Double Helix

Biology Department Newsletter

Notes from the Chair

This week an email arrived in my inbox promoting the benefits and characteristics of “authentic assignments.” Intrigued, I kept reading. The first characteristic defines such an assignment as one that is "realistically contextualized," meaning that the work asks students to "replicate or simulate ways in which students will be asked for their knowledge or skill in real-world situations." I immediately thought “We do that!” Students presenting collaboratively-generated research at conferences and SORS, identifying trees and making herbarium specimens that result in arboretum status for campus, networking with colleagues and speakers, and attending seminars are all components of what scientists do in real-world situations.

Then I received an email from a professor bragging about two of our Environmental Science students. As part of a grant-writing course they took with him this fall, they were required to work with a local non-profit and write a grant proposal. Their proposal was successfully funded! This organization now has additional funding to support their mission and the students’ work will be used to apply for funding from other sources. Talk about “authentic assignment!”

In addition to the exciting events described in this newsletter, we are also busy planning for our move into new labs in the Wedgewood Academic Center, scheduled to open in Fall 2014. The design of our teaching spaces will allow us to engage students in even more diverse types of learning through a variety of activities and assignments.

Enjoy reading about the dedicated, enthused, diligent, and—yes—authentic work of our students and faculty this past summer and fall. Be sure to visit us on Facebook and at our website to see more photos and details. Best wishes for a blessed 2013!

Dr. Darlene Panvini
Chair, Biology Department

Biology department recipient of donation

This fall, the biology department received a check for $1000.00 from the Community Foundation of Middle Tennessee. The gift is from the Betsy and Greg Ferrell Advised Fund of the Foundation. The donation has been combined with Kresge funds and will allow the department to purchase additional equipment for the Anatomy & Physiology classes. The A&P classes have experienced increased enrollment in the past semesters and welcome the addition of new equipment.

Biology donates equipment

As new equipment is added to the biology department, older equipment must find a new home. The department didn’t have to look far when Cassita Brown from Rosa Parks Middle School called to ask if the Biology department had any used equipment that could be donated. This fall nine spectrophotometers and tripods were donated to Rosa Parks Middle School where they will be used in the science department.
SEPEEG 2012
Southeast Population Ecology and Evolutionary Genetics

For the fifth year Belmont Students have participated at the SEPEEG (Southeast Population Ecology and Evolutionary Genetics) conference. Accompanied by Dr. John Niedzwiecki, six biology majors traveled to Clemson, S.C. during fall break to present their research. The meeting was held at the Clemson University Outdoor Lab from October 12 to 14. The Belmont seniors attending were Parth Majmudar, Rachel Chandler, Amy Nesius, Janet Steen, Bellamy Hawkins and Breanna Poore. During the weekend the students attended talks by graduate students and faculty from universities across the southeast, and they presented their research in the poster session on Saturday night. SEPEEG brings together scientists from institutions in the Southeastern United States to discuss their research on ecology, population biology, evolution and genetics.

Evolution 2012
American Society of Naturalists and Society for the Study of Evolution

Dr. John Niedzwiecki and Belmont honors student and biology major Rachel Chandler attended Evolution 2012 in Ottawa, Ontario, Canada, from July 6-10. It was the annual meeting of the American Society of Naturalists and Society for the Study of Evolution, but this year was billed as the First International Evolutionary Congress, as the Canadian, British and European Evolutionary Societies also attended. Niedzwiecki presented a talk in the Evolution Education Section titled “Presenting Evolution by Natural Selection at a Christian University”. Chandler presented a poster of her honors research with Niedzwiecki titled “Testing the Specificity of a Predator Cue in Relation to Phylogeny in a Salamander Sunfish System.” In addition to presenting her poster, Chandler was able to meet students and professors, and learn about the research in their labs as she prepares to apply to their graduate programs in evolutionary ecology this fall.

Tennessee Academy of Science Annual Meeting

Drs. Bob Grammer, Steve Murphree, Darlene Panvini, Nick Ragsdale, Jennifer Thomas (Biology) and a total of 27 undergraduate research students from Biology, Environmental Science and Neuroscience attended the 2012 Tennessee Academy of Science Annual Meeting held November 16 at Vanderbilt University. The Belmont students presented posters at the meeting and attended presentations from graduate students and faculty from a wide variety of Tennessee schools. The annual meeting also marked TAS’s 100th year as a science organization in Tennessee.

SURS 2012
Science Undergraduate Research Symposium

In its ninth year, SURS was held in the Maddox Grand Atrium on December 2. SURS is the high-water mark for many of these students as it gives them the opportunity to show Belmont students what the sciences are doing. Many of these students have presented their research at TAS or out of state conferences. This is the culmination of hours of work done during the summer and fall with advisors and peers. Several Biology students presenting are also part of the Summer Scholars program that takes place in the summer months here at Belmont. 26 Biology seniors, three BMB seniors, two ENV seniors and two Neuroscience seniors presented posters. An additional 13 posters were presented as well as 34 oral presentations in the areas of Chemistry, Mathematics, Computer Science and Psychological Science. The keynote address, “Guilt by Association: Understanding Stereotype Formation” was delivered by Dr. Kate Ratliff, Assistant Professor in the Department of Psychology at the University of Florida. Dr. Ratliff is a 2003 alumna of Belmont’s Psychological Sciences. Photos can be seen on our Facebook page—Serotonin Helix.
The biology department was active this summer with seventeen Biology and ENV students who participated in the Summer Scholars Program. Summer Scholars begins at the start of summer session and runs 8-10 weeks with 16 hours per week given to a research project. The program allows more time for students to work on their research with less interruption. Dr. Panvini’s crew compared rates of photosynthesis and stomatal density in leaves of exotic vines to native vines as well as compared macroinvertebrate diversity in riffles and pools in areas of the Little Harpeth River covered by tree canopy and areas not covered by tree canopy. Dr. Niedzwiecki’s group worked with behavioral and population biology questions in a variety of aquatic organisms. Dr. Ragsdale’s students worked with the animal model C. elegans to investigate innate immunity. These students presented their research at Belmont’s SURS, the TAS (Tennessee Academy of Science) Annual Meeting which was held at Vanderbilt this year and at conferences as far away as Canada and South Carolina. In the spring, these students will also present their research at BURS (Belmont Undergraduate Research Symposium).

In September the Nashville Tree Foundation, at a ceremony on Belmont’s campus, designated Belmont as an arboretum. This status is due to the efforts of Dr. Darlene Panvini and her botany students through the past six years. The identification of trees here on campus began as a lab project, but soon expanded beyond that as Dr. Panvini realized how many types of trees the Belmont campus has. Since 2006 at least 45 students have worked on the identification of trees on the main campus. Belmont is among eight other spots that were designated as an arboretum. This fall, Dr. Panvini’s botany class have completed projects that will promote the arboretum to the public as well as grade schools in the area. The full story can be read on Belmont’s website under News & Media, Belmont News. For more photos of the arboretum project, visit our Facebook page—Serotonin Helix.
Biology Faculty in the News

Owl’s Hill Nature Sanctuary

In September, Dr. Murphree led a workshop at the Owl’s Hill Nature Sanctuary entitled “The World of Invertebrates: Pollinators, Predators, Pests and Parasitoids.” 25 adult students participated. Dr. Murphree discussed the characteristics and life cycles of insects, identifying insects using keys, methods of collecting and observing insects and other arthropods as well as an overview of other arthropods (spiders, isopods, mites, etc.). The workshop was part of the 2012-13 Tennessee Naturalist program at the sanctuary. This is Dr. Murphree’s third year as an instructor in this program.

Fairy tales, monsters, nature and genetics at The Frist

Biology and art connected at The Frist in May as Dr. John Niedzwiecki gave a gallery talk entitled “Connecting Disciplines: Mutation: Nature’s Creative Force”. His talk was in response to the exhibition showing at the Frist, “Fairy Tales, Monsters and the Genetic Imagination”. The art exhibit showcased contemporary artists’ work using humanlike, animal or hybrid creatures that symbolize our desires, fears and mysteries. Dr. Niedzwiecki discussed genetics and the biology behind mutations.

Insects of the Night

In July, Dr. Steve Murphree was a speaker at the Warner Parks Nature Center’s “Insects of the Night” festival. Dr. Murphree set up a UV light/scorpion tent for the event. The highlight of the evening was the insect parade where participants dressed as their favorite insect. Biology Associate Professor Lori McGrew and environmental science student Erin Pitts also were volunteers. Erin worked at Warner Parks Nature Center this summer.

Biolo-teas

What do you get when you combine biology students with tea time? Biolo-teas! Dr. John Niedzwiecki’s idea was to get biology students together in a setting where they could talk to their peers about research, career opportunities and just have the opportunity to engage in conversation outside of the lab and classroom. This informal setting has been a success as students have come away with plans to go to Belize, ideas for research and career plans. Biolo-teas was held in October and November for the fall semester and will come again in the spring semester.

Fall Semester Biology Speakers

This fall, students and faculty had opportunities to hear from numerous speakers, including:

Dr. Todd Graham from the Department of Biological Sciences, Vanderbilt University, presented a talk on his research entitled “The Flipside of Protein Transport and Membrane Biogenesis”.

P53 Double Feature

Dr. Chris Barton and Dr. Roger Jackson, are full time adjuncts in the biology department who were doing post doc research at Vanderbilt University. Drs. Barton and Jackson talked about their research with the p53 gene to students and faculty here in October. An additional room had to be opened to accommodate the number of students who attended the talk. Additionally, several speakers and guests were on campus from health-related graduate and professional schools to talk about their programs.

Alumni: if you would be interested in talking with current students about your career path and experiences, please contact us.
Alumni Corner

Ashley Newsome (12)
Is attending Medical School at the University of Mississippi where she is doing rounds and lab rotations.

Ola Osinusi (11)
Has been accepted to three dental schools—UT, Memphis, University of Louisville and Howard in Washington D.C. Ola hasn’t decided yet which school to attend, but will begin school in August.

Amanda Castro (11)
“I’ve been working at Aegis Sciences Corporation for almost two years now and I’m thrilled to have just been promoted! I have been working in an entry level position as a Forensic Evidence Processing Technician and I am now working as a Forensic Mass Spectrometry Technician. I am the first member of the FEPL team to be hired into FMSL team. I am thrilled to have been considered and given the position. It will lead to more training opportunities with the company as well as even more upward movement. I am very excited to share this with the department that made it all possible by believing in me and helping me move forward”.

Jimmy Bertaud, M.D., M.P.H. (06)
Resident, Tulane Medical Center
“Just wanted to give you guys an update on Tulane and New Orleans before I work in the hospital again for the next 2 weeks. Tulane is a great place—the undergrad/grad school and medical school/hospital are in 2 different parts of the city. This is a very different place than Nashville—it’s a much more liberal and party-oriented place than I expected. Seems like every month there is some sort of festival going on here, including Mardi Gras in February”.

Jo Ellen (Bennett) Wilson (04)
Has been promoted to chief resident of Inpatient Psychiatry at Vanderbilt University for the next academic year.

Current Students Update

Crystal LeBlanc, a biology junior, participated in the undergraduate summer research program, RiSE (Research in Science and Engineering) at Rutgers/UMDNJ, http://rise.rutgers.edu. Crystal was one of only 35 talented individuals admitted to the program from a national applicant pool of over 450.

Gabrielle Hampton, a biology senior, participated as the camp director in Next Generation Now Summer Enrichment Program that benefits children in the Edgehill area. In previous summers Gabrielle was a camp counselor, but this year she was the director of the camp.

Alicia Hsu, a biology sophomore, is also a champion skater. Hsu competed this summer and placed tenth in competition in the short program of the 2012 United States Collegiate Figure Skating Championships held in South Dennis, MA.

Congratulations to Fall 2012 Alpha Chi Inductees!

Biology
Scott Kim
Haley Kinney
Morgan Wilters

Alpha Chi membership is the highest academic honor awarded by Belmont University. It is an international, interdisciplinary honors society open to junior and senior university students who rank in the top 10 percent of their class.

Gabrielle teaches students about human anatomy this summer.

Alicia Hsu, top row, center, displays Belmont’s colors at the skating competition.
We want to hear from you! Please take a moment to fill out the information below and send to us.

Name_________________________Graduation Year_______________

Address____________________________________________________

City_________________________State_________Zip Code_________Phone_________

Email address_________________________________________________

Employment__________________________________________________Title________________________________

Recent promotion, honor, award, family activity?_____________________________________________

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