



BioSynthesis

Volume 6, Issue 3 (October 2007)

BioSynthesis On-Line: <http://departments.bloomu.edu/biology/biosynthesis.html>

Fall Semester Dates

- OCT 1— 4:** Career Night Speakers, 7 p.m. 86 HSC
- OCT 3:** BAHS Club, Owl Hike with Dr. Corbin
- OCT 6:** Pre-Med Club trip to AED Conference at Thomas Jefferson University, Philadelphia
- OCT 8:** BAHS Club, 5 p.m., 142 HSC, Medical Imaging Workshop with Dr. Kipe-Nolt
- OCT 9:** Tri-Beta Tutoring, 5 p.m., 72 HSC
- OCT 16:** Pre-Med Club Speaker: PA College of Podiatric Medicine 5 p.m., 97 HSC; Tri-Beta Tutoring, 5 p.m., 72 HSC
- OCT 17:** BAHS Seminar Series, Kathy Slater, noon
- OCT 18:** Tri-Beta Bake Sale: hartline Lobby
- OCT 19:** BAHS Seminar Series, Dr. Jewett-Smith, 3:00 p.m.; Tri-Beta applications due to Dr. Surmacz.
- OCT 22:** BAHS Club, 5 p.m. in 142 HSC, Meet Dr. Angela Hess.
- OCT 23:** Tri-Beta Tutoring, 5 p.m., 72 HSC
- OCT 30:** Pre-Med Club, Speaker, Ross University, 5 p.m., 97 HSC; Tri-Beta Tutoring, 5 pm, 72 HSC.
- NOV 11:** Great American Smoke-Out Race
- NOV 16:** BAHS Seminar Series, Dr. Petokas, 3 p.m.



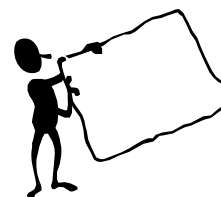
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Welcome to a New Academic Year!

The BAHS Club's Meet and Greet Picnic kicked off the 2007-2008 academic year with pizzazz! We are now underway—the first set of exams are behind most of us and labs are moving forward full swing. We hope that you are off to a good start and are on your way to having a rewarding and successful academic year. Check out all the BAHS has to offer—we are a diverse and active department. There are numerous opportunities for you to get involved and extend your education whether your interests lie in the health sciences or in biology. How can you find out what's going on? Handy sources of information are: 1) our BAHS Website (<http://departments.bloomu.edu/biology/>) 2) the bulletin board near the elevator on the "green floor," and 3) *Biosynthesis*, the department newsletter (also on-line at the BAHS website). So go ahead and join a club, start a research project, attend a seminar (see below), serve the community, attend a career workshop, form a study group, or engage in discussion with a guest speaker. Jump in!

BAHS Seminar Series begins this semester



This fall BAHS would like to invite all students, faculty and interested guests to attend our new seminar series. Invited speakers from this region and beyond will be giving 50 minute talks on a variety of biology and health science related topics. This semester topics will range from the conservation and natural history of a "giant" amphibian and stream ecology here in Pennsylvania, to opportunities for students to do research abroad in exotic locations. These seminars are meant to stimulate interest and discussion amongst the students and faculty in the department and we hope all will attend. A tentative list is of seminars for the fall semester is given below. Locations will be announced. Look for signs announcing details.

- Wednesday, October 17 at 12:00 p.m., Kathy Slater, Operation Wallacea
- Friday, October 19 at 3:00 p.m., Dr. Jerilyn Jewett-Smith East Stroudsburg University
- Friday, November 16 at 3:00 pm., Dr. Peter Petokas, Clean Water Institute, Department of Biology, Lycoming College, Subject: Hellbenders

Medical Imaging Workshop
 Hosted by BAHS Club
 Tuesday, October 8, 2007, 5:00 p.m., 142 Hartline
 Presented by
 Drs. Hranitz and Kipe-Nolt
 Topics: Applying to MI clinical programs, how to prepare a resume, essay writing pointers, asking for letters of recommendation, and more!



Celebrating Student Success

Dean's List

Congratulations to Biology and Allied Health Students who earned a GPA of 3.5 or greater and were named to the Dean's List for Spring Semester 2007. Great job!

Medical Imaging

Andre Acevedo, Jillian Anthony, Jason Craig, Brittany Dechert, Elyssa Goldstein, Rashel Hagmayer, Elizabeth Heim, Jacob Hiller, Cory Hoffman, Lauren Keeny, Jessica Kloc, Katie Krause, Jennifer Kubilus, Samantha Langley, Ashley Leimbach, Laura Lorito, Christine Lucasti, Kaitlyn Manley, Eric Matheis, Mallory Matzura, Julee Pershing, Heidi Portzline, Leah Redinski, Peter Rigel, Jeanne Roszel, Nicole Seward, Rachel Sorber, Tracy Stach, Ann Strizak, Jessica Yeager, Rachel Walter, Taylor Washburn, Kevin Wray

Biology

Andrew Ackerman, Amanda Addis, Taylor Anderson, Kyle Bartol, Nicholas Bixler, Justin Blessing, Sarah Bounds, Samantha Bussanich, Travis Castleberry, Erinda Como, Courtney Dean, Lane Detwiler, Melissa Dobson, Kimberly Dodson, Kaylee Fischer, Kelsey Grabert, Allison Grimm, Laura Halon, James Heim, Robert Heim, Alexander Hildebrandt, Phuoc Ho, Michael Hollman, Deborah Hunsberger, Logan Karas, Erica Kocher, Jennifer Krott, Christopher Krum, Justin Lavo, Cory Lavoie, Devon Lyons, Charles Martin, Jared May, Talia McAlister, Caitlin McGeary, Marys Sandra Newell, James Noll, Jamilah Patton, Krista Rae Petruskevich, Kelly Pidgeon, Stephanie Simpson, Erica Smith, Philip Sobolesky, Kimberly Straub, Cori Suplee, Kenneth Thomas, Maxwell Tolan, Robert Wert, Jamie Willour, Ashley Yelinek, Danielle Yoder, Catherine Zimmer

Pre-Occupational Therapy

Stephanie Fowler

BAHS Interns Gain Hands-On Experience

Internships are a great way to get on-the-job experience and earn credits at the same time! BAHS offers 50.490, Internship in Biology, to eligible juniors and seniors. While internships may vary from 3 – 15 credits, no more than 3 credits may be applied as biology electives. Internships may be paid employment or may be volunteer. To learn about internship opportunities and procedures, contact your academic advisor.

Medical Imaging Internships. BAHS continues to offer internships in Medical Imaging with the continuing cooperation of Geisinger Medical Center (GMC), Bloomsburg Hospital (BH), and other facilities. Advising these internships are **Drs. Kipe-Nolt** and **Hranitz**. GMC interns for the summer of 2007 were **Heather Gladfelter**, **Kaitlyn Manley**, **Amanda Peterman**, and **Joanie Thomas**. **Jenna Ruppert** completed a sonography internship at Apple Hill Vascular Associates Inc. in York in the summer of 2007. **Rachel Stoehr** completed a medical imaging internship at Altoona Regional Health Center in the summer of 2007.

Medical imaging interns at GMC for the fall of 2007 are **Lindsay Cartin** and **Kelsey Castle**. **Jonathan Mengel** is completing a medical imaging internship at Bloomsburg Hospital this fall.

Several BAHS students have conducted internships in physical therapy. **Danielle Yoder** served as an intern in the In-Patient Physical Therapy Department at Reading Hospital. **Krista Rae Petruskevich** interned at Star Physical Therapy in Marion Heights, PA. **Aryn Mehlbaum** is a Physical Therapy intern at Pottsville Physical Therapy Services in Pottsville, PA. This semester **Kimberly Dodson** is an intern at Susquehanna Physical Therapy Associates in Bloomsburg and **Michael Root** is serving as an intern at Phoenix Rehabilitation and Health Services in Bloomsburg.

Brock Spinks completed an internship in Microbiology at Hunterdon Medical Center in the summer of 2007. Mainline Medical Associates in Altoona, PA was the internship site for **Lindsey Ballos**.

Trinity Stempko is away from BU this semester completing an internship through the University of Southern Mississippi at the Gulf Coast Research Laboratory in Ocean Springs, MS.

Have you conducted an internship recently? Please send Dr. Surmacz a note (csurmacz@bloomu.edu) to share your experience with *BioSynthesis* readers.

News from Department Organizations

The Pre-Medical Sciences Club



The Pre-Medical Sciences Club welcomes all students interested in any of the medical sciences (allopathic or osteopathic medicine, optometry, podiatry, dentistry, veterinary medicine, etc.) The club plans to sponsor a variety of activities this year including guest speakers, visits to professional schools, community service, and review sessions for the MCAT. Serving as officers this year are: President, **Nick Bixler**; Vice President, **Pam Hudock**; Secretary, **Kyle**

Bartol; Treasurer, **Yveny Eustache**; and Public Relations, **Eileen Burkett**. **Dr. Ardizzi** is the club advisor. The group will be traveling to the AED conference at Thomas Jefferson University in Philadelphia. Two speakers are scheduled for October. Mr. David Martin from the Philadelphia College of Podiatric Medicine will give a presentation on October 16, 2007 at 5 p.m. in 97 HSC. Mr. Powers from Ross University will speak at 5 p.m. on October 30, 2007 on programs in medicine and veterinary medicine in 97 HSC. The group plans to have MCAT review sessions on Tuesdays at 5 p.m. whenever the club is not meeting. If you are interested in participating in the MCAT study sessions, please contact **Kyle Bartol** (kdbartol@bloomu.edu). The club will also participate in the Great American Smoke-Out Race that starts from the Bloomsburg YMCA on Sunday, November 11 and is planning to prepare a banner for Homecoming. Please contact **Nick Bixler** if you are interested in participating in any of the club activities (nsbixler@bloomu.edu).

Biology and Allied Health Sciences Club

The Biology and Allied Health Club welcomes all interested students to join in club activities. Pictured at right are the club officers: President, **Debbie Hunsberger**; Vice-President: **Nicholas Bixler**; Secretary, **Melissa Scubelek**; Activities Coordinator, **Jillian Anthony**; and Treasurer, **Erin Buckwalter**. Club advisors are **Drs. Hranitz, Brubaker, and Corbin**. The group meets every other Monday at 5 p.m. in 142 Hartline. This month's meetings and programs include a Medical Imaging Workshop with **Drs. Kipe-Nolt and Hranitz** on October 8 and an opportunity to meet **Dr. Angela Hess**, a new BAHS faculty member, on October 22. The club is selling Victoria's candles this year as a fundraiser. For more information on the club, see the bulletin board directly across from the restrooms on the green floor or sign up for the BAHS club community on Blackboard by contacting **Deb Hunsberger** at dlhunsbe@bloomu.edu. Through the Blackboard site you can view announcements, learn about upcoming events, and participate in the club discussion board.



Tri-Beta Biology Honor Society

Beta Beta Beta (Tri-Beta) is an honor society for biology students who achieve superior academic records and who display an aptitude for and interest in the life sciences. Its mission is to stimulate scholarship, to disseminate scientific knowledge, and to promote biological research. In the past year, our local chapter hosted a reception for graduating seniors, supplied coffee and donuts during finals week, attended the College of Science and Technology Honors banquet, initiated weekly tutoring sessions for students in introductory biology courses, and provided "biology games" at the Siblings & Children's Weekend. This year's officers are President, **Travis Castleberry**; Vice-President, **Kim Dodson**; Secretary, **Jennifer Krott**; Treasurer, **Jared Geissinger**; Historian, **Allison Grimm**. **Dr. Surmacz** is the Tri-Beta advisor. The chapter

recently sent out membership invitations to eligible juniors, seniors, and graduate students. The deadline to submit completed applications to Dr. Surmacz is Oct. 19. The Initiation Ceremony and Reception will be held on Thursday, Nov. 1 at 5 p.m. in the Schweiker Room, Andruss Library. Family and friends are invited to attend. See any officer or Dr. S for more information.

Meet our New Faculty

WELCOME

Two new faculty members have joined BAHS this year, Dr. Karl Henry and Dr. Angela Hess. Meet them in this exclusive *Biosynthesis* interview.

Karl Henry, Ph.D.

Where are you from?

Most recently, I was living in West Chester, PA. I have been in the Philadelphia area for the last 10 years after moving down from Maine for graduate school.

Where did you receive your education?

I received my B.A. in Biology with a minor in Biochemistry (1996) from the University of Southern Maine in Portland, ME. I have a Ph.D. in Microbiology and Immunology (2001) from The Medical College of Pennsylvania and Hahnemann University School of Medicine and did my postdoctoral training (2001-2004) at The Wistar Institute in Philadelphia, PA.

What is your area of expertise?

Medical Microbiology, Medical Mycology, Molecular Biology, Infectious Disease/Pathogenesis



Where have you taught previously?

While I was an Assistant Professor at Drexel University College of Medicine, I was involved in teaching the Medical Microbiology, Medical Genetics, and Molecular Pathogenesis courses. As a senior graduate student, I was a lecturer in transcriptional regulation for the Cell and Molecular Biology graduate course. Lastly, as an undergraduate, I was a lab instructor/T.A. for Parasitology.

What is your area of research?

I am interested in understanding the mechanisms behind drug resistance in pathogenic fungi. More specifically, I work on the transcriptional regulation of genes involved in multidrug resistance, such as those that encode for multidrug efflux pumps, in the opportunistic fungal pathogens *Candida albicans* and *C. glabrata*. Since drug resistance is an important problem in these organisms and often results in therapeutic failure, understanding the mechanisms behind this phenomenon could lead to novel drug targets and better treatment options.

Another major virulence factor in *C. albicans* is its ability to transition between an ovoid yeast form to a filamentous hyphal form in the human host. It is thought that this morphological conversion is essential for dissemination from the mucosa to the bloodstream since mutations that inhibit this transition result in a loss of pathogenicity. Recently, I have begun work to try to identify factors that are involved in regulating genes that are important for both the yeast-to-hyphae transition as well as biofilm formation in *C. albicans* and *C. glabrata*.

What classes are you teaching at BU?

Introductory Microbiology (50.240), Medical Microbiology (50.342), and Medical Parasitology (50.470).

What do you do for fun?

I mostly enjoy playing and spending time with my children, Danielle (7) and Tommy (3). If I have any energy left after that, I enjoy cycling, reading, and cooking.



Angela Hess, Ph.D.

Where are you from?

Bloomsburg

Where did you receive your education/training?

I started my undergraduate education at Bloomsburg University and transferred to Penn State University where I earned a B.S. in Microbiology with a minor in Biochemistry and Molecular Biology. I then went to the University of Iowa in Iowa City, Iowa, where I earned a Ph.D. in Anatomy and Cell Biology with an emphasis in molecular medicine. I then did my post-doctoral training at the University of Iowa, through a fellowship from the Holden Comprehensive Cancer Center, and at the Children's Memorial Research Center in Chicago IL. Before returning home to Bloomsburg, I was a Research Assistant Professor in the Department of Dermatology at Northwestern University in Chicago, IL.

What is your area of expertise?

My area of expertise is the signal transduction mechanisms that promote melanoma metastasis...and of course human anatomy and cell biology!

Where have you taught previously?

I have taught human anatomy to medical and dental students at the University of Iowa, as well as to undergraduates at William Rainey Harper College in Palatine, IL.

What is your area of research?

I study the signal transduction mechanisms that promote melanoma growth and metastasis, specifically the role of the Eph family of protein tyrosine kinase receptors.

What classes are you teaching at BU?

I am teaching Concepts in Biology I laboratories and Anatomy and Physiology I laboratories.

What do you do for fun?

I enjoy spending time with my husband and two little boys (3 years and 6 months.) When I have spare time I like to do paper crafts (i.e. card making and scrapbooking), cross-stitch, and cook...I make awesome chocolate chip cookies and shoo-fly pie!

Who's Who in BAHS?

Department Chairperson Dr. George Chamuris, 126 & 105 HSC

Assistant Chairperson Dr. Marianna Wood, 104 HSC

Allied Health Coordinator Dr. Judith Kipe-Nolt, 269 HSC

Graduate Program Coordinator Dr. Carl Hansen, 123 HSC

Radiologist Assistant Program Coordinator Mrs. Christine Mehlbaum, 265 HSC

Department Webmaster Dr. Marianna Wood, 104 HSC

Department Pre-professional Committee: Dr. Joseph Ardizzi, 106 HSC and Dr. Mark Melnychuk, 266 HSC

Introducing our Office and Lab Staff

The BAHS department office is housed in 125 Hartline (the room with the large picture window!) We welcome back **Ms. Vicki Beishline**, our department secretary. Our new part-time student secretaries are **Ghaith Ibrahim** and **Vanessa Tyler**. **Mrs. Melinda Diltz** serves as our Biology Lab Coordinator. Undergraduate lab assistants include **Catherine Willis** and **David Kolb** in Microbiology and **Kimberly Dodson** in Anatomy and Physiology. **Mary Sue Buss** is a research assistant for Dr. Nolt.



What's Cookin' in the Research Labs?

The BAHS research labs are busy places this semester and the faculty have diverse research interests. Topics under investigation this semester include all levels of biological organization ranging from molecular biology to population biology and involve everything from running gels to venturing out in the field. You are encouraged to consider conducting engaging in research during your college career. Research is a wonderful opportunity for you to actually “do science.” Get introduced firsthand to the essential tools that biologists use to learn about living things. Research teaches you how to ask good questions. From this starting point, you will learn how to formulate hypotheses, make predictions, design experiments, and analyze data. Research also gives you experience in presenting your work in writing and orally. These are all important skills for many career paths and may be the key ingredient to help you gain entrance to a graduate program or professional school or land that all-important first job. Feel free to visit any of the BAHS faculty to seek out research opportunities. A brief overview of faculty research interests appears at the BAHS website (www.departments.bloomu.edu/biology). Faculty are eager to involve you in their research.

Research News

Dr. George Davis (BAHS, Bloomsburg University) and **Dr. Mark Stocksdales** (Chemistry Department, Earlham College) recently received a grant from the US Department of Agriculture (USDA) for \$100,000 to study “Uptake Specificity of Synthetic Phytosiderophore Analogs by Gramineaceous Plants.” The grant will fund research for two years and will involve undergraduates at both Bloomsburg and Earlham. Students interested in doing research on this project at Bloomsburg during the summer of 2008 should contact Dr. Davis.

Dr. Steven Rier is the lead author on this month's featured article in the *Journal of the North American Benthological Society*. The title of this paper is *Algal regulation of extracellular enzyme activity in stream microbial communities associated with inert substrata and detritus*.

Drs. Surmacz and **Rier** received a Collaborative Grant from Bloomsburg University for \$973 to study the “Use of *Lumbriculus variegatus* to monitor the impact and remediation of acid mine drainage (AMD) on streams.” **Jared Geissinger** is working on this project as part of the course Research in Biology I. This project will use the aquatic blackworm *Lumbriculus variegatus* as an indicator of stream health by comparing several biological responses of the worm following exposure to water collected from Morris Run (a stream impacted by AMD), Lick Creek (a remediated AMD stream that has treatment systems installed), and Sand Run (an un-impacted control stream). In this way, blackworms will be used to assess remediation efforts in streams impacted by acid mine drainage, an important step in monitoring the restoration of Pennsylvania streams.

Mike Dzwonek (pictured at right) conducted research with **Dr. Rier** and his colleagues this summer on the effects of acid mine drainage on stream nutrient dynamics. This research involved measuring nutrient uptake, microbial metabolism, and extracellular enzyme activities in three streams located in Tioga County. Mike also helped Dr. Rier initiate research on the effect of acid and nitrogen deposition on stream nutrient dynamics in the Fishing Creek watershed.

Valerie Letukas spent the summer doing research on Herpes Simplex type 1 Virus (HSV-1) at the University of Iowa in the laboratory of Dr. Richard Roller. She will be presenting her research results later in the semester – watch for an announcement.

Josh Montgomery, **Shirshendu Saha**, and **Missy Tomcavage** are working in **Dr. Davis's lab** on the isolation and characterization of the iron-avenic acid transporter gene from oats, *Avena sativa*. They will also be analyzing the uptake of modified avenic acid conjugated to fluorescein by oat roots.

Zachary Wert received third prize for his platform presentation in the Ecology and Evolution category at the spring meeting of the Commonwealth of Pennsylvania University Biologists. **Dr. Corbin** is Zac's advisor.

Andrew Troutman worked this summer with **Dr. Brubaker** on cloning a conserved fragment of Daf-16, Forkhead A1, Forkhead C2, and Forkhead D3 transcription factors. Clones were successfully obtained for each factor from at least three different larvae of *M. apicalis*. Andy is currently trying to clone the 5' and 3' ends of the gene using RACE.



More Research Updates

Chelsea Barnes is a graduate student working toward her Master of Science in Biology. Her research studies how the distribution of stream salamanders is affected by disturbances such as acidification and sedimentation. **Dr. Hranitz** is her thesis advisor.

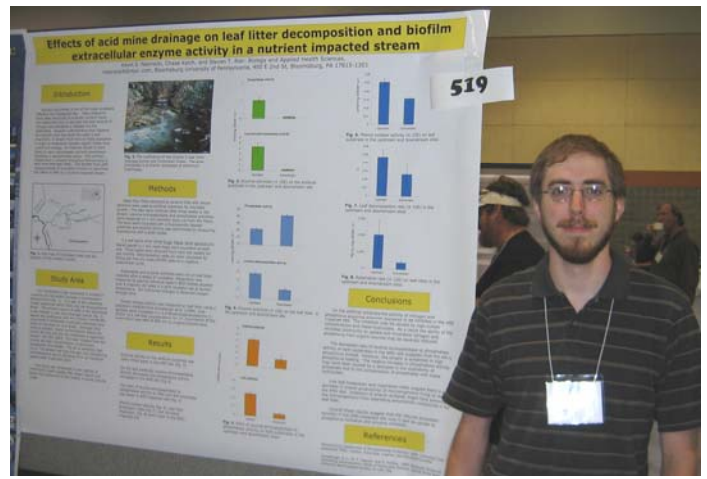
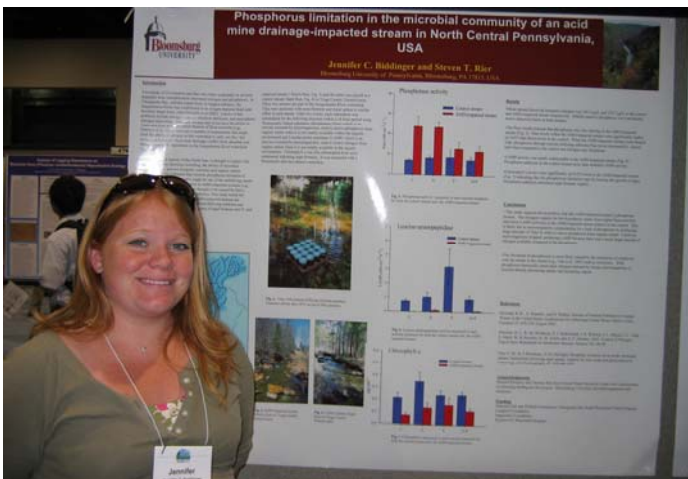
Dave Kessler is an undergraduate student who is sequencing part of the cyt b gene and an intron of the myoglobin gene in African Blue Flycatchers with **Drs. Hranitz** and **Corbin**.

Chris Krum is an undergraduate student comparing cDNA and translated stress protein (HSP70 and HSP90) sequences in two leafcutting bees, *Megachile fidelis* and *M. apicalis*. He is working in **Dr. Hranitz's** lab.

Mike Sedon is an undergraduate student working in parallel with Chelsea Barnes to investigate how stream disturbance influences bankside salamander communities. **Dr. Hranitz** is his research advisor.

Amy Savitski is an undergraduate student who traveled to Turkey and Greece as part of an NSF-REU this summer. She worked with researchers to collect leafcutting bee samples in Greece. She is comparing the genetic diversity of *M. apicalis* in samples from two islands, Lesvos (Greece) and Sante Cruz Island (California, USA). Amy is working in **Dr. Hranitz's** laboratory.

Jennifer Biddinger (photo below at left) and **Kevin Nawrocki** (photo below at right), both research students of **Dr. Rier**, presented their research at the 55th annual meeting of the North American Benthological Society (NABS) in Columbia, S.C. This meeting was attended by nearly 1,000 participants from North and South America, Europe, Australia, New Zealand, and South East Asia. Kevin's poster presentation was titled "Effects of acid mine drainage on leaf litter decomposition and biofilm extracellular enzyme activity in a nutrient impacted stream" and was coauthored by **Chase Kelch**, a former research student of Rier. Jen's poster presentation was titled "Phosphorus limitation in the microbial community of an acid mine drainage-impacted stream in north central Pennsylvania, USA." The meeting was also attended by **Cory Lavoie**, who has also conducted research with Dr. Rier. NABS is an international scientific organization whose purpose is to promote better understanding of the biotic communities of lake and stream bottoms and their role in aquatic ecosystems.



Kendra Sobolesky is studying the performance of a full-scale anaerobic digester utilizing cheese whey for the production of methane gas. Her field studies at the Sun-Re Cheese Plant in Sunbury include monitoring the quantity and quality of gas produced, assessing odors, and measuring the organic matter content of the digester effluent. She is also conducting laboratory studies (maybe you've caught a whiff!) on the optimal proportions of poultry manure to cheese whey, pH balance, and use of other manure sources. **Dr. Nolt** is her research advisor.



Spring Biology Electives

Here's a "heads up" on the BAHS biology elective offerings for Spring Semester: Comparative Vertebrate Anatomy (**Dr. Corbin**), Medical Microbiology (**Dr. Henry**), Immunology (**Dr. Brubaker**), Special Topics - Mutualism (**Dr. Kipe-Nolt**), Bioinformatics (**Dr. Hansen**), Molecular Biology (**Dr. Davis**) and Introductory Pharmacology (**Dr. Till**). The spring physiology offerings are Comparative Animal Physiology (**Dr. Hansen**), Plant Physiology (**Dr. Williams**), and Integrated Physiology Lab (**Drs. Hansen and Williams**).



Pre-professional Committee UPDATES

What is the pre-professional committee?

The BU pre-professional committee assists students in gaining admission to professional schools such as allopathic, osteopathic, podiatric, or veterinary medicine, as well as dentistry, optometry and chiropractic medicine. The committee's mission is to provide advisement, assist with the application process, evaluate student credentials, prepare committee recommendation letters, obtain resources for students relating to professional schools, and establish relationships with professional schools. The committee recently hosted a meeting at Andruss Library for students interested in the pre-medical sciences. The co-chairs of the committee are **Drs. Joseph Ardizzi** and **Mark Melnychuk** from BAHS. Other committee members include **Dr. Cindy Surmacz** (BAHS) and **Drs. Christopher Hallen** and **Toni Trumbo-Bell** from Chemistry. For more information on pre-medical sciences at BU, students are encouraged to check the committee's website (<http://departments.bloomu.edu/biology/preprof.htm>) and the bulletin board outside room 106 HSC. You are also encouraged to join the Pre-professional / Graduate Community on Blackboard by contacting Dr. Trumbo-Bell (tbell2@bloomu.edu).

MCAT News

The MCAT exam is now computerized and is administered over 20 times per year with your choice of a morning or afternoon testing session. Score reports will be available in 30 days. When available, the official dates for the 2008 MCAT exam will be posted at <http://www.aamc.org/students/mcat/>

Sign up for the Pre-Medical Science Option

Students who are interested in the pre-medical science option in the B.S. Biology degree can sign up at the Academic Advisement Office, 216 Student Services Center. For more information, contact your academic advisor. The pre-medical sciences curriculum sheet can be downloaded from http://departments.bloomu.edu/biology/curriculum_sheets.html

Check out these Upcoming Events

- Friday, October 12, 2007. The Annual Doctor of Osteopathic Medicine Open House will be held from 6:00 until 8:00 p.m. You will have the opportunity to learn about osteopathic medicine, life at medical school, osteopathic manipulative therapy, meet students, and tour the campus. You must indicate your participation by contacting PCOM's Office of Admissions by October 8, 2007. You may phone 1-800-999-6998 or email admissions@pcom.edu
- Saturday, October 13, 2007. The New York College of Podiatric Medicine in New York City is hosting an Open House from 9 to 11:30 a.m. The program provides opportunities to learn more about the field of podiatric medicine and includes presentations by podiatrists and students, a tour, and a question and answer session. To register, see www.nycpm.edu
- Tuesday, October 16, 2007. Mr. David Martin from Temple University's School of Podiatric Medicine will give a presentation on podiatric medicine at 5 p.m. in Hartline Science Center. The room will be announced at a later date
- Saturday, October 27, 2007. The Lake Erie College of Osteopathic Medicine is having its annual "Discover LECOM on Campus Day." Students will tour the facility, see a Gross Anatomy Lab presentation, an osteopathic manipulation presentation, a microbiology lab presentation, get an overview of the Doctor of Osteopathic Medicine program, and have a trolley tour of the city of Erie. To register, call (814)-866-6641 or email mcrosswhite@lecom.edu The last day to register is Monday October 22, 2007.
- Tuesday, October 30, 2007. Mr. Powers from Ross University will speak at 5 p.m. on their programs in medicine and veterinary medicine. The room in Hartline Science Center will be announced at a later date.



Practice GRE Offered

The GRE is a standardized exam required for many graduate and professional programs. The Psychology Association is sponsoring a Practice GRE on Saturday, October 20th from 9:00 a.m. until noon in CEH 218. Breakfast will be available at 8:30. Register for the practice test at the Psychology Student Lounge on the second floor of McCormick at the following times: Mondays and Wednesdays, 10 to 11 a.m. and 2 to 4 p.m.; Tuesdays 11 a.m. to 2 p.m.; Thursdays from 11 a.m. to 12 p.m.; and Fridays from 10 a.m. to 11 a.m. Cost for the event is \$10 (cash only). The exam will be administered by a faculty member. GRE scores will be confidential and mailed directly to you. Students from all majors are welcome to register for this event. The Psychology Association plans to host another Practice GRE in the Spring.



Allied Health News

BAHS MI Students visit Johns Hopkins

Drs. Nolt and Kipe-Nolt accompanied an enthusiastic group of Medical Imaging students to visit Johns Hopkins Hospital in Maryland last month. It was a great opportunity for the students to learn about the clinical programs, to take a tour, and to see state of the art imaging technology. It was also great to see some of our current students in action and to chat with alumni who are employed there. Making the journey were: **Dr. Barry L. Nolt, Dr. Judith Kipe-Nolt, Nikki Seward, Erin Laedlein, Erin Linkoski, Lindsay Cartin, Jenna Ruppert, Jon Mengel, Grant Poppenwimer, Heidi Portzline, Suzie Wade, Justin Singer, Ellie Daniels, and Rashel Hagmayer.**



BAHS Students Head to Clinical Programs

Over 40 BU students have entered clinical programs this semester. Their clinical sites and specialties are listed below (Key: R, Radiologic Technology; RT, Radiation Therapy; MRI, Magnetic Resonance Imaging; CT, computerized tomography; NM, Nuclear Medicine; S, Sonography; CS, Cardiac Sonography; CVT, Cardiovascular Technology; CLS, Clinical Lab Science.)

Johns Hopkins Hospital: **Raymond Castillo** and **Lauren Keeny (NM), Katie Krause (R/MRI), Samantha Langley (R/CT)**
 Drexel University Hospital: **Caitlyn Scout (R)**; Connemaugh Medical Center: **Matthew Getz (R)**; SUNY Downstate Medical Center: **Laura Lorito (R)**; Valley Hospital: **Erica Mattheis (R)**; University of Pennsylvania Hospital: **Jennifer Dersch, Jason Craig, and Rachel Sorber (R)**; Abington Memorial Hospital: **Corey Hymovitz, Lorianne Joseph, Ryan Kaub, Kate Shire, Lindsay Karl (R)**; Wyoming Valley Hospital: **Brittany Dechert, Nathaniel Machey, Peter Rigel, Jeanne Roszel, Tracy Stach, Jessica Yeager (R)**; College Misericordia: **Alyssa Maschuck, Stephanie McGaw, Julee Pershing, Nikkea Sabatino (S)**; Wyoming Valley Hospital, Wilkes Barre: **Sarah Bucchi and Dawn Tobias (S)**; Lancaster General Hospital: **Erik Davis (CVT)**; Geisinger Medical Center: **Jessica Boyer, Tony Divel, Michael Edwards, Jacqueline Gribbin, Aaron Laubach, Mallory Matzura, Jaclyn Nice, Georgia Palmeter, Tina Stere, Rachel Walter, and Kevin Wray (R)**; Robert Packer/Guthrie Medical Center: **Alessa Dalpiaz and Zane Hoover (CLS)**; York Hospital/Wellspan: **Andrea Finch and Kim Maddalozzo (CLS)**.

Learn About Careers!

Please join us for the following sessions on careers allied health and biology.

Tuesday, October 2, 7:00 p.m., 86 HSC.

Mr. Ken Roszel, Program Director, Geisinger Medical Center School of Radiologic Technology

Wednesday, October 3 at 7:00 p.m. in 86 HSC.

Karen Avery, Teacher, Milton High School and Brian Brecht, Physical Therapist, Phoenix Rehabilitation and Health Services.

Thursday, October 4, 7:00 PM, Hartline 086

Ed Beitz, Clinical Lab Science, Susquehanna Health System and Marty Friday, Water Management Biologist, PA Department of Environmental Protection

Thursday, November 15, 7:00 p.m. in 86 HSC.

Mr. Don Sharples, Director of Admissions, Thomas Jefferson University, will discuss programs in physical therapy and occupational therapy and their new offering in pharmacy.

A Tale of Two Islands: Themes From Classic Literature in Travel and Research on Lesvos (Greece) and Santa Cruz (USA) Islands

By Dr. John Hranitz

Like the Dickens classic "A Tale of Two Cities," this story is rooted in history and duality. Dr. John Barthell, a professor at the University of Central Oklahoma, and I met and worked together as faculty at the University of Central Oklahoma beginning in 1995. We conducted research on an invasive leaf-cutting bee's (*Megachile apicalis*) unique ability to nest at high temperatures and showed that female *M. apicalis* nest in risky, high temperature grasslands containing a preferred invasive plant host, yellow-star thistle (photo at right). The two immigrants found each other because both Old World species prefer hot, dry habitats; not unlike the way fate introduced Luci Manette and Charles Darnay in Dickens' classic. Surprisingly, we know very little of this bee's native distribution and habitat use in the Old World. I was excited last winter to receive an invitation from Dr. Barthell to join their NSF-funded research team studying social and solitary bees in Turkey and Greece and compare native (Island of Lesvos) and non-native (Santa Cruz Island) populations of *M. apicalis*. Amy Savitski, an undergraduate at BU, was selected for the research team bringing the total to four faculty and six student researchers traveling through Turkey and Greece. We arrived in Istanbul and absorbed the culture while arranging travel to Ankara (Turkey) and Lesvos (Greece). Known as Constantinople in the Byzantine era and positioned at the junction between Europe and Asia, Istanbul is one place where Eastern and Western Civilizations meet. The layers of the city and the Aegean coastline reveal serial civilization by Greek, Roman (Byzantine), and Turkish inhabitants coincident with introductions of new culture, science, and technology. As in Homer's *Iliad*, we stood at the archeological site of Troy, surveying the Trojan plain where the first Achilles' tendon gained notoriety. At times, the expedition seemed reminiscent of Homer's *Odyssey* because travel involved the art of witty negotiation with cab drivers plus feats of strength to lug luggage laden with research equipment. After completing experiments on yellow-star thistle in Kalloni Bay near Ancient Pyrrah, our return trip featured a layover at the modern city of Bergama (Turkey) and an excursion to the archeological site of the Asklepon, one of the earliest medical centers and the first psychiatric center in the world. This is where the famous Roman physician Claudius Galen, who was actually Greek, maintained a medical library and gained medical insights from treating gladiators at his hometown of Pergamum. Of course, a tale of two islands needs a second island, in this case Santa Cruz Island along the coast of California. Santa Cruz Island is an ideal comparison to Lesvos because *M. apicalis* and yellow-star thistle have both successfully colonized this island and the climate and latitude are comparable to Lesvos. Studies this year compared the pollinator guilds and nectar use of pollinators on yellow-star thistle between the two islands. Amy Savitski is comparing the genetic diversity of samples of native and non-native *M. apicalis* for her Research in Biology II experience. In this story of two islands themes of scientific discovery, history of science, and cultural diversity replace those of fate, rebirth, and class struggle however, an ending has not yet been written. Please attend the College of Science & Technology's Research Day in the last week of classes to hear more about this research and experiences by Amy Savitski during her six-week research expedition.



Undergraduate researchers Dan Soong from UC, Berkeley (left), **Amy Savitski**, Bloomsburg University (middle), and Meredith Clement, University of Central Oklahoma (right) at Kalloni Bay (Greece) establish a yellow-star thistle transect near Ancient Pyrrah where Aristotle studied the biology of a fish called red mullet.



The Hagia Sophia as seen through a water fountain in Istanbul. This is a prime example of how eastern and western civilization merge in Istanbul. The central portion was formerly a Byzantine Catholic church later converted to the Red Mosque after Turkish occupation.



Summer Ornithology by Dr. Clay Corbin

Ornithology (50.459/559) was a blast this past summer. In addition to several local birding trips and a weeklong learning excursion to the shore, we collected feathers for DNA analysis from nestling Barn Owls. Field trip sites included a week long learning excursion to the east coast. Sites included Blackwater National Wildlife Refuge in Maryland, Wallops Island, and Chincoteague National Wildlife Refuge in Virginia, and birding hotspot, Cape May, New Jersey. During the trip to the coast we stayed on the campus of the Marine Science Consortium.

Photo 1. Ornithology student **Jen Heckler** reduces the stress of a baby barn owl during feather extraction for DNA analysis. Barn owls hatch asynchronously. Out of a brood of eight nestlings, pictured below is the junior and senior most siblings. What major difference in plumage do you notice between these two owls?

Photo 2. The ornithology course searches for brown-headed nuthatches in the maritime forest habitat of Chincoteague National Wildlife Refuge in Virginia.

Photo 3. The Ornithology class in Cape May, New Jersey. Pictured from the left are **Ryan Magaskie, Chelsea Barnes, Bernie Svab, Jen Heckler, Dr. Corbin, Hong Ho, Deb Hunsberger, Jordan Conway,** and **Tracy Brown.** Jordan Conway is simultaneously learning bird calls on his MP3 player while giving the official field hand signal for "eggs spotted 1 glass below horizon, 30 degrees off due East."



1



2



3



Picture This!

BioSynthesis is delighted to share these wonderful photos by aspiring photographer and B.S. Biology major **Jesse Bobonis**. Jesse used a Kodak DX 7590 5.0 megapixel digital camera. At left is a monarch butterfly and at right is a black and yellow argiope that is living on the corner of her woodpile.



BIOLOGY

The Department of Biological and Allied Health Sciences offers both a Masters of Science degree (M.S.) and a Master of Education (M.Ed.) in Biology. Our master's program in general biology provides opportunities for course work and research at the supraorganismal, organismal, cellular, and molecular levels of biology. The program prepares students for admission to doctoral programs or professional schools and also enhances the knowledge and experience of high school biology teachers. For more information, contact the graduate program coordinator, **Dr. Carl Hansen** (270 HSC).

M.S. BIOLOGY STUDENT NEWS

We have several new graduate students this year. Please welcome **Justine Maggio, Joseph Margotta, Jonathan Shaw, Di Zhou, Debra Walters, Samantha Wagner** and **Anne Muthui**. We have had five graduate students successfully passed their candidacy exams: congratulations to **Melissa Tomcavage, Kendra Sobolesky, Andrew Paluch, Chelsea Barnes, and Jonathan Snavely**. **Melissa Tomcavage's** thesis work centers on cloning and characterizing the gene for the iron transporting siderophores in the lab of **Dr. George Davis**; **Kendra Sobolesky** is exploring approaches to generate methane gas from the anaerobic digestion of cheese whey with **Dr. Barry Nolt**; **Andrew Paluch** is studying the role of the G Protein subunit gamma 11 in metastatic cancer and cell senescence with **Dr. Carl Hansen** and Dr. Janet Robishaw. **Andrew Troutman** is cloning transcription factors from *M. apicalis* in **Dr. Kris Brubaker's** laboratory. **Chelsea Barnes** is characterizing the ecology of stream salamanders with **Dr. John Hranitz**. **Jithender Gundawar** spent the summer investigating pathways of radiation-induced cell death in cancer cells at the Weis Center for Research with Dr. Mansoor Ahmed and **Dr. Carl Hansen** at the Weis Center for Research in Danville. The department currently has three Graduate Assistants: **Andrew Troutman** oversees the Anatomy and Physiology labs preparations, **Chelsea Barnes** preps the Concepts Labs, and **Andrew Paluch** helps to ensure that the Integrated Physiology Labs and the Cell Biology labs run smoothly. Congratulations to **Jennifer Biddinger** on the birth of her daughter Paige this summer. Jen is currently writing her masters thesis under the guidance of **Dr. Steven Rier**.

RADIOLOGIST ASSISTANT (RA) PROGRAM

BU is among the first in the nation to offer this new health care program. The RA bridges the gap between radiologic technologists and radiologist physicians. The development of this career path was supported by the American College of Radiology, the American Society of Radiologic Technologists, and the American Registry of Radiologic Technologists. RAs will work under the supervision of a radiologist to perform such duties as patient interaction, performance of certain radiology procedures that are currently conducted by a radiologist, and participation in the systematic analysis of the quality of patient care in radiology. RAs will help meet the needs of an increasing number of patients as the population ages, technology advances, and current technologists and radiologists retire. The RA program director is Mrs. Chris Mehlbaum (HSC 265).

RA HIGHLIGHTS

News from the RA Class of 2009:

Our new incoming class includes full time students **Sharon Hill** from East Bangor, PA; **Ross Klausing** from Covington, KY.; **Andre Pascal** from Fort Fort, PA; and **Joshua Tussing** from Findley, OH. Our new part-time students are **Melissa Latham**, Schnecksville, PA., and **Thomas Luby** from Baltimore, MD.

Students are currently taking online courses this semester but will be arriving on campus for the spring and summer semesters.

News from the RA Class of 2008:

Our "new little addition" to the class "Lily" was born on August 30 to **Lynn Ritz**. She was 7 lbs, 4 oz and 21 inches long. Both mom and daughter are doing well. Lynn is anxious to get started on her clinical rotation very soon in the Scranton Area.

Our first student to start her clinical rotation is **Brianna Wilkins**. Brianna is working at Abington Memorial Hospital where she is already performing procedures practiced in lab here last semester such as myelograms, lumbar punctures, and fluoroscopy procedures. Way to go Brianna!

Hank Batiste will be starting his clinical rotations very shortly in the Atlanta, Georgia area.

Medical Imaging students who are interested in learning more about the Radiologist Assistant Program at BU are invited to stop in and speak with Mrs. Mehlbaum (HSC 265)

Need Help in your Introductory Biology Course? Check out the tutoring session offered each Tuesday from 5 p.m. to 6 p.m. in 72 Hartline by Tri-Beta Honor Society. Students in Anatomy and Physiology; Concepts in Biology; Human Biology; Cells, Genes, and Molecules; and Ecology and Evolution are welcome to drop in.