



BALL STATE
UNIVERSITY

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biology notes



Mark Pyron is the newest Assistant Professor of Biology. Mark came as a contract faculty member after having been a professor at Penn State-Erie. Mark had two postdoctoral positions after his Ph.D.: the University of Illinois and Colorado State University. His Ph.D. in zoology is from the University of Oklahoma, his M.S. is from University of North Texas, and his B.S. is from University of Wisconsin. Mark teaches introductory biology (BIO112), ecology (BIO216), invertebrate zoology (ZOO432), aquatic entomology (ZOO484), and marine biology (BIO483). His research interests involve the ecology of freshwater organisms and stretch from population to macroecology to community ecology studies. ■



Jennifer Metzler joined the faculty to teach People and the Life Sciences (Bio100), as well as, introductory cellular and molecular biology in Principles of Biology (Bio111). She has taught previously at Southern Utah University, and Earlham College in Richmond, IN. She received her B.S. in Biology from Purdue University in Indianapolis and her Ph.D. in Microbiology and Immunology from Indiana University, training at the School of Medicine in Indianapolis. Her research interest involves the effects of environmental toxins on the immune system. ■



Diane K. McCubbin will be teaching introductory biology courses (BIO102, BIO113), as well as upper division courses (BIO217). She received her B.S. in biology from Northern Kentucky Univ., M.S. in aquatic biology and fisheries from BSU, and Ph.D. from the University of Cincinnati. Her research interests lie in aquatic biology with an emphasis on water quality and large river ecology. ■

Notes from the Chair



The annual writing of this note to the graduates of the Biology Program causes me to reflect on the challenges and successes of the past year. Has this been a good year? An unqualified Yes! We have taught more students in all areas and students continue to pursue internships and practicum experiences mentored by faculty and our business counterparts. Faculty-generated funds have surpassed last year's totals and many other grants are pending from different funding agencies.

Kemuel Badger and Clare Chatot were promoted to full professors in the fall, 2004 in recognition of their excellent accomplishments as teacher-scholars, and service providers to the academic profession. Mark Pyron, who has been with us for three years, was granted a tenure line position in the aquatics area. We are pleased to have him join us, bringing strong credentials and a love for international travel particularly in the Caribbean.

A donation of a Flow Cytometer to the university by Pathology Associates, (an expanding laboratory business located and owned locally), has provided us with a state of the art instrument. Heather Bruns received training on the unit and will share her knowledge with colleagues within the College of Science and Humanities (CSH) and the Muncie Center for Medical Education (MCME). It is positioned in the new imaging facility, a newly renovated area in Cooper, where it joins the NSF acquired confocal microscope and the transmission and scanning electron microscopes. The facility is one of several examples of the cooperative endeavors between CSH and MCME.

Several curricular changes are being undertaken by the department. We are moving forward on the new secondary education licensure in life science including electronic portfolios, artifact inclusion and their assessment. The increased rigor incorporated into the content area will enhance the knowledge base of our students. Efforts are also underway to change our department options into majors to better indicate student education and training.

We appreciate the clips about your activities, keep them coming! We hope you enjoy the updates!

Look for the *BSA* Alum Magazine which will feature our department in the spring edition.

Have a good year!

Alumni interviews. . . .

Editor's note. Recently we interviewed several graduate program alumni for **biology notes**. Here are responses from three of our recent graduates. Chad Hoefler, M.S., 2000; Audra (Carroll) Lee, and Michael Rutledge, Ed.D., 1996.

Describe your present position, including length of time held, and what you enjoy the most / least.



Chad: I am a Ph.D. candidate at the University of Massachusetts. I am a behavioral ecologist, and my research involves space use and the mating system of a species of jumping spider. As a Teaching Fellow, I teach a course entitled *Insects and Human Society* with over 600 undergraduates enrolled. I will graduate in May 2005 (fingers crossed), and I am actively pursuing faculty positions.

I have enjoyed most the autonomy that my graduate advisors have strongly encouraged. This has made grant writing, designing and implementing research, publishing in refereed journals, teaching, and mentoring undergraduates all the more rewarding. I also greatly enjoy the camaraderie held by my graduate student and faculty colleagues.

What I enjoy least as a graduate student are the humdrum, often repetitive tasks associated with the above. But instead of laboring on the mundane, I simply view it as a small trade-off for the freedoms for which I have been afforded: it is a trivial price to pay.

Audra: What I enjoy most is two-fold: 1) being involved in the theory behind a project and its' design, and 2) getting a much sought after and difficult to obtain result. Those are the times that make all of the hard work and dedication worth it. I worked for 3½ years as a Research Analyst at a Duke University Medical Center lab studying normal cerebellar development and the brain tumor medulloblastoma. My research largely focused on identifying and characterizing neural stem cells in the postnatal cerebellum, helping understand both normal development and tumorigenesis. My work is currently under consideration at Nature Neuroscience. I then left to accept a position as a Research Associate at the University of Pittsburgh, McGowan Institute for Regenerative Medicine. I will be working initially on identification and characterization of cancer stem cells in the liver. Our lab will also study normal stem cells and their use in whole-organ regeneration efforts. In fall 2005, I will begin a Ph.D. program at the UP School of Medicine Interdisciplinary Biomedical Graduate Program.

Michael: I am an associate professor of Biology at Middle Tennessee State University. I have been at MTSU for nine years, joining the faculty after earning my doctorate at Ball State University in 1996. I coordinate and teach a general biology course for nonmajors and also teach a biology course designed for education majors. My research focuses on evolutionary biology education and the nature of science as a method of inquiry, as well as on the effectiveness of student-centered activities in promoting meaningful learning. I enjoy the mix of teaching and research but find committee work a challenge—does anybody like that stuff?



How important was your graduate school research and degree? Any advice to current or prospective graduate students?

Chad: I am very proud of my graduate research and M.S. degree from Ball State. I can't state it strongly enough how well it prepared me for my doctoral work. The experience of posing and thinking deeply about biological questions, designing experiments, conducting statistical analyses, and publishing results placed me ahead in the Ph.D. game.

The best advice that I can offer anyone interested in a graduate degree in biology is to identify a track of research that genuinely interests you, then shop for a graduate mentor that fosters an environment of unbridled support and independence.

Audra: My graduate research and M.S. degree were integral to my ability to work in a research oriented position after graduation. The level of training I received under my mentor was invaluable. I was much more qualified to understand the basic concepts of research techniques, apply those concepts to the bench, and to troubleshoot projects that weren't working compared to individuals coming from other, even big-name schools. However, I must state that depending on "what you want to do for the rest of your life," serious consideration to which degree you pursue is key. I would highly recommend the M.S. graduate program at BSU to any student, provided that they know they do not want to pursue a cell/molecular Ph.D. eventually. If a doctoral degree is in your sights, you might want to enter that program directly, or at least find out more about it before deciding to get the masters degree first. Research the possibilities, including talking to people within the field about the jobs available upon completion of each track to make sure they fit what you want to do on a daily basis. Professors, grad students, lab personnel, and industry contacts of any sort can provide you with the various perspectives you may need, and possibly even opportunities for internships for hands-on experience.



Michael: Biology education is an emerging specialization and Ball State University is one of the leaders in this area. I have found that my experiences at Ball State have well-prepared me for the challenges of academia by fostering my development as a scholar as well as a teacher.

What did you enjoy most about your BSU experience?

Chad: Although my words fall short of adequately describing how much I enjoyed the Biology program at B.S.U., as I reflect upon my experience, I am still deeply touched by the benevolent attitude collectively held by the department faculty. I felt both challenged and supported at all times. Likewise, the graduate student population was as diligent as they were amiable and entertaining: a good time was had by all. But, at bottom, I enjoyed most the relationship that I had with my advisor; he never let me sink, and he only encouraged me to swim.

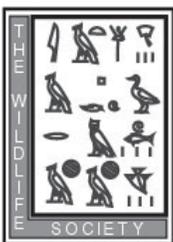
Audra: My experience at BSU was very positive, and the one thing I enjoyed the most was the close-knit atmosphere among the students, and the professors as well. It is a mid-sized institution with all of the benefits thereof, but has the feel of a much smaller university or college. I always felt at home here, whether I was in the lab or out on a late-night adventure with my friends.

Michael: I value the range of experiences afforded to me during my time at Ball State. The program allowed me to combine interests in evolutionary biology, science education, and the philosophy of science, and to interact with outstanding faculty in each area.

Student Club News...

Ball State's student sub-unit of the **American Fisheries Society** has been getting involved in 2004-05. After finishing a productive 2004 spring semester by attending the IN AFS meeting and cleaning their adopted stretch of the White River; students jumped into activities by attending the National AFS Meeting in Madison, WI. The members have continued to conduct business, as well as continual preservation of their portion of the White River. Concluding the semester was the Midwest Regional Fish and Wildlife Conference with two graduate students, Steve LaBay and Jamie Lau, and one undergraduate student, Cassie May, representing the society with their fabulous research presentations. The students worked hard to acquire donations, which were raffled to raise funds for future meetings and professional excursions. In 2005, BSU AFS members plan to host professionals at meetings, attend the Indiana AFS Meeting, start a mentor fishing Program with the Boys and Girls Club, and hold the Fish Olympics. ■

The **BSU Student Chapter of the American Society for Microbiology (BSUASM)** is a growing group of undergraduate and graduate students from several departments in our College, and is the only student ASM chapter in Indiana. The latest issue of the Indiana Branch of ASM Newsletter includes a piece on BSUASM. During December, Dr. Max Wu presented a research seminar entitled "Developing a multivalent vaccine for group B meningitis." Dr. Wu is a Captain in the U.S. Army and discussed his research program at Walter Reed Army Institute of Research in Silver Spring, MD. Students and faculty from Ball State, Anderson and Taylor Universities, Ivy Tech State College/Muncie/Anderson/Marion, and employees at Ball Memorial Hospital were invited to attend this high-profile seminar. BSUASM is planning a series of on-campus speakers for spring semester, and a number of community service activities. ■



The Wildlife Society at Ball State University has been very active this year. Last fall, they continued the tradition of volunteering at Great Cats of Indiana. After a hard day of cleaning cages and other odd jobs, they were permitted to romp with a baby Bengal tiger. The owner and proprietor of Great Cats will be invited to attend the annual

Earth Day celebration and educate the public on his rehabilitative work and allow an up-close view of his tenants.

Proposed future projects include making and placing blue-bird boxes along the Cardinal Greenway, a night-hike owl-calling expedition, a mist netting and birding excursion, and a First-and-a-half Annual Telemetry Competition. ■

The Biotechnology Journal Club includes faculty, graduate, and undergraduate students who meet to discuss recently published research articles. Article discussions are student-led, focusing on critique of the research design and findings significant to biotechnology. The group enjoys food every week provided by a Lilly II grant. ■

The **Cardinal Association of Science Teachers (CATS)** has been awarded an official student charter from the National Association of Science Teachers. The group attended a regional NSTA conference in Indianapolis in November and is planning several educational outings for this semester, including a trip to the Minnetrista Cultural Center to visit the Hubble Space Telescope exhibit and a day at the NASA Challenger Center in Brownsburg to take part in a simulated space shuttle mission. ■

The **BSU Pre-Med/Pre-Dent Club** has been busy this fall semester with two very successful blood drives for Ball Memorial Hospital, a very interesting panel discussion with several local physicians participating, production and delivery of Christmas cards for one of the local nursing homes, and an exciting tour of the new ER facility at BMH followed by a discussion with some of the ER physicians. They look forward to a spring term filled with professional and service activities for the health professional majors. ■

The members of the **BSU Chapter of the Timmy Foundation** have been busy raising funds to purchase supplies for the trip to Quito, Ecuador over Spring Break. They are also actively involved in collecting donations of personal hygiene supplies and over the counter medications from students in the dormitories. This trip has been a new challenge as this is their first solo trip. Last year they were joined by some students from Purdue. In all, twelve students from Ball State and a dedicated group of doctors, dentists, nurses and pharmacists will participate. We wish our students well on their medical mission trip. ■

The newly formed **Genetics Club** is looking for members and plan discussions, tutoring, field trips, movies, guest speakers, and special events all focusing on the exciting fields of genetics and biotechnology today. This is a great club for genetics majors, students in the biotech program, and all molecular biology enthusiasts. ■

Alumni Updates.....

- Gordon F. Reynolds, B.S., 1963, M.S., 1969 retired in 1999, after teaching high school in IN for forty years and coaching for 18. He is currently a Colonel in the IN Guard Reserve and has two daughters, both BSU grads.
- Gordon Mendenhall, M.A., 1972, Ed.D., 1996 is currently Assistant professor in the Master in Arts in Teaching program ant the Univ. of Indianapolis.
- Eugene F. Crabill, B.S., 1973, M.A., 1979 is Science Department Chair and teaches Chemistry in St. Leon, IN.
- Elizabeth S. Maxwell West, B.S., 1975, M.S., 1981, is a chemistry and AP environmental science teach in Grand Rapids, MI.
- Robert Kruger, M.S., 1975 is currently in his forty-third year in education and is Associate Professor of Science at Mayville (ND) State University.
- James N. Rench, B.S., 1976 has served as a Federal Investigator/Regional Specialist, U.S. Food & Drug Administration, Indianapolis, IN.
- Scott A Wagner, MD, received his B.A. in 1982, and is a Forensic Pathologist and Director of the Northeast IN Forensic Center in For Wayne; he has just published "Color Atlas of the Autopsy".
- M. Alan Harshman, O.D., received his B.S. in 1983 is an Optometrist in Decatur, IN and has founded the Adams County Vision Center.
- Robert Burke, B.S., 1986, is the Environmental, Health & Safety Manager for the Dolton (IL) Recycle Center.
- Marla (Banther) Chambers, B.S., 1986, is a Fish & Wildlife Biology II (more specifically a Highway Projects Coordinator) with the North Carolina Wildlife Resources Commission. Her work area is the western half of the state; she reviews road and other transportation projects for environmental concerns.
- Michael Gallinat, M.S. 1987, is a fisheries biologist with the WA Dept of Fish & Wildlife working with ESA-listed spring Chinook salmon. He says hi to the former (1986-87) Lake Michigan crew (Troy, Jim, Kevin, Tom & Steve).
- Roxanna (Behnen) Alstadt, D.O., 1989, is an Obstetrician/ Gynecologist in West Bend, WI., married with two children.
- Melissa (Shell) Brenneman, B.S., 1993, M.S., 1995 is now a GIS consultant for her own company, Brenneman Solutions, in Redlands, CA.
- Cathy Peacock, B.S., 1996, is a biologist for Dow AgroSciences in Indianapolis, IN.
- Jodie M. Jawor, B.S., 1996; M.S., 1998, is currently a post-doctoral research associate at Indiana University having finished her Ph.D. in 2002 at the University of Dayton, OH.
- Sarah Brower, B.A., 2003 is attending graduate school at Arcadia University pursuing a Masters degree in Forensic Science. She works for the Fredric Rieders Family Renaissance Foundation and mentors high school students interested in science. ■



e-mail us...

Send your updated information to our newsletter email address,
bionews@bsu.edu.

Our efforts to extend and improve the educational programs in biology are ongoing. If you would like to help, your financial gifts to the Ball State Foundation can be designated for the

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Donations may be made online at www.bsu.edu/giving/ or mailed to

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