



BioSynthesis

Volume 5, Issue 4 (September 2006)

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

Fall Semester Dates

SEPT 20: Lunch with Dean Marande, 12:00 p.m.; Relaxation Methods Talk, 9:00 p.m., Columbia Hall.

SEPT 28: Journal Club, 12:15 p.m., 178 HSC.

OCT 2: Deadline to apply for graduation; Pre-professional Meeting, 6:30 p.m. Schweiker Room, Andruss Library.

OCT 3: Resume and Applications Workshop, Biology & Allied Health Club, 6:00 p.m., 178 HSC.

OCT 3—5: Career Sessions, 6:30 p.m., 79 HSC.

OCT 13: Reading Day; no classes

OCT 14: Biology and Allied Health Club trip, American Natural History Museum

OCT 17: Podiatry Presentation, 5:00 p.m., 178 HSC.

OCT 18: Lunch with Dean Marande, 12:00 p.m.; Asthma Talk, 9:00 p.m., Columbia Hall; Temple Podiatry Presentation, 7:00 p.m., 79 HSC.



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Welcome!

The Department of Biological and Allied Health Sciences (BAHS) extends a hearty welcome to all new freshman, transfer students, and returning students! We hope that you have a rewarding and successful academic year. BAHS is 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 newly reorganized 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 resume writing workshop, form a study group, or engage in discussion with a guest speaker. Jump in!

Who's Who?

Department Chairperson

Department Secretary

Assistant Chairperson

Allied Health Coordinator

Graduate Program Coordinator

Radiologist Assistant Program Coordinator

Department Webmaster

Department Pre-professional

Committee Co-chairs

Advisors: A list of all students and their academic advisors is posted on the bulletin board directly across from the main department office (125 Hartline). A list of faculty office locations appears immediately to the right.

Dr. George Chamuris, 126 & 105 HSC

Ms. Vicki Beishline, 124 HSC

Dr. Marianna Wood, 104 HSC

Dr. Judith Kipe-Nolt, 269 HSC

Dr. Carl Hansen, 123 HSC

Mrs. Christine Mehlbaum, 265 HSC

Dr. Marianna Wood, 104 HSC

Dr. Joseph Ardizzi, 106 HSC and

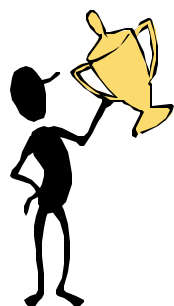
Dr. Mark Melnychuk, 266 HSC

Meet the BAHS Chairperson and Assistant Chairperson



Dr. George Chamuris, BAHS chairperson, is a fungal ecologist and teaches Concepts in Biology II, Mycology, Dendrology, and Comparative Biology of Plants. He earned his Ph.D. from the State University of New York, College of Environmental Science and Forestry. For fun, Dr. Chamuris enjoys singing and playing the guitar. You can hear him at a variety of local venues.

Dr. Marianna Wood, BAHS assistant chairperson, teaches Ecology, Evolution, Conservation Biology, University Seminars, and Concepts in Biology I and II. She holds a Ph.D. in ecology from the University of Kansas. In her spare time, she enjoys any outdoor activity-- camping, hiking, backpacking, canoeing, even biking to the University.



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 2006. Great job!

Biology: Nicholas Bixler, Sarah Bounds, Richard Carter, Cassandra Clay, Nicole Dalessandro, Laura Halon, Jessica Hudak, Tracy Jacobs, Aubrey Jones, Brian Kempsey, Cory Lavoie, Jonathan Molinari, Nathan Mutic, Brittany Roughsedge, Brock Solomon, Stephanie Solomon, Trinity Stempko, Jessica Teders, Kristine Tofts, Ashley Welikonich, Linda Yeany, Ashley Yelinek.

B.S. Biology, Pre-medical Sciences Option: Kyle Bartol, Pamela Hudock, Joanna Kraynak, Stacey Schell, Margaret Yesalavage.

B.A. Biology and Secondary Education Biology: Holly Binkley, Paul Farley, Charlene Feyers, Joseph Holland, Rachel Kaskie.

Pre-Pharmacy: Donald Astleford, Anthony Rigard.

B.A. Biology, Pre-Physical therapy: Courtney Dean, Kimberly Dodson, Kaylee Fischer, Allison Grimm, Maria Johns, Jennifer Krott, Marie Malitsky, Kelly Murr, Kristae Rae Petruskevich, Holly Seymour, Justin Singer, Megan Vickery, Jennifer Wynn, Danielle Yoder.

B.A. Biology, Pre-physician assistant: Robert Heim, Laura Upton, Jamie Willour.

Medical Imaging: Kara Ballentine, Talia Bartko, Ashley Boos, Bruce Bortree, Jeffrey Brannon, Breanne Connors, Megan Coyne, Lauren Crandley, Aimee Dutton, Kelleigh Eckenrode, Amal Elamin, Megan Enterline, Stephanie Gabel, Krista Garrett, Amy Giordan, Susan Heckman, Teal Ingerick, Ryan Jones, Sara Keeney, Laura Keeny, Amanda Knepp, Katie Krause, Kaitlyn Manley, Amy Maurer, Tanya McFalls, Heather McWatters, Valery Mead, Emily Miller, Ashley O'Gara, Laura Primerano, Leah Redinski, Caitlin Scout, Nicole Shambach, Dawn Tobias, Brett Wiest, Bryan Wiest, Sara Zerbe.

Student Research makes the cover of the prestigious journal *Blood*

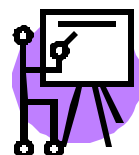
BU students **Sonya Sinha** and **Eric Horstick** are co-authors of a paper entitled "Zebrafish G Protein gamma2 is required for VEGF signaling during angiogenesis", which was highlighted as the cover of the July 1, 2006 issue of *Blood*. The finding of this paper provides a new opportunity to block pathogenic angiogenesis, which may lead to a safer and more efficacious therapy to treat cancer. This project was initially started with data obtained by Sonya Sinha as part of her master's thesis at BU and by undergraduate researcher Eric Horstick, both working with **Dr. Carl Hansen** and his colleagues at the Weis Center for Research at Geisinger. Both Sonya and Eric are currently pursuing Ph.D. degrees.

Congratulations to BAHS Faculty



Dr. John Hranitz was recently promoted from assistant to associate professor. **Dr. Carl Hansen** was granted tenure.

Drs. Corbin and **Hranitz** have recently received a BU collaborative grant entitled "Morphological and molecular variability in the African Blue Flycatcher species group (*Elminia longicauda* subspecies)" for \$2630.00. **Dr. Corbin** has also received a Research and Disciplinary Grant for \$3637 titled: "Evolutionary convergence among unrelated lineages of sit-and-wait foraging birds" and a Special Initiatives Award to support Evolutionary Ecology Research from BU College of Science and Technology for \$1503.



Journal Club Starts Up

What is a journal club? A journal club is an opportunity to get together informally with fellow students and faculty to discuss research articles, review lab findings, or obtain feedback on an idea or problem. Journal Club meets on selected Thursdays at 12:15 p.m. in 178 HSC. **Jithender Gundawar** will present his thesis proposal at the first journal club of the semester on Thursday, September 28. For more information, contact **Dr. Corbin** at X4134 or ccorbin@bloomu.edu. Everyone is invited! We hope to see you there!

Meet our New Faculty

Two new faculty members have joined BAHS this year. Meet them in this exclusive *Biosynthesis* interview.

Dr. Michael Allar, Ph.D.

Where are you from?

I grew up in Hughesville, PA, approximately 30 minutes north of Bloomsburg. I currently live about 20 minutes north of Harrisburg with plans to relocate in the near future.

Where did you receive your education?

My B.S. is in Molecular Biology from Millersville University, and my M.S. and Ph.D. are in Anatomy from Penn State University/College of Medicine.

What is your area of expertise?

My expertise is in the area of human anatomy, histology, embryology, and cell biology.

Where have you taught previously?

I have taught at Penn State University College of Medicine, Harrisburg University of Science and Technology, University of Wisconsin-LaCrosse Campus, Lebanon Valley College, and Duquesne University-Capital Campus.

What is your area of research?

Previous areas of research included mammary gland development and skeletal muscle trauma. I would currently like to pursue opportunities focusing on skeletal muscle growth and structure. In addition I would like to develop in-depth interactive computer programs/models for use in the fields of anatomy and embryology.

What classes are you teaching at BU?

I am currently responsible for A&P I and II laboratories. I will be teaching Cross-Sectional Anatomy and Imaging Pathology courses for the 2007-2008 academic year.

What do you do for fun?

Fun right now consists of taking care of my 20-month old son, Zachary Michael. Snowboarding, hiking, and computers would also round out the fun list.



Christine Mehlbaum, M.Ed. R.T.R.

Where are you from?

I reside in Ashland Pa.

Where did you receive your education?

I received my radiologic technologist training at Sacred Heart Hospital in Allentown Pa., my BS degree from Bloomsburg, and my master's in Education, Health Education from Penn State University.

What is your area of expertise?

My area of expertise is radiology.

Where have you taught previously?

I previously taught and was program director of the Penn State Radiology Program.

What is your area of research?

I want to focus on education in radiology.

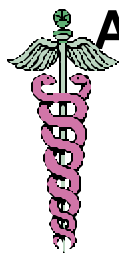
What classes are you teaching at BU? Classes I am teaching here are

Cross Sectional Anatomy; Patient Assessment/interaction/education; Imaging Pathology; Radiology Procedures/Image Evaluation 1 and 2; Applied Research; Radiologist Assistant Seminar and supervise the Clinical Preceptorships.

What do you do for fun?

Lately I don't have much time for fun! But when I do I like to travel, cook, knit, cross stitch, read and spend time with my family.





ALLIED HEALTH NEWS

BU Students Head to Clinical Programs

Over 60 BU students have headed off to clinical programs in medical imaging 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.)

Johns Hopkins Hospital: R, **Nicole Nestico, Kelleigh Eckenrode**; R/CT, **Kara Ballantine** and **Amy Giordon**; R/ MRI, **Susan Heckman** and **Sara Keeney**; S, **Ashley Boos, Ashley Corwin**, and **Nicole Shambach**; NM, **Nathan Archey, Eric Funk**, and **Danielle Rill**. Albert Einstein Hospital: R, **Erin Kappenstein** and **David Lindemann** St; Joseph Medical Center: R, **Amy Maurer** and **Jill Stoudt**. Reading Hospital: R, **Alyssa Brenner, Breanne Connors, Thomas O'Malley, Stephanie Tinna, Brett Wiest, Bryan Wiest, Sara Zerbe**. Abington Memorial Hospital: R, **Megan Weber** and **Kristin B'Oris**. Crozer-Chester: R, **Lauren Crandley**. Wilkes-Barre General Hospital: R, **Bruce Bortree, Laura Hurley, Emily Miller, Heather Pennell, Deborah Turner**. Lancaster General Hospital: N, **Tanya McFalls**; S, **Katie Horoshock**; R, **Leah Rineer**. College Misericordia: S, **Wendy Grumbein, Natalie Mountney, Kevin Wascavage**. Wyoming Valley Hospital: S, **Janelle Bickel, Ashley O'Gara**. University of Pittsburgh Medical Center: R, **Megan Enterline**. Geisinger Medical Center: CVT: **Kelley Laughlin** and **Elizabeth Truxall**; R, **Talia Bartko, Rachel Boring, Jeffrey Brannon, Stephanie Gabel, Krista Garrett, Ryan Jones, William Knapick, Amanda Knepp, Edward Stefanowicz, Lauren Sterkenberg**. St Christopher's Hospital of Philadelphia: R, **Shaquana Simmons**. Greenville Tech College: S, **Heather Woodrow**. Wellspan Health: R, **David Robel**. Thomas Jefferson University: R/RT, **Albert Ashley**; R/MRI, **Kristin Checchi**; S/CS, **Megan Coyne**; NM/ MRI, **Allison Lewis**; S/MRI, **Lisa Mason**; S/CS, **Valery Mead**. We wish you a productive and successful clinical experience. Stay in touch!



Fall into Health Program Series

The Health Sciences Learning Community will sponsor a series of programs on health-related topics. All programs are in Columbia Fireside Lounge at the times listed below. Free refreshments will be served. Everyone is welcome!

September 20	12:00 p.m.	Lunch with Dean Marande (bring your lunch!)
	9 p.m.	Dr. Margaret Slusser, Nursing. <i>Come and De-Stress: Learning Relaxation Methods</i>
October 18	12:00 p. m.	Lunch with Dean Marande (bring your lunch!)
	9:00 p.m.	Professor Deb Sanders, Nursing, <i>Asthma</i>
October 25	9:00 p.m.	Dr. Mark Tapsak, Chemistry, <i>The Chemistry of Food and Cooking</i>
November 15	12:00 p.m.	Lunch with Dean Marande (bring your lunch!)
	9:00 p.m.	Dr. Barry Nolt , Biological and Allied Health Sciences, <i>Microbes Among Us</i>



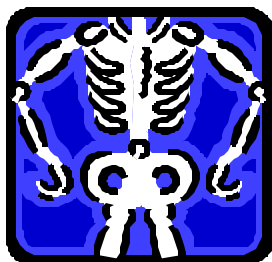
Getting Ready to Apply to Clinical Programs? Check out the Career Development Center Workshops

The Career Development Center is sponsoring a series of workshops fall semester that will help you prepare for entrance to clinical programs and professional schools. All workshops are held in room 4 Student Services Center. Workshops on writing resumes and cover letters are offered on: Monday, Oct. 2, 3:00 p.m.; Tuesday, Oct. 10, 3:30 p.m.; Wednesday, Oct. 11, 3:00 p.m.; Wednesday, Oct. 18, 4 p.m.; Tuesday, Nov 7, 3:30 p.m.; Monday, November 13, 3:00 p.m.; and Tuesday, Nov. 14, 3:30 p.m. Sessions on learning interviewing skills are offered: Monday, Oct. 2, 4:00 p.m.; Weds, Oct. 18, 5:00 p.m.; and Weds, Nov 8, 3:00 p.m. Take advantage of these great opportunities. It is an hour well-spent!



TB tests

A tuberculosis test is required for all students who will student teach or work directly with clients in hospitals or medical clinics. The test will be administered by the Student Health Center in 340 Kehr Union (across from the Information Desk.) The next clinic is on Monday, September 25 between 1:00 and 4:00 p.m. with results read Wednesday, September 27 between 1:00 to 4:00 p.m. The test costs \$10. No appointment is necessary.



First Radiologist Assistant (RA) Class Admitted

The first class of students have begun their studies this fall semester in our new masters degree program in Radiologist Assistant (RA). BAHS extends a hearty welcome to **Henry Batitste, Jr., Isaac Cobbinah, Christine Hollenbeck, Alexander Khudysh, Karlyn Labate, Jacqueline Ritz, and Brianna Wilkins**. Under the direction of **Mrs. Christine Mehlbaum**, 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. Shortages in the radiology field are predicted to continue through 2030. To be eligible for the program, students must have a bachelor's degree, ARRT certification and registration in radiography, a minimum of 3 years of full-time work experience as a radiologic technologist, and an agreement with a practicing board certified radiologist to supervise the clinical preceptorship. Courses in the first semester of the 45-credit, two-year program will be offered online; students will be required to attend classes at BU's campus during the spring and summer semesters of the first year. The second year will be devoted to a year-long clinical experience, supervised by a radiologist mentor who is selected by the student. For more information on the RA program and curricular details see <http://departments.bloomu.edu/biology/ra/index.html> or contact Mrs. Mehlbaum at cmelhbau@bloomu.edu.

Medical Imaging Majors Explore Johns Hopkins

An enthusiastic group of medical imaging majors headed to Johns Hopkins Hospital recently for an open house program. Students had the opportunity to tour the hospital, meet with program directors, and observe the different imaging modalities (MRI, CT, Nuclear Medicine, Radiology, and Sonography). According to MI major **Kara Vargo** "Our trip was well worth it! (The program directors and students) were extremely helpful, knowledgeable, and willingly to show us what we wanted to see."

Julle Pershing adds "I left the trip feeling confident that if I was accepted as one of their medical imaging students, I would succeed in my career." MI majors attending the JHU open house were (alphabetical order): **Ray Castillo, Mike Edwards, Stephanie Gilbert, Becky Heisey, Rachel Howells, Katie Krause, Laura Lorito, Erica Matheis, Julee Pershing, Rachel Sorber, Brock Spinks, Joan Thomas, Kara Vargo, Jessica Yeager**. Additionally, the students extend a hearty thanks to **Dr. Allar** for accompanying the group and driving the van.



Upcoming campus visits: Mark Your Calendars!

Tuesday, October 3, 79 HSC, 6:30 p.m.

Mr. Brian Spezialetti, Robert Packer Hospital, Clinical Lab Science Program

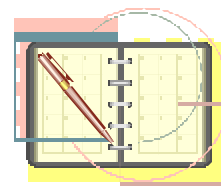
Mr. Ken Roszel, Geisinger Medical Center, School of Radiologic Technology

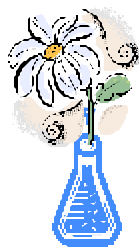
Wednesday, October 4, 79 HSC, 6:30 p.m.

Ms. Lisa Capizzi, Wyoming Valley Hospital, Sonography Program

Thursday, October 5, 79 HSC, 6:30 p.m.

Mr. Don Sharples, Director of Admissions, Thomas Jefferson University, College of Health Professions. Mr. Sharples will present information on TJU's programs in physical therapy and occupational therapy. He will meet with upperclassmen prior to his talk at 5:00 p.m. in 142 Hartline.





RESEARCH IN BLOOM

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.

WHAT KIND OF RESEARCH IS BEING DONE AT BU? The BAHS faculty have diverse research interests. Topics under investigation include all levels of biological organization ranging from molecular biology to population biology and a wide range of organisms.

HOW DO I FIND A FACULTY MEMBER TO WORK WITH? In many cases, students meet a prof in class and discuss research opportunities. Another way to find out about research opportunities is to simply knock on doors and visit faculty to discuss their research program. A brief overview of faculty research interests appears below. Faculty are eager to involve you in their research.

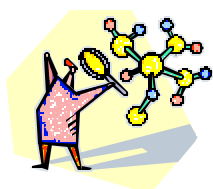
Dr. Michael Allar	Muscle Growth & Structure, Interactive Computer Models in Anatomy & Embryology	Mrs. Christine Melhbaum	Radiology Education
Dr. Joseph Ardizzi	Microbial Genetics, Meiosis and Ascospore Formation in Fungi	Dr. Mark Melnychuk	Nutrition and Reproduction, Water Pollution
Dr. Kris Brubaker	Prostate Cancer, Bone Metastases, Bone Remodeling, Signal Transduction	Dr. Barry Nolt	Plant Pathology, Virology
Dr. George Chamuris	Fungal Ecology	Dr. Steven Rier	Stream Ecology
Dr. George Davis	Plant Molecular Genetics	Dr. Cynthia Surmacz	Toxicology, Exercise Physiology, Cholesterol Metabolism
Dr. Carl Hansen	G protein Coupled Signaling Pathways, Cardiac development and growth.	Dr. Margaret Till	Cholesterol Metabolism
Dr. John Hranitz	Ecological genetics, physiological ecology, herpetology	Dr. Gary Wassmer	Environmental Physiology, Daily and Seasonal Rhythms
Dr. Judy Kipe-Nolt	Nitrogen Fixation, Composting, Nitrate Pollution	Dr. Kevin Williams	Physiological Plant Ecology
Dr. Thomas Klinger	Marine Biology, Invert. Zoology, Aquaculture, Physiological Ecology, Nutrition	Dr. Marianna Wood	Forest Ecology, Mammalogy

CAN I GET CREDIT FOR RESEARCH? Yes, students may receive 1-3 credits for research by enrolling in the course 50.390, Undergraduate Research in Biology I. This course may be followed up by Undergraduate Research in Biology II (50.391). Only six credits of undergraduate research may be applied toward biology electives. Junior class standing is a prerequisite. This course acquaints students with the techniques of scientific research, data collection and analysis by engaging in a program of research with the aid of a faculty member. Research culminates in a scholarly paper written by the student that presents findings of the laboratory or field investigation in a form suitable for publication. Please plan ahead if you are interested since a research proposal must be developed during the previous semester. Proposals for Spring semester must be submitted to the Dean's Office by Nov 22, 2006. See your faculty research mentor for assistance with the appropriate forms and the proposal. Students in the honors program may enroll in Honors Independent Study I and II.

DO I HAVE TO ENROLL IN A COURSE TO GET RESEARCH EXPERIENCE? NO! Simply approach a faculty member to discuss volunteer research opportunities. There is a form for volunteers to complete for insurance purposes. Underclassmen are welcome to volunteer!

Student Research Funds Available

Applications are now available for the Kozloff Undergraduate Research Awards. These funds support student research projects that are conducted under the direction of a faculty mentor. Applications may be obtained from the Office of Research and Sponsored Programs and are due on October 16, 2006 at 4:00 p.m.



Undergraduate Research

The research labs in Hartline are certainly busy this semester! The following students are working on research projects either as part of Research in Biology I or II, Honors Independent Study I or II, or as volunteers to gain valuable experience. We look forward to learning the results of their studies at various local or state meetings.

Kyle Bartol (B.S. Biology, Pre-Medical Sciences), **Nicholas Bixler** (B.S. Biology), and **Cathy Stone** (B.S. Clinical Lab Science) are establishing methods to study links between immune defense and thermotolerance in exotic leafcutting bees. They are working together to screen and sequence cloned cDNA for forkhead proteins, specifically searching for DAF-16 (a gene that regulates both immunity and thermotolerance) gene sequences. Dr. Brubaker is their research mentor.

Leah Diltz (B.A. Biology, Natural History) is generating a landscape map of an old farmland site near Berwick. The land is owned by PPL and has been released from farming and management practices. The map will be used to study bird community dynamics as a function of ecological succession. Leah is working with Dr. Corbin who recently acquired permission to use this site for research and educational purposes.

Justin Dion (B.S. Biology, Pre-Medical Sciences) and **Melissa Scubelek** (B.S. Biology) are working with Drs. Corbin and Hranitz on quantifying the morphological and genetic differences between two subspecies of African Blue Flycatchers. Justin is extracting and analyzing DNA from museum specimens of flycatchers, while Melissa is tackling the morphometrics. Dr. Hranitz is Justin's mentor in Research in Biology I.

Stephanie Findley (B.A. Biology) is assessing bark beetle populations under the direction of Dr. Chamuris in Research in Biology I.

Joel Gyimesi (B.S. Biology) performed PCR and conducted molecular genotyping using 11 microsatellite loci in collared lizards. He is currently using those genotypes in parentage analysis. Joel was enrolled in Research in Biology I during the summer under the guidance of Dr. Hranitz.

Laura Halon (B.S. Biology, Biotechnology) is investigating factors regulating gene expression in prostate cancer that metastasizes to bone by studying the ability of interference RNA (siRNA) to knock out Runx2 gene expression in prostate cancer cell lines. Dr. Brubaker is her mentor.

Katherine Huff (B.S.N., Nursing) is conducting Honors Independent research entitled "The potential for *Staphylococcus aureus* transmission by nursing students: Evaluation of nasal carriage and watchband contamination." Dr. Kipe-Nolt is her mentor.

Jonathan Molinari (B.S. Biology, Biotechnology) is isolating and characterizing the phytosiderophore transporter gene in oats, *Avena sativa* under the guidance of Dr. Davis in Research in Biology I.

Joshua Montgomery (B.S. Biology, Biotechnology) is a research volunteer in Dr. Davis's lab, where he is isolating and characterizing the phytosiderophore transporter gene in foxtail grass, *Setaria sp.*

Kevin Nawrocki (B.S. Biology) completed Research in Biology II this summer under the direction of Dr. Rier. He investigated the effects of acid mine drainage on microbial enzyme activities in Tomhicken Creek. He plans to combine these data with other data that he and Chase Kelch collected this past spring into a single manuscript that will be submitted to a journal this year.

Braden Ott (B.S. Biology, Marine Biology) is continuing his research interests in Research in Biology I with Dr. Hansen. He is exploring the impact of the cold but relatively constant temperature of the Southern Ocean environment on Heterotrimeric G Protein structure and evolution.

Mike Sedon (B.S. Biology, Marine Biology) is pursuing his interests in wildlife biology by conducting herpetofaunal surveys of a wetland preservation property in Mountaintop, PA. Dr. Hranitz is his advisor.

Danielle Wartko (B.A. Biology and Criminal Justice) performed PCR and molecular genotyping using 11 microsatellite loci in collared lizards last spring. Currently, Danielle is performing parentage analysis of collared lizards. Dr. Hranitz is her mentor.

Zac Wert (B.S. Biology) is interested in quantifying variation in habitat and foraging behavior among the region's woodpecker community. He is studying 5-7 species of area woodpeckers to determine if 1) woodpeckers utilize species-specific aspects of foraging habitat and 2) if there is a phylogenetic component to foraging behavior among woodpeckers. Justin is enrolled in Research in Biology I under the direction of Dr. Corbin.

Ashley Yelinek (B.S. Biology) measured physiological changes, maximum loads, and performance parameters of members of the BU swim team while using training stretch cords. Ashley is currently analyzing the data and plans to present it at a scientific meeting spring semester. Ashley is enrolled in Honors Independent Study in Biology II under the guidance of Dr. Surmacz. This work is in collaboration with Drs. Rawson and Mookerjee of the Department of Exercise Science.



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 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. Students are encouraged to check the committee's website (<http://departments.bloomu.edu/biology/preprof.htm>) for announcements, current events, information on course selection, pre-professional test materials, and links to relevant web sites. Also, current information is displayed on the bulletin board outside room 106 HSC.

Where can I learn more about professional schools?

An information session for all students interested in attending professional school will be held on Monday, October 2 at 6:30 p.m. in the Schweiker Room of Andruss library (immediately to your left when entering the library.) The session provides an opportunity to meet members of the pre-professional committee, to learn about the requirements for professional school, and to gain insights about the application and admissions process. **Refreshments will be served!**

PRACTICE MCAT OFFERED!

The Pre-professional Committee will offer its annual Mock MCAT exam on **Saturday, November 18, 2006 from 8 a.m. to 3 p.m.** MCAT, a test developed by the Association of Medical Colleges, is the standardized test required for medical school admission. Although dental and optometry schools have their own specialized standard examinations, pre-dental and pre-optometry students would benefit by this opportunity to gain exposure to the standardized test experience. The MCAT assesses mastery in biology, general and organic chemistry, physics, scientific problem solving, critical thinking, and writing skills. Scores are provided in four categories: biological science, critical thinking, physical sciences, and writing. By taking a practice MCAT you will become familiar with the depth and breadth of its questions. After receiving your "practice scores" you will get a better understanding of the content areas that require further study. The practice MCAT is recommended for sophomores, juniors, or seniors. Freshmen should probably wait until they have had more college science courses. **To register for the practice MCAT, email Dr. Hallen at challen@bloomu.edu by November 16. On test day, bring a lunch with you, but leave your calculators, cell phones, and backpacks at home.**

The MCAT goes PAPERLESS!

Beginning in 2007 the MCAT exam will be computerized. The computerized version of the exam is 30% shorter. The new version will be administered 22 times per year with your choice of a morning or afternoon testing session. Score reports will be available in 30 days. To view a complete schedule of exam dates, see the Pre-Medical Sciences Bulletin Board outside 105 Harline. Online registration for the MCAT is available 6 months before each test date at <http://www.aamc.org/students/mcat/>

Sign up for the Pre-Medical Science Option

Students who are interested in the new 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 6, 4:00 p.m. OPEN HOUSE at Philadelphia College of Osteopathic Medicine. This program includes an introduction to osteopathic medicine, admissions information, discussions with current students, and a campus tour. Please see Dr. Melnychuk, 267 HSC, if you are interested in attending.

Saturday, October 7. Primary Care Day at Penn State's College of Medicine, Hershey, PA. This program focuses on primary health care and includes a skills workshop, a medical school tour, and panel discussions with physicians and medical students. Contact Dr. Ardizzi if you are interested in attending. Registration materials are due October 5.

Tuesday, October 17, 5:00 p.m., 79 HSC. Ms. Kristi DiPalma from The Ohio College of Podiatric Medicine will discuss careers in podiatric medicine.

Wednesday, October 18, 7:00 p.m. 79, HSC. Mr. David Martin from Temple University will provide an overview of podiatry.

Friday, November 17, 10:00 a.m. to 3 p.m. OPEN HOUSE at Jefferson Medical College, Thomas Jefferson University, Philadelphia for minority students. A discussion of educational programs and support services is planned. See Dr. Ardizzi for details.

Summer Retrospective

Field Zoology Hits the Beach

Salamanders, starfish, and screech owls – oh my! Thanks to a great group of students, Field Zoology showed that learning and fun are not mutually exclusive! Students learned methods of identifying vertebrates and gained exposure to a wide array of field techniques. A trip to the Wallops Island Marine Science Center in the last week served as a capstone experience (the picture shows the class studying a rocky intertidal zone). By the way, if anyone is missing items from the trip, Dr. Hranitz has a few items that were left behind in the van.



BAHS Faculty in the Community



Dr. Till, Dr. Surmacz, and Mrs Diltz brought their enthusiasm for bones to more than 100 area cub scouts at Camp Lavigne in Benton this summer. The trio led the six to ten-year olds in experiments and demonstrations to show how bones are affected by space travel. They especially loved the whale bone (posing at left with Dr. Till).

Dr. Hansen spent three weeks at the Weis Research Center, Geisinger Clinic, providing hands-on science experiences for area children ranging from grades 3 to 8. The program *Fun With Science* was directed to the younger scientists, while *Fun with DNA* captured the imagination of the middle school group.

Dr. Corbin initiated a pilot project with two local eight graders, Marshall McCollum and Christopher Criqui, to assess morphological variability and to track morphological changes over time in falconiform (eagles, hawks, and kites) skeletons. The project involved digital photography and morphological measurements.

Secondary Education in Biology Updates



Go to the Head of the Class!

Several students have headed into area classrooms for student teaching in biology. The students and their placements are: **Adam Hoagland** (Benton Area Jr/Sr Senior High School; co-op teacher is BAHS alumnus, **Chris Mitchell**); **Elena Insinga-Krick** (Berwick Area Middle and High Schools; co-cop teacher is BAHS alumnus, **Stella Marinakos**); **Rachel Jacobs** (Southern Columbia Middle and High Schools) and **Donna Wood** (Bloomsburg High School). The students will be visited on-site by both education department faculty and the following BAHS faculty: Drs. Hansen, Melnychuk, Surmacz, & Wood.

Resources for Teaching

The American Association for the Advancement of Sciences (AAAS) announced the availability of new resources for science education. A new guide, called *Evolution on the Front Line*, provides teachers with resources to meet some of the challenges in teaching evolution in the class room. The guide is free and available at www.project2061.org/evolutionguide. The AAAS has also launched a webpage, *Science for Kids*, that will offer weekly research updates from the journal *Science*. See www.eurekalert.org/scienceforkids. Science has also added a monthly "Education Forum" to *Science* to provide opportunities for public discourse on science education issues.

New Equipment

With the last of our NSF CCLI Grant Monies, we have purchased a cooled CCD Camera, a high resolution color camera and image analysis software, providing us with a complete setup for high resolution fluorescent and brightfield microscopy. We also have two new Electroporation Systems, providing us with the ability to rapidly transfect bacterial, plant and animal cells. If you

We Want You! Check out the BAHS Clubs & Organizations

Biology and Allied Health Club

All are welcome to join in the fun! The Biology Club has a full slate of activities planned for fall semester. See the table at left for a listing of upcoming events. Be sure to check out the club bulletin board (on the green floor directly across from the restrooms) and the BAHS club website: http://facstaff.bloomu.edu/jhranitz/BAHS_club.htm. The club is capably led this year by the following officers (seen below): President, **Talia McAlister**; Vice-President, **Laura Halon**; Secretary, **Rachel Brous**; Treasurer, **Joel Gyimesi**; Activities Coordinator, **Debbie Hunsberger**. The club is advised by **Drs. Hranitz, Brubaker, and Corbin**.



Biology & Allied Health Club Officers (from left): Debbie Hunsberger, Joel Gyimesi, Rachel Brous, Laura Halon, Talia McAlister

Date & Time	Activity
September 25 –29	T-shirt Sale, Hartline Lobby
Tuesday, October 3, 6:00 p.m. 178 HSC	Workshop on Resumes and Applications
Saturday, October 14	Trip: American Natural History Museum/ NY Air and Space Museum
Tuesday, October 17	Guest speaker from Ohio College of Podiatric Medicine
Sunday, October 29	Halloween Fun (hay ride or haunted house)
Tuesday, October 31, 6:00 p.m. 178 HSC	Workshop on Research
November 6—17	Food drive for local food bank
Tuesday, November 14	Guest speaker: Dr. Hancock
Tuesday, Nov 28, 6:00 p.m., 178 HSC	Holiday Party!

Pre-Medicine Club

The Pre-Medicine Club is open to all students interested in any of the medical sciences. This year's officers are: President, **Nick Bixler**; Vice-President, **Pam Hudock**; Secretary, **Mallory Garnett**; Treasurer, **Hong Ho**; Public Relations, **Sherrol Browne**. **Dr. Ardizzi** advises the club. Many activities are planned for the upcoming year such as a mentoring program for new students, visits to medical and professional schools, volunteer activities in the community, MCAT study sessions, and guest speakers on podiatry on October 17 and 18. The club held its first meeting on September 18. Club members reported on their recent trip to Bryn Mawr College for the Medical School Admissions Deans Panel. The students met with medical school admissions deans from Drexel University College of Medicine, George Washington University School of Medicine and Health Sciences, Weill Medical College of Cornell University, and Yale University School of Medicine. Attending the Deans' Panel were **Mallory Garnett, Judy Harry, Hong Ho, Shanna Quinn, and Sherrol Browne**. The club will meet bi-weekly on Tuesdays at 7:00 p.m. in 178 HSC.

Tri-Beta 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. This year's officers are: President, **Laura Halon**; Vice-President, **Trinity Stempko**; Secretary/Historian, **Jessica Teders**; and Treasurer, **Christopher Kashi**. The officers recently put their artistic abilities to the test by preparing a bulletin board display (See photo). The officers are currently planning Tri-Beta's Fall Initiation Ceremony for eligible juniors and seniors. Stay tuned for more details. The faculty advisor of the BU chapter of Tri-Beta is **Dr. Surmacz**.



Tri-Beta Officers (from left): Trinity Stempko, Laura Halon, Jessica Teders, and Christopher Kashi

BAHS Students 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 and visit the Internship Office at the Student Services Center (389-4678). A list of recent BAHS interns appears in the list below. Note the great variety of settings and diverse opportunities that these experiences provide.



Nicholas Bixler learned more about the field of optometry as an intern at Rising Sun Eyecare Associates in Millersburg, PA.

Rachel Brous gained a wide range of experience in dentistry as an intern at Eastern Dental in Trenton, NJ.

Jordan Conway and **Courtney Dean** are physical therapy interns at Susquehanna Valley Medical group in Bloomsburg. They are gaining experiences in rehabilitation, patient evaluation, and treatment techniques.

Mallory Garnett researched taste avoidance in mice for developing deer deterrents for commercial crops at the Monell Chemical Research Center

Kelly Grella was an intern at Byrn Mawr Rehabilitation Hospital. She became familiar with several sub-specialties of physical therapy and with both in-patient and out-patient physical therapy practice.

Joel Gyimesi interned with Dr. Betsy Hancock, a Bloomsburg optometrist. Joel was introduced to the field of visual therapy, syntonics, and optometric phototherapy.

Christopher Kashi did an internship at Maximum Health Care, Inc, a home health care provider in Whitehall, PA. Chris gained experiences in patient care, health education, physical assessment, treatment and follow-up care, and record keeping that will serve him well as he pursues a career as a physician assistant.

Lauren Keeny and **Rachel Sorber** are currently completing medical imaging internships at the Geisinger Medical Center.

Katie Krause and **Alex Agard** were interns at Bloomsburg Hospital this summer. Katie's internship was in MRI, while Alex explored Nuclear Medicine.

Brian Kriebel worked as an intern at Premier Physical Therapy, Folsom, PA. where he experienced out-patient physical therapy in a busy practice setting.

Cory Lavoie completed an internship at the Pennsylvania Department of Environmental Protection in Williamsport.

Valerie Letukas did an internship at Hawk Mountain Labs in Hazleton this summer.

Mallory Matzura, **Julee Pershing**, and **Kara Vargo** completed medical imaging internships at the Geisinger Medical Center in Danville, PA in the summer.

Jaclyn Nyce and **Jessica Boyer** are currently interning at Bloomsburg Hospital. Jaclyn is in MRI. Jessica is in the Nuclear Medicine Department.

Jamilah Patton participated in the African American internship in Medicine Program (AIM) sponsored by the Eastern Pennsylvania Medical Society and Glaxo Smith Kline. She had the opportunity to shadow physicians in the following specialties: obstetrics and gynecology, cardiology, gastroenterology, orthopedics, internal medicine, and ophthalmology.

Brock Solomon is presently serving as an intern in the pediatrics department at Geisinger Medical Center.

Jessica Teders interned over the summer with physician assistants at the Lehigh Valley Hospital.

Valarie Van Cleef served as an intern in the podiatry office of Dr. Jody Kubicki, Bloomsburg this summer. Val became familiar with the practice of podiatry and observed several surgeries. She is presently enrolled at Temple University College of Podiatry.

Danielle Wartko had a paid internship with National Medical Services (NMS) in Willow Grove, PA this summer. Danielle worked in a certified forensics Gas Chromatography lab and also spent time in the Criminalistics department.

Catherine Willis learned valuable wildlife interpretation skills this summer as part of Knoebel's Eagle Team. Catherine fielded questions about Bald Eagles and delivered interpretive presentations to the public. Catherine also added to a growing data set on the feeding patterns of a pair of captive bald eagles. Currently, she is conducting a literature review and surveys of captive eagles in other facilities for analysis and publication.

THE BU MASTERS PROGRAM in 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).

Graduate Student News

Michelle Pettitte has finished all the requirements of her M.S. in Biology Program. Congratulations Michelle!

Laura Bauman has successfully completed her graduate candidacy exam. Way to go, Laura!

Welcome new graduate students: **Andrew Troutman**, **Toni Zangari**, **Jonathan Confer**, and **Melissa Tomcavage**.

We have three graduate assistants this semester: **Jennifer Biddinger** will assist in Anatomy and Physiology; **Usha Mandapati** will be overseeing Concepts in Biology Laboratories; and **Jithendar Gundawar** will be preparing materials for the Cell Biology and Integrated Physiology Laboratories. Thanks to all graduate assistants for your hard work!

Graduate Research Updates: **Jennifer Biddinger** spent the summer researching stream ecology with Dr. Rier. Jen is examining the effects of acid mine drainage on microbial nutrient dynamics in three Tioga County streams. (See action shot at right!) **Usha Mandapati** is beginning her thesis research on G Protein function in Antarctic Icefish with Dr. Hansen. **Jithendar Gundawar** is working with Dr. Hranitz on heat stress protein structure in leafcutting bees.



BAHS Office and Support 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 part-time student secretaries are **Kristi Brinckman** and **Trinity Stempko**. Other student workers are **Kaylee Fischer** (Anatomy and Physiology Lab), **Catherine Willis** and **Zane Hoover** (Microbiology), and **Stephanie Findley** (Greenhouse and Genetics).



Meet our BAHS Lab Coordinator

Mrs. Melinda Diltz joins us as our Biology Laboratory Coordinator, a new full-time position in the department. She holds a M.S. in biology from Millersville University and a B.S. in biology from BU. Among Mrs. Diltz's responsibilities are the coordination and preparation materials for lab courses, training and supervising student assistants, maintaining lab equipment, serving as curator of collections in biology labs, supervising the purchasing of lab supplies and equipment, and serving as a lab safety coordinator. Mrs Diltz and her husband Mike have two sons. She serves as a Cub Scout leader and enjoys gardening, camping, fishing, and making stained glass windows in her free time.

Images in Nature

BioSynthesis is delighted to share these wonderful photos by aspiring photographer and B.S. Biology major **Jesse Bobonis**. Jesse took the picture using a Kodak DX 7590 5.0 megapixel digital camera. At left is the Eastern tiger swallowtail (*Papilio glaucus*) and at right is a common bullfrog (*Rana catesbeiana*).

Thanks Jesse!

