidiary of Canon USA. Ivor has established biomedical, molecular diagnostic research facility for the company. While setting up the facility, Ivor has run into several graduates of JMU's biology program. "They have been surprised to see me, but I have not been surprised to see JMU grads working on the cutting edge of genetic research and in the biotech industry."

Reid Harris developed a new course with Brian Walton (Mathematics Department) called "Mathematical Models in Biology".

Roshna Wunderlich planned, organized, and hosted the first Southeast Regional meeting of the Division of Vertebrate Morphology.

News from Recent Graduates

Seth Coffman (M.S. '05) accepted a position with the USDA Forest Service in Blacksburg, VA. He will be heading a project studying fish passage issues in the Southeast U.S.

Melinda Peters (B.S. '03) will receive a Master's degree in Botany from North Carolina State University.

James Sides (B.S.'04) will start a masters program at Georgetown University's in Bio-hazardous threat agents and emerging infectious diseases.

Faculty and Student presentations (student authors in bold)

Teresa Thieling and **Seth Coffman** presented "Update on the Eastern Brook Trout Initiative: The biotic integrity of native brook trout watersheds" at the Northeast Fish and Wildlife Conference in Virginia Beach, April 17-20, 2005

Mark Gabriele, **Jamie Robenolt** and **Amanda Laz** presented "The involvement of ephrins and Eph receptors in establishing early pattern formation in the auditory midbrain." at the annual meeting for the Association for Research in Otolaryngology held in New Orleans, LA February 19-24, 2005.

Conley McMullen and **Erin Culpepper**, presented "*Cordia lutea* (Boraginaceae), an example of heterostyly in the Galápagos Islands." at the 66th Annual Meeting of the Association of Southeastern Biologists in Florence, AL April 13-16.

The 83rd Annual Meeting of the Virginia Academy of Sciences was held at JMU this year. Many of our students and faculty presented talks at the meeting.

Jennifer Clevinger, Curtis Clevinger, **Brent Huskey, Matthew Beegle, Zubin Joseph**, and James Henrickson. "Preliminary Phylogenetic Analysis of *Mortonia* (Celastraceae) using ITS Sequence Data."

W. Dean Cocking, **Amir Allak, Amanda Kelly, Susan Temple, and Zamba Lundi**. "A screening Network of Low Cost Airborne Substance collectors for the Assessment of Atmospheric Hg within the Shenandoah Valley."

Elizabeth Doyle, **Ashleigh Lane, James Sides, Grant Marshall, Meghan Schrader, Nick Schroeder**, and Jonathan Monroe. "Secreted α -Amylase from *Arabidopsis*: Developmental Expression, Cellular Localization, and Influence on Starch Metabolism."

William Flint and Reid Harris. "Population Ecology of the Cow Knob Salamander."

Conley McMullen. "A Preliminary Study of the Genus *Cordia* (Boraginaceae) in the Galapagos Islands.

Michael Renfroe and **Guillermo Calica**. "Comparison of Hydrophilic Antioxidant Concentration among Freeze-dried and Fresh Fruits."

Terrie Rife and **Nick Pullen**. "A Genotyping Study of the Neuronal Nitric Oxide Synthase Gene."

Kristin Ruff, Louise Temple and David Miyamoto. "*Bordetella avium* Causes Induction of Nitric Oxide Synthase in Tracheal Explant Cultures."

Kimberly Slekar, **Amy Turner** and **Kristen Ditzler**. "A Genetic Study of Anti-Oxidant Factors in Yeast."

Publications by Biology Faculty and Students

Monroe, J.D., **Garcia-Cazarin, M.L., Poliquin, K.A., and Aivano, S. K.** (2003) Antisense *Arabidopsis* plants indicate that apoplastic α -glucosidase has α -xylosidase activity. Plant Physiology and Biochemistry 41(10): 877-885.

Murphy, C.G., **Spellerberg, J., and Bates, S.** Timing of Oviposition by Female Barking Treefrogs (*Hyla gratiosa*) (2003) Journal of Herpetology 37(3): 580-582.

Neel, N., Creasy, B.M., Rankin, J.N., Pierce, E.M., McCoy, M.E., Daner, R.H., Fowler, J.A., Daniel, J.C., and Lantz, C.S. (2004) Absence of interleukin-3 does not affect the severity of local and systemic anaphylaxis but does enhance eosinophil infiltration in a mouse model of allergic peritonitis. Immunology Letters 95(1):37-44.

Peters, M.D., C.K. McMullen, and L.M Hill. (2005). Noteworthy additions to the vascular flora of Rockingham County, Virginia. Castanea 70: 63-69.

Wiggins, B.A., **Cash, P. W., Creamer, W. S., Dart, S. E., Garcia, P. P., Gerecke, T. M., Han, J., Henry, B. L., Hoover, K. B., Johnson, E. L., Jones, K. C., McCarthy, J. G., McDonough, J. A., Mercer, S. A., Noto, M. J., Park, H., Phillips, M. S., Purner, S. M., Smith, B. M., Stevens, E. N., and A. K. Varner.** (2003) Use of Antibiotic Resistance Analysis for Representativeness Testing of Multiwatershed Libraries. Applied and Environmental Microbiology. 69:3399-3405.