



BioSynthesis

Volume 9 Issue 1 (March 2010)

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

Spring Semester Dates

MAR 22: Pre-Med March Madness, Writing a Personal Statement, 6 p.m. ABLE, Columbia

MAR 27: BAHS Club, Trip to Baltimore Aquarium; Regional Tri-Beta Meeting, TCNJ, Trenton, New Jersey

MAR 29: Pre-Med March Madness, Resume Preparation, 6 p.m. ABLE, Columbia

MAR 29 and 30: Tri-Beta Bake Sale, Hartline Lobby

APR 2: Medical Imaging Internship Applications due to Dr. Hranitz

APR 4—6: Pennsylvania Academy of Sciences Meeting, Harrisburg

APR 10: BAHS Club, Bloomsburg Park/River Cleanup

APR 15: Deadline to apply for Rabb Research Grant

APR 15 - 16: Health Sciences Symposium, KUB

APR 17: CPUB Meeting, East Stroudsburg University

APR 22, BAHS Club, End of Year Party

APR 24: BAHS Club, Kick it for Haiti, Town Park

APR 30 and MAY 6: Biology Field Test for Seniors



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2010 Health Sciences Symposium to Focus on Obesity



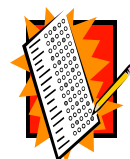
Bloomsburg University will host the 18th annual Health Sciences Symposium on April 15 and 16, 2010. This year's theme is "New Approaches to Obesity: Making Choices for a Healthier Tomorrow" and will feature keynote speaker, Dr. Christopher Still, D.O., FACN, FACP, Director of Geisinger Health System's Obesity Institute. The Obesity Institute is a collaborative effort among researchers and physicians at Geisinger to bring advances in basic research to the prevention, treatment, and cure of obesity. The incidence of obesity in the United States has doubled in the past 30 years, rising to epidemic levels. Obesity is a serious health problem contributing to such diseases as type II diabetes, heart disease, certain types of cancer, and fatty liver disease. Because of the harmful effects of the obesity epidemic, the National Institutes of Health has recommended that researchers expand their efforts to combat obesity.

Dr. Christopher Still, a leading expert on nutrition and adult obesity, has studied this problem for over 20 years. He received his medical degree from Philadelphia College of Osteopathic Medicine and completed his residency at Geisinger Medical Center. He is certified by the American Board of Internal Medicine, the American Board of Physician Nutrition Specialists, and the American College of Nutrition. In 2007-2008, Dr. Still was listed as one of the Best Doctors in America. He has published his research in the following medical journals: *Journal of Gastroenterology*, *Surgery for Obesity and Related Disorders*, *Current Gastroenterology Reports*, and the *Archives of Surgery*. He is the chairperson of the American Society of Metabolic and Bariatric Surgery's obesity medicine committee and serves on the board of directors for several organizations, including the American Board of Physician Nutrition Specialists, the Obesity Action Coalition, and the Surgical Review Corporation. He has also written a book: **Weight Management: Adults** for a general audience and has appeared on the Discovery Health Channel.

Dr. Still will present the keynote address "New Approaches to Obesity: Making Choices for a Healthier Tomorrow" on Thursday, April 15, 2010 at 7:00 p.m. in Mitrani Hall, Haas Auditorium. Dr. Still will also present a workshop on obesity on Friday, April 16, 2010 at 9:00 a.m. in Kehr Union Ballroom 1. The Health Sciences Symposium will also feature presentations and posters by students and faculty in biological and allied health sciences, audiology and speech pathology, exercise science, and nursing. The Symposium is held in conjunction with the annual Wellness Fair. Highlighting the Wellness Fair are exhibits on health-related topics, healthy foods, and free health screenings and information. Mark your calendars! Everyone is welcome to attend. We hope to see you there!

Attention Graduating Seniors

Students graduating with a BS or a BA in Biology in May or August must take the ETS Major Field Test in Biology. Sign up at the department office to take the test on Friday, April 30, 2010, 4:00-6:00 PM or Thursday, May 6, 5:00-7:00 PM. Contact **Dr. Wood** if you have any questions.





Salute to Academic Achievement

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 Fall Semester 2009. Great job!

Jessica Albright	Medical Imaging	Megan Kopec	Biology
Maci Aumiller	Medical Imaging	Laura Laidacker	Pre-Physician Assistant
Emily Barkanic	Biology (BS) Pre-Medical Science	Sarah Lech	Medical Imaging
Kali Bentzel	Medical Imaging	Brittany Levensgood	Medical Imaging
Michael Bierds	Biology	Katherine Liebl	Biology and Economics
Megan Bodor	Biology (BS) Pre-Medical Science	Kelsey Matthews	Biology (BS) Pre-Medical Science
Torie Brilhart	Medical Imaging	Ashley Mattrazzo	Medical Imaging
Stacy Brussell	Biology (BS) Pre-Medical Science	Carrie McClure	Secondary Education Biology
Wendy Bunting	Biology	Marissa McDowell	Biology
Brittany Carper	Biology (BS) Pre-Medical Science	Molly McVan	Pre-Physical Therapy
Melissa Chenoweth	Medical Imaging	Robert Medon	Medical Imaging
Marisa Cipolla	Biology	Ariel Middleton	Biology (BS) Pre-Medical Science
Erinda Como	Biology	Sarah Monaco	Biology
Rebecca Conrad	Medical Imaging	Amanda Mull	Medical Imaging
Kyle Correll	Biology (BS) Pre-Medical Science	Sandra Newell	Biology
Amy Cortellini	Biology	James Noll	Pre-Physical Therapy
Megan Dager	Pre-Physician Assistant	Jason Nolt	Biology (BS) Pre-Medical Science
Elaine Daubert	Biology (BS) Pre-Medical Science	Samantha Oakes	Biology
Kristin Didusch	Biology (BS) Pre-Medical Science	Steven Paliswiat	Biology (BS) Pre-Medical Science
Darrin Doran	Biology	Corey Pappas	Medical Imaging
Meghan Duell	Secondary Education Biology	Brandon Petrone	Biology
Brandon Dunbar	Biology (BS) Pre-Medical Science	Scott Pfaff	Pre-Physical Therapy
Alaina Egger	Clinical Laboratory Science	Jeffrey Pfeiffer	Biology, Secondary Education
Hoyt Emmons	Medical Imaging	Anna-Lee Pflomm	Medical Imaging
Tawny Engelberger	Biology (BS) Pre-Medical Science	Amanda Pulsifer	Biology (BS) Pre-Medical Science
Chardei Eshleman	Biology (BS) Pre-Medical Science	James Redinski	Biology (BS) Pre-Medical Science
Charla Fender	Pre-Occupational Therapy	Corey Scheeler	Pre-Physical Therapy
Sarah Fogleman	Clinical Laboratory Science	Ryan Servose	Biology
Amanda Fowler	Biology (BS) Pre-Medical Science	Elizabeth Shober	Biology (BS) Pre-Medical Science
Karmyn Gill	Medical Imaging	Anna Simpson	Biology (BA) Natural History
Laura Grieco	Biology (BS) Pre-Medical Science	Michael Snyder	Medical Imaging
Richard Hampson	Biology (BS) Environmental Biology	Rebecca Snyder	Medical Imaging
Alissa Heimbach	Medical Imaging	Michelle Stipanovic	Biology (BS) Pre-Medical Science
Kristin Hein	Biology	Tracy Stutzage	Biology
Stefanie Hendel	Clinical Laboratory Science	Sara Taylor	Medical Imaging
Michael Hollman	Biology	Robyn Theuer	Biology
Michael Homishak	Secondary Education Biology	Maxwell Tolan	Biology (BS) Pre-Medical Science
Heidi Huynh	Biology	Derek Weicht	Biology (BS) Pre-Medical Science
Brennan Inch	Biology (BS) Environmental Biology	Daniel Wetzel	Medical Imaging
Jillian Kida	Medical Imaging	Maura Williams	Medical Imaging
Lindsay Kida	Medical Imaging	Jessica Willis	Biology (BS) Pre-Medical Science
Amber Kolk	Clinical Laboratory Science	Cory Worgen	Medical Imaging
David Kolk	Medical Imaging	Rachel Yanchek	Biology (BS) Environmental Bio
		Melanie Yodock	Biology (BS) Pre-Medical Science
		Robert Yudt	Biology

Correction: **MaryKate Gallagher** and **Amber Kolk** were omitted from the Spring Semester 2009 Dean's list in the last issue of *Bio-synthesis*. *BioSynthesis* apologizes for this omission.



Share your good news!

Have you been accepted to a graduate or professional school or clinical program? Have you decided where you will attend next year? Do you have a cool summer experience in biology or health science lined up? Please send **Dr. Surmacz** an e-mail message (csurmacz@bloomu.edu) with your final plans for inclusion in the next issue of *Bio-synthesis*. Thanks!



A Semester in Africa

By Dr. Gary Wassmer

Two days before Christmas I returned from Africa. Last April I was informed that I had received a Fulbright grant. These grants were originally proposed by Sen. William Fulbright in 1946. His vision was that international study was one of the best ways to “increase mutual understanding between people of the United States and the people of other countries.” His objective was not that Americans bring their expertise and resources to other countries, but that we go and learn from others and bring those experiences back to the U.S. My grant allowed me to spend five months teaching and conducting research at Mbarara University of Science and Technology in Uganda.

Mbarara is a town about the size of Bloomsburg in south-western Uganda, far removed from the capital Kampala. The university has about 2,000 students. Biology is one of the smaller departments on campus. While there I taught entomology and studied the use of pesticides by people cultivating small farms, or homesteads.

During my stay I did a few “touristy” things. I visited Queen Elizabeth National Park twice, went to the caves in Fort Portal, saw the head of the Nile, and visited the Impenetrable Forest. These visits were fun, but most important to me was submerging myself in the culture and working with the farmers.

I visited each of fifty small farms at least three times. Most of the farms were about the size of a basketball court, though some were several square kilometers. I visited some remote areas where the children had never seen a *mzungu* (white person.) They thought I was very funny, some of them were brave enough to approach me and touch my skin. The adults were very kind, helpful, and generous. They invited me into their homes. Often their homes were smaller than an Anatomy and Physiology lab and would house 6-8 people.

A friend of mine who had lived in Kenya for five years told me that I would come to love, and to hate Africa. He was right. I loved the beauty of the land and people, but hated the poverty. I learned much in those five months. Though it was difficult at times, I am very happy that I went.

B.U. was very successful garnering Fulbright Awards last year. Dr. Greg Zimmerman (chemistry) is now in Canada and Dr. Michael Patte (Ed. Studies) is in western Europe. Unfortunately, no students applied. Please talk with me if you have an interest in pursuing a Fulbright. It is a very rewarding experience.





Research in Bloom

Despite the Hartline construction, BAHS research continues. Here is a snapshot of some of the ongoing projects. Be sure to check the April issue of the Biosynthesis for additional student features and reports from regional conferences.

Megan Kopec (B.S. Biology, pre-medical sciences) and **Ralph Hinkle** (biology minor) are research volunteers in **Dr. Brubaker's** lab. They are cloning Nrf2, a transcription factor known to be activated in response to oxidative stress in animals. They have taken the protein sequence for *Drosophila* Nrf2 and used it to find its homologue in *Apis mellifera* (honey bee). Next, they compared the DNA sequences between the two species in regions of greatest similarity. They have recently finished designing primers for amplification of a predicted 164 bp fragment. The group plans to clone this fragment using cDNA from two thermotolerant bee species of the *Megachile* genus. The goal is to clone portions of several genes that are up-regulated during stress in thermotolerant bees and to eventually compare the mRNA levels of these genes in response to heat stress.

Andrew Swank (B.S. Biology) is a research student who is working with **Dr. Corbin** studying bite forces in birds. The question being addressed is whether guild (feeding group) membership can be predicted in birds from bite forces and/or morphology. To do this, birds are caught using mist-nets. Once caught, the birds are fitted with a small USGS aluminum leg band, morphological measurements are made, and then, the fun part, bite-forces are collected. The trick is to get the birds to bite a force plate rather than your fingers! Dr. Corbin and Andy have been working on this project locally on upper campus. This past January Andy joined Dr. Corbin on a research trip to Puerto Rico. Among the birds caught were Caribbean Elaenia, the Mangrove Cuckoo, and Black-faced Grassquit. The results of this research will be presented at this year's COST symposium as well as at the International Congress of Vertebrate Morphology in Uruguay in July.

Photos: Left, **Andy Swank** extracts a bird from a mist net in Cabo Rojo, Puerto Rico. Right, an immature male black-faced Grassquit bites on a force plate.



Jonathan Bobek (MS Biology) begins his thesis research under the direction of Dr. Hranitz this summer in Bursa, Turkey. The objective of his research is to study how patterns of brain gene expression contribute to the division of labor among honey bee foragers. With hive longevity linked to the successful foraging of tens of thousands of bees, they seek to understand how the hive minimizes within-colony duplication of effort and maximizes forager recruitment to diverse natural resources. This research will advance our understanding of how transcription-regulated control of individual foraging behavior contributes to the colony's strong competition for diverse resources that successfully amasses energy reserves (honey) and supports the hive during periods of stress or poor floral resources. This research is supported by a Margins of Excellence Grant from the BU Foundation to Dr. Hranitz and involves collaboration with J.F. Barthell and M. Clement at the University of Central Oklahoma.

More Research in Bloom



Kim Ochal (B.S. Biology, environmental biology and French) and **Holly Raguza** (B.S. Biology, environmental biology) are enrolled in Research in Biology I with **Dr. Rier** this semester. Kim is looking at the effects of short-term phosphorus pulses on the dynamics of leaf litter decomposition in streams. Holly is studying how decomposition of leaf litter from an invasive species (Japanese Knotweed) compares to decomposition of a common native species (Sugar Maple). Both are measuring how fast the leaves lose mass, how the chemistry of litter changes through time, microbial respiration, and microbial enzyme activities. They are both carrying out these experiments in the West Branch of Fishing Creek (see pictures below).

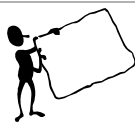


Ghaith Ibrahim (BS, pre-medical science) and **Amanda Kaehler** (B.S. Health Science, pre-physical therapy) are investigating the stress response of the blackworm as a toxicological model. The goal of his research is to describe the range of conditions for hormesis in blackworms and standardize conditions for negative and positive toxicological controls. They are studying the effect of acclimation, aeration, and temperature on stress protein expression (HSP70). This research promises to further integrate behavioral and physiological stress responses of an important freshwater bioindicator used in toxicology studies. **Drs. Hranitz** and **Surmacz** are their mentors. This research is supported by a grant to support undergraduate research in molecular biology from Cherokee Pharmaceuticals to Drs. Brubaker and Hranitz.

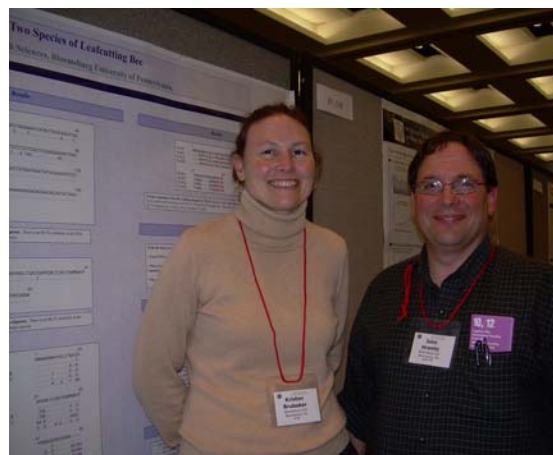
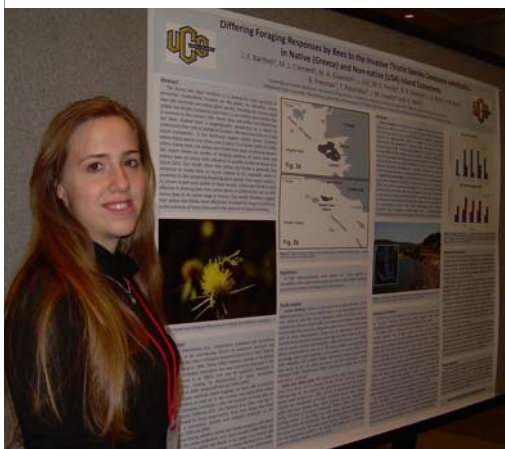
Paige Ricci (BS Biology, molecular biology) is developing microsatellite loci, the type of markers used in DNA fingerprinting, to study the molecular ecology of an invasive leafcutting bee in the U.S. She isolated DNA from samples that she and six other students collected during a National Science Foundation Research Experiences for Undergraduates (NSF-REU) research expedition to Turkey and Greece and is screening primers. Her research is providing the foundation for future studies that will use genotypes to answer such important questions about this invasive species as: How many times was this bee introduced to the U.S.? What are the source populations in the native range of the species? How have invasive populations evolved in their nonnative range? **Dr. Hranitz** is her research mentor. This research is supported by a NSF-REU grant to John F. Barthell (and others) as well as a grant to support undergraduate research in molecular biology from Cherokee Pharmaceuticals to Drs. Brubaker and Hranitz.

Ben Evancho (MS Biology) begins his thesis project this spring under the direction of **Dr. Hranitz** at the Marine Science Center (Wallops Island, VA). The broader goals of his research are to determine if the trend of small body size evolution in island toad populations (island dwarfism) is replicated on several barrier islands and to test the hypothesis that island toad populations are re-selected compared to mainland toad populations. This research is expected to reveal patterns in body size evolution caused by adaptation of the toad to the harsh environments of barrier islands and help refuge managers preserve the unique fauna of barrier islands threatened by rising sea levels. This research is supported by a Research and Scholarship Grant to Dr. Hranitz from the College of Science & Technology.

Debra Walter will defend her master's thesis entitled "In the presence of EphA2, checkpoint kinase 2 promotes unregulated cell growth in human cutaneous melanoma" on Friday, March 26, 2010 at 3:00 p.m. in 163 Hartline. **Dr. Hess** is Deb's mentor.



Sharing Research Results



BAHS researchers go west!

A contingent from BU braved the winter weather in early January to head cross country. Their destination, Seattle, Washington, was the site of the annual meeting of the Society for Integrative and Comparative Biology. Representing BU at the conference were **Paige Ricci**, a biology major in the molecular biology option, and **Drs. Brubaker, Hranitz, Surmacz, and Wassmer** from BAHS and **Dr. Venn** from Geography and Geoscience. The group spent five days attending symposia, platform presentations, and poster sessions on topics ranging from biology education to animal stress responses. **Paige Ricci** (pictured above left) presented research she conducted with **Dr. Hranitz** and his collaborators during a National Science Foundation Research Experience for Undergraduates (NSF-REU) in Turkey and Greece. **Drs. Brubaker** and **Hranitz** (above right) discuss their poster on DNA binding domains in the leafcutting bee. The BU presentations at the Annual Meeting of the Society for Integrative and Comparative Biology are outlined below (undergraduate students in bold, graduate students underlined):

Adamski AV, Vilcheck, JJ, Surmacz CA, Hranitz JM. 2010. Temperature-Induced Stress Responses in the Blackworm (*Lumbriculus variegatus*).

Barthell JF, Clement ML, **Giannoni MA, Liu L, Presky ME, Redd JR, Ricci PR, Stevison BK**, Freeman B, Petanidou T, Hranitz JM, Wells H. 2010. Differing Foraging Responses by Bees to the Invasive Thistle Species *Centaurea solstitialis* L. in Native (Greece) and Non-native (USA) Island Ecosystems.

Hranitz JM, Abramson CI, **Carter IV RP.** 2010. An Ethanol-Induced Hormetic Stress Response in Honey Bee (*Apis mellifera*) Brain Tissue.

Margotta JW, Hranitz JM, Barthell JF, Brubaker KD. 2010. Evolutionary Genetics of Heat Shock Cognate 70 in the Leafcutting Bee, *Megachile apicalis* (Hymenoptera: Megachilidae).

Troutman AR, Hranitz JM, Brubaker, KD. 2010. A Comparison of Several Forkhead Protein DNA Binding Domains in Two Species of Leafcutting Bee.

Venn C, Hranitz, JM, Brunskill, J. 2010. An Interdisciplinary Project across Disciplines in Undergraduate Education: Salt Marsh Vegetation, Distribution of Salt Marsh Invertebrates, and the Application of Geographic Information Science.

Research Shared with the Susquehanna Economic Development Association-Council of Governments (SEDA-COG)

Dr. Barry Nolt presented a talk at a SEDA-COG seminar entitled "Showcasing Innovative Local Energy Projects" in Lewisburg in December, 2009. These monthly events provide a public forum highlighting regional initiatives in energy conservation and alternative energy sources. The Sun-Re Cheese anaerobic digester was one of the projects selected for inclusion in the seminar. Dr. Nolt presented a talk entitled "**Sustainable Methane Gas Yields From the Sun-Re Cheese Digester.**" The seminar audience included representatives from local businesses, manufacturers, school districts, and governments. Currently, graduate student **Ryan Stetz** is conducting trials at the Sun Re digester to optimize methane production as part of his thesis research project.



Allied Health Updates

Important Notice for Medical Imaging & Clinical Lab Science Majors

Medical Imaging and Clinical Lab Science students who have applied to clinical programs this year should see Dr. Kipe-Nolt after spring break. If you have been accepted and made a decision regarding a clinical site, bring the following along with you: curriculum sheet filled out (in pencil) with all the courses you have taken and grades earned, clinical site, clinical director's name and contact information (phone and e-mail), and starting and ending dates for the program.

Medical Imaging Internships for Summer and Fall 2010

Geisinger Medical Center will host four summer and two fall medical imaging internships. Applications are being accepted now. A complete description of the internship and application instructions and forms are at <http://facstaff.bloomu.edu/jhranitz> under the Courses link. Applications are due to **Dr. Hranitz** by April 2.



News from BAHS Organizations

Tri-Beta

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. Tri-Beta provides tutoring to students in introductory biology courses each Monday at 5 p.m. at ABLE, first floor Columbia. Tri-Beta President **Michael Hollman** will attend the Tri-Beta regional conference at The College of New Jersey on March 27. Other students interested in presenting research or attending should contact Dr. Surmacz. Tri-Beta will have a spring bake sale on Monday, March 29 and Tuesday, March 30 in the Hartline lobby area adjacent to the Chemistry and Physics offices. Tri-Beta will also participate in Children's and Siblings Weekend by providing a biology-related game at the Carnival. The Society plans to sponsor a reception for all graduating seniors and free coffee and donuts during finals week. The next Tri-Beta meeting will be on Wednesday, March 24 at 5 pm in 155 Hartline to discuss future activities and to elect next year's officers. Current Tri-Beta officers are: President, **Michael Hollman**; Secretary, **Essie Reed**; Treasurer, **John Redinski**, Historian, **Stacy Brussell**; Advisor, **Dr. Surmacz**.

BAHS Club

The Biology Club is having a busy and fun semester! The upcoming schedule of events is:

March 27: Trip to the Baltimore Aquarium

March 29: Meeting at 7 p.m. in 108 Centennial Hall

April 10: Bloomsburg Park/River Clean-up. This is a great opportunity for community service.

April 12: Meeting at 7 p.m. in 108 Centennial. Elections will be held for next year's officers.

April 16: Health Science Symposium

April 22: End of the Year Party at Bloomsburg Town Park

For more information on BAHS club activities, please see President, **Megan Dager**; Vice-President, **Michelle Stipanovic**; Secretary, **Gina Grasso**; Treasurer, **John Redinski**; Historian, **Dave Francavilla**; Public Relations, **Maci Aumiller** and **Lauren Gedman**. Club advisors are **Drs. Hranitz, Brubaker, and Corbin**.



Kick it for Haiti!

BAHS Club is sponsoring a Kick-ball tournament to raise money for the Haiti Relief Fund!

Who: Any student or faculty member in the College of Science and Technology

When: Saturday, April 24th

Teams: Must have at least 10 people, \$1 per person.

Teams must sign up outside Dr. Brubaker's office by the end of March.

Pre-Medical Sciences Club

The pre-medical sciences club is having a busy semester. The club hosted Ms. Daria Winnicka from Shermann College of Chiropractic to discuss careers in chiropractic medicine and Drs. Angelo, Gonzalez, and Yue from BU's department of Audiology to discuss their doctoral program in audiology. The pre-medical sciences club recently held a Valentine's Day fundraiser to benefit T & D Cats of the World, complete with fuzzy critters! In March, members of the pre-medical sciences club will attend Pre-Med March Madness to begin preparing for professional school. Serving as officers this year are: President, **Essie Reed**; Secretary, **Megan Kopeck**; Treasurer, **John Redinski**; and Public Relations, **Melanie Yodock**. **Dr. Ardizzi** is the club's advisor. Elections for next year's officers will be held in April.



Pre-professional Committee

Pre-Med March Madness

Interested in applying to professional schools in medical fields?

These workshops sponsored by BU's pre-professional committee are just what the doctor ordered:

Sophomores and Juniors who are interested in careers in various medically-related professions (medicine, dentistry, veterinary medicine, optometry, etc.) are strongly encouraged to attend the Pre-Med March Madness workshops which will begin at 6:00 p.m. at ABLE in the Columbia Living Learning Community Room on these Mondays in March:

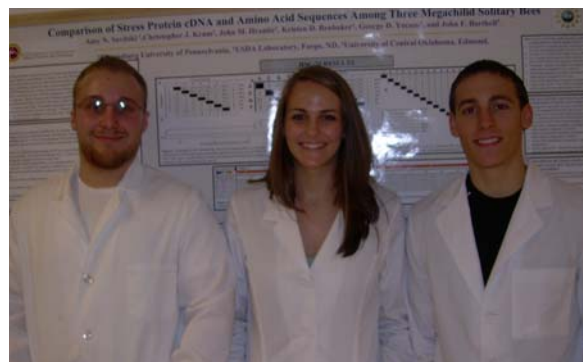
March 15: The Application Process. The Pre-Professional Advisory Committee will guide you through the rigors of the application process, including AMCAS.

March 22: Telling Your Story in the Personal Statement. Writing about yourself is probably the most difficult part of the application. For that reason, applicants tend to procrastinate in writing this important document. Come to this workshop with a printed rough draft of your personal statement, or at least some ideas on paper for break-out sessions for peer and advisor review. *Juniors are especially encouraged to come, but all are welcome.*

March 29: Creating an Appropriate Resume. Sure you have a resume, but is it appropriate for your application? Come to this workshop with a print-out of your resume for break-out sessions of peer and advisor review. It is OK if the resume is kind of rough. *Sophomores are especially encouraged to attend, but all are welcome.*

JAN PLAN NEWS

Geisinger Medical Center's Jan Plan brings students into the hospital for an intensive 9-day experience that provides a first hand look at the medical profession. Participating in Jan Plan this year were, pictured from left, chemistry major **Ken-neth Myers** and biology majors **Michele Stipanovic** and **Kyle Correll**. Jan Plan students interact with medical students, residents, and physicians during rounds, case study discussions, and observations. Michelle, Ken, and Kyle rotated through various medical departments and observed surgeries. Ken observed Neurosurgery, Dermatology, Morning Rounds, Critical Care and Ear, Nose, and Throat. Kyle's most memorable experience occurred in the operating room, where he helped a surgeon communicate with a Spanish-speaking patient. Michelle was impressed by the teamwork and collaboration involved in providing quality patient care. She rotated through OB/GYN, Pediatrics, Internal Medicine, Orthopedics, Cardiology, and Critical Care. All participants reported a new respect for health care professionals.



Open House

The Philadelphia College of Osteopathic Medicine (PCOM) will hold an open house on Friday, April 16, 2010. The program will begin at 5 p.m. and last until 8 p.m. The event will introduce students to osteopathic medicine and its principles, the application process at PCOM, the campus, and the simulation labs. To reserve a place, please respond on-line at www.pcom.edu

Summer Camp

APEX, short for **A**pplication **P**reparation **E**Xtreme, is a residential summer camp at the University of South Carolina that helps pre-med students prepare for the medical school application process. This intense five-day program runs from June 6 to 10, 2010. Participants will have the opportunity to dissect human cadavers, shadow physicians, sharpen their interview skills, and draft a personal statement. To be eligible, you must have 60 earned credits. Cost is \$825. For application information, see: <http://www.sc.edu/oppa/med/APEX.shtml>

Premedical Professional Development Conference

The American Medical Student Association Premedical Chapter at Drexel University is hosting a Premedical Professional Development Conference on Saturday, April 3 from 8 a.m. to 6 p.m. in the Bossone Research Enterprise Center in Philadelphia. The program includes sessions with deans and admissions directors from area medical schools, panel discussions with medical students, information on M.D./Ph.D. programs, and a resource fair. There is a \$15 registration fee. Register by March 26 by sending an e-mail to Drexel.amsa@gmail.com

Have questions: For information regarding professional school contact: Committee Co-Chairs, **Drs. Ardizzi** and **Melnychuk** (BAHS), **Drs. Bell** and **Morgan** (Chemistry and Biochemistry), or **Dr. Surmacz** (BAHS).

IMPORTANT INFORMATION ON COURSE OFFERINGS



Summer Semester

Session 1, May 24 to July 2, 2010

Course Offerings: Concepts in Biology 1 (50-114), Anatomy and Physiology 1 (50-173), Introduction to Nutrition (50-205), Microbiology (50-242), Immunology (50-343), Ornithology (50-459/559) (1st 3 wks).

Attention Health Science Students: College Algebra will be offered – this section ONLY will count as an equivalent to Algebra for the Health Sciences. College Algebra in session 2 will not count.

Session 2, July 7 to August 13, 2010

Course Offerings: Anatomy & Physiology 2 (50-174), Human Sexuality (50.230), Ecology (50-351).

Attention BS/BA Biology majors: Ecology will NOT be offered in the spring of 2011. If you are planning on graduating in spring 2011, you must either take ecology summer 2010 or fall 2010.

Summer Chemistry and Physics Offerings

The Chemistry Department at Bloomsburg University plans to offer the following courses this summer: Introductory Chemistry (50.101), Chemistry for the Sciences I (52.115), and Chemistry for the Sciences II (52.116). The Physics Department will offer Intro. Physics I (54.111) during Session I and Intro. Physics II (54.112) during Session II.

Summer Offerings at the Marine Science Consortium

The following Marine Science courses are offered at The Marine Sciences Consortium at Wallops Island, VA. See **Drs. Klinger** (128 OSH), **Hranitz** (G16OSH), or **Corbin** (173 HSC) for enrollment details. Fees include tuition to BU and MSC station fees.

May 17 - June 4: (55-241) Marine Biology and (55-491) Coral Reef Ecology

June 7 - June 25: (55-211) Field Methods in Oceanography and (55-343) Marine Ichthyology

June 28 - July 16: (55-221) Marine Invertebrates and (55-451) Coastal Environmental Oceanography

July 9 - August 6: (55-343) Marine Ichthyology and (55-464) Biological Oceanography

Fall Semester 2010



- Microbiology (50-242) and Cell Biology (50-271)

Each has Concepts in Biology 2 and Chemistry for the Sciences 1 as prerequisites, so only BS/BA biology majors will be able to schedule on their own. Changes are in the works and we hope they will be put into effect before or at least during scheduling. **New prerequisites: EITHER Concepts 2 and Chem 1 OR Concepts 1, AP1, and Chem 1. BS Health Science students wanting these courses will put in a request with their advisor or with course instructor (Drs. Surmacz or Kipe-Nolt).**

Both Population Biology (50.460/560) and Current Topics in Biology: Vertebrate Functional Anatomy (50-489/589) can be used as BS Health Sciences electives. They are also BS/BA Biology electives. **Population Biology currently has Ecology and Genetics as prerequisites – BS Health Science students wanting this course will put in a request with their advisor or with the course instructor (**Dr. Hranitz**).

Other electives

- BS/BA Biology only: Freshwater Biology (50-253); Conservation Biology (50-451/551)
- All majors: Immunology (50-343), Vertebrate Histology (50-364)

Physiology Courses

- BS/BA Biology Majors: Human Physiology (50-474), Microbial Physiology (50-478). Note: Plant Physiology will be offered spring 2011.

BS Health Science Majors: Human Physiology (50-474). Note: Comparative Animal Physiology will be offered in Spring 2011.

Other Notes:

- Fundamentals of Organic Chemistry will be offered both fall 2010 and spring 2011. If this is your organic chemistry, please plan accordingly.

Three sections of Ecology will be offered in the fall. **NOTE: Ecology will NOT be offered in the spring of 2011. If you are planning on graduating in spring 2011, you must either take Ecology summer 2010 or fall 2010.**



Who's Who

The following BAHS students were recently selected for inclusion in Who's Who Among College and University Students based on their scholarship, leadership, service and potential. Congratulations!

Samantha Bussanich is a double major in Biology and Spanish. Samantha was president of Tri-Beta, vice-president of the Pre-Medical Science Club, and is a member of Phi Sigma Iota Honor Society, the Biology and Allied Health Science Club, and the Women's Choral Ensemble. Samantha managed the Children's Hospital Project for the group, Developing Ambitious Student Leaders. She interned as a Virology Research Assistant at the Istituto Zooprofilattico Sperimentale delle Venezie in Legnaro in Italy. She implemented standard lab procedures and assisted the Ministry of Health. Samantha has volunteered as a tutor, as a hospital aid, and has participated in Relay for Life.

Stacy Brussell is a B.S. Biology major and will graduate May 2010. Stacy is a dean's list student and historian of Tri-Beta Honor Society. Stacy's primary interest is in veterinary medicine. She has interned at Cherry Ridge veterinary Clinic in Honesdale, PA, has experience at Wyoming Valley Emergency Animal Clinic, and has worked at veterinary clinics for over 5 years. Stacy is the pre-veterinary group representative for the Biology and Allied Health Club. She has volunteered at a Rabies Clinic, been involved in 4-H, and is the co-captain of BU's equestrian team.

Michael Hollman is a B.S. biology major, pre-medical science option. Mike is a dean's list student, a member of Phi Kappa Phi Honor Society, and the current president of Tri-Beta. He is a student worker in the microbiology labs. Mike conducted research with Dr. Barry Nolt on the isolation, identification, and pathogenicity of *Pythium* species associated with root rot in lilies. Mike received a Tri-Beta research grant to support his work and he will present his results at the regional Tri-Beta meeting. Mike is a volunteer tutor for Tri Beta and the Bloomsburg Women's Center. He volunteered as a youth soccer coach and participates in a local community cleanup.

Megan Kopec, a biology, pre-medical science major, will graduate in Spring 2010. Megan, a dean's list student, is presently the secretary of the Pre-Medical Sciences Club. She tutors students in biology, chemistry, and math at the University Tutorial Services. Megan has conducted research involving protein isolation and purification with Dr. Kristin Brubaker. Megan is a lifetime member of the Girl Scouts and helps run a local Brownie Girl Scout Troop. Megan received the Girl Scout Gold Award for providing in excess of 60 hours of community service for a single project.

Carrie McClure is a fall 2009 graduate who majored in secondary education and biology. Carrie is a dean's list student and member of Tri-Beta Honor Society. Carrie was a student worker in the Department of Biological and Allied Health Sciences where she prepared media and solutions for genetics lab and tended to the plants in the teaching greenhouse. Carrie is a member of the National Science Teachers Association and conducted her student teaching at Bloomsburg Area School District. Carrie is very active in her local 4H Chapter.

James Noll is a biology, pre-physical-therapy student who will graduate in summer 2010. Jimmy is a dean's list student, a member of Tri-Beta, and a member of Phi Kappa Phi Honor Society. He received a David and Roberta Soltz Scholarship and a National Science and Mathematics Access to Retain Talent (SMART) Grant. Jimmy conducted an internship in physical therapy at Phoenix Rehabilitation and Health Services in Bloomsburg where he assisted in the assessment and treatment of patients. Jimmy has volunteered in the community as a member of the Northeast Pennsylvania Alliance Against Homelessness.

Jason Nolt, a biology, pre-medical sciences major, is a dean's list student and member of Tri-Beta Biology Honor Society. Jason has conducted research on anaerobic digestion of cheese whey and on iron transporters in plant roots with Dr. George Davis. He participated in the Jan Plan experience at Geisinger Medical Center, where he shadowed physicians and observed surgeries. Jason is a member of the varsity tennis team and has been named a scholar athlete. He has served the community by assisting with flood relief, Special Olympics, the Grantham Retirement Home, and basketball and tennis clinics with area youth.

Christopher Ort is a fall 2009 graduate who majored in secondary education and biology. Chris was the 2008-2009 president of Tri-Beta Honor Society. Chris conducted research on the movements of leaves in plants with Dr. Kevin Williams. He presented the results of his research at a Tri-Beta Regional Conference and at the annual meeting of the Commonwealth of Pennsylvania Biologists. Chris was a student worker responsible for assisting with genetics labs and for maintaining our campus greenhouse. Chris completed his student teaching at Danville School District.

Scott Pfaff is a fall 2009 graduate who majored in B.A. Biology, pre-physical therapy. Scott is a member of Phi Theta Kappa International Honor Society. Scott interned at Buck's Physical Therapy and Sports Rehabilitation in Holland, PA. He has volunteered at St. Mary's Medical Center in Langhorne, PA in the physical therapy department and in the joint center. Scott is an Eagle Scout and has an extensive record of community service.

MORE WHO's WHO STUDENTS

John Redinski is a senior biology major and chemistry minor. John is currently serving as the treasurer of the BAHS club, the Pre-Medical Sciences Club, and Tri-Beta. He tutors in biology and chemistry and works part time as a phlebotomist at Geisinger Medical Center. John has conducted research in molecular biology in Dr. George Davis's lab. In the community, John has volunteered at Bloomsburg Hospital and in the Emergency Department at Geisinger Medical Center. He participated in Relay for Life, the American Red Cross Blood Drive, and events to benefit the Ronald McDonald House, local ill children, and Haiti disaster relief.

Essie Reed earned her B.S. in Biology in fall 2009. Essie is president of the Pre-Medical Sciences Club and as secretary of Tri-Beta Honor Society. She is also a member of Phi Kappa Phi Honor Society. Essie has worked as a student assistant in the Dean's office and as a volunteer biology tutor. Essie has shadowed health care professionals as part of the University of South Carolina's APEX program and Penn State's Primary Care Scholars program. She has volunteered at the Janet Weis Children's Hospital as a Child-Life Volunteer. She has conducted research with Dr. George Davis, where she helped develop techniques to isolate RNA and DNA from oat plants.

Maxwell Tolan is a biology, pre-medical science major who will graduate in May 2010. Max is a dean's list student and member of the interdisciplinary honor society Phi Kappa Phi. Max has served our country with distinction as an Army medic for nine years and an emergency medical technician for seven years. Max's service has taken him in the field to Afghanistan, Germany, and Iraq. He has been commended on many occasions for his meritorious service.

BAHS Scholar Athletes Recognized

Seven BAHS students were among those honored at the recent Scholar-Athlete Luncheon for their excellence on the field, in the pool, on the court, and in the class room. Congratulations to **Michael Bierds**, a biology major and a member of the swim team; **Michael Busada**, a biology major and a member of the swim team; **Marc Francola**, a medical imaging major and football team member; **Lindsay Kupferschmidt**, a pre-physical therapy major and lacrosse team member; **Jason Nolt**, a biology, pre-medicine major and member of the tennis team; **Julia Rush**, a pre-physical therapy major and field hockey team member; **Marissa McDowell**, a biology major and soccer team member; Congratulations to all our scholar-athletes!



Mark Your Calendars!

There are a number of local, state, and regional meetings planned for spring semester. This is a great opportunity to attend a scientific meeting and to present the results of your undergraduate or graduate research projects.

The Pennsylvania Academy of Science (PAS) meeting is scheduled for April 9—11, 2010 near Harrisburg, PA. Several BAHS students and faculty are planning to present research talks and posters. Look for details in future issues of *BioSynthesis*.

East Stroudsburg University is hosting this year's annual meeting of the Commonwealth of Pennsylvania University Biologists (CPUB) on April 17, 2010. The featured speaker is Dr. Victoria Meller from Wayne State University. She will present the keynote address entitled "Sex Chromosomes: Just Asking for Trouble." The meeting will also feature workshops on preparing for graduate school, wildlife forensics, bat echolocation, and radio tracking bears. The deadline to submit abstracts is April 2, 2010.

The College of Science and Technology is holding their college-wide Research Day on Friday, April 30 at Andruss Library. See your research mentor for additional information.

The 20th Annual Sigma Xi Student Research Symposium will be held on Friday, April 23, 2010 at Saint Joseph's University in Philadelphia. The keynote speaker, Dr. Hazel Barton from Northern Kentucky University, will speak about "Amazing Caves: Amazing Microbes." Abstracts are due Thursday, April 9. For registration information, see: <http://www.sju.edu/srs>



New Research Grant Opportunity for BAHS Undergraduates

The Donald D. Rabb Biology Research Award provides funds for undergraduates to purchase supplies for conducting research in the Department of Biological and Health Sciences at Bloomsburg University. The award is named in honor of Dr. Rabb, faculty emeritus and former BAHS chairperson, who retired in 1984. To be eligible, you must be pursuing a major in biology or health science. There are no minimum credit requirements. Student applicants do not need to enroll in research for biology credit in order to receive funding. However, students must have a BAHS faculty member as a research mentor. Up to \$200 may be awarded and can be used to purchase research supplies and travel required to conduct research. Travel to present research at scientific meetings will not be considered. For additional information and an application, please contact your research mentor. The deadline to submit applications for summer or fall grants is April 15, 2010.



BAHS Students Gain Experience

An internship is a supervised learning experience that allows you to apply your classroom knowledge to the work environment. In addition to helping you to clarify your career goals, internships can assist you in gaining admission to graduate school, professional programs, or clinical experiences. They provide great opportunities to learn more about your field of study and to network with professionals. Internships can count for 3 to 15 hours of credit; however only 3 credits may be applied as biology elective credits. For more information on internships, contact your academic advisor and check out the BU internship website: <http://internships.bloomu.edu/index.html> Advanced planning is required!

The following students are conducting internships spring semester:

Christina Bickel (BA Biology) is an intern in physical therapy at Susquehanna Valley Medical Specialties.

Amanda Caso (BS Biology, pre-medical science) is interning at the dental office of Dr. Falvello in Hazleton, PA. Amanda is getting experience in various procedures such as composite fillings, surgical extractions, denture impressions, amalgam fillings, and root canals.

Nicole Gerard (BA Biology, natural history option) is conducting an internship to assist in the study of three barrier island and three mainland populations of Fowler's toad along the Eastern Shore of Virginia. She is working with Ben Evancho (MS in Biology) to investigate an interesting case of island dwarfism, where the body size of the island toads is smaller than the body size of nearby mainland toads. Because call traits scale with body size and signal species to potential mates, Nicole developed her own research project to record and analyze male advertisement calls in each of the populations. Her study will compare the advertisement calls of male Fowler's toads in island versus mainland populations to examine evidence of premating isolation among island and mainland populations.

Shannon Grimes (BS Biology) is conducting an internship in physical therapy at Geisinger HealthSouth Rehabilitation Hospital. She is observing physical therapy evaluations and treatments in an in-patient setting.

Jason Nolt (BS Biology, pre-medical science) is an intern in family practice medicine with Dr. Dean Christian at Geisinger-Bloomsburg, Reichart Road.

Lisa Oney (BA Biology) is an intern at Bloomsburg Hospital where she has rotated through phlebotomy, histology, pathology, and microbiology. She will have the opportunity to observe surgeries and the maternity ward.

Sara Taylor and Jillian Kida (BS Medical Imaging) are interns at the Geisinger Medical Center Department of Radiology. This internship provides them with opportunities to develop their knowledge of the medical imaging profession and learn how medical imagers interact with other members of the healthcare team.

Lisa Visnosky (BA Biology) is an intern at Clyde Peeling's Reptiland in Allentown, PA. Reptiland is an accredited zoo that specializes in reptiles and amphibians.

Internships are available for biology majors at ZooAmerica at Hersheypark this summer. See the BU internship website for information.

Two Hearts Collide in Hartline

It all started in the microbiology prep room in Hartline on an ordinary day in October. A professor introduced **Debon Berger**, a junior clinical laboratory science major and **Dave Kolb**, a biology graduate student. The short story is that they really hit it off! What started as a casual friendship soon became a romantic relationship. On Valentine's day, Dave proposed to Debon at her apartment. They have set their wedding date for August 20, 2011 and plan to hold the ceremony right here at Bloomsburg University. Dr. Henry credits these events to his yeast cultures in the microbiology lab refrigerators. You know how those yeast can produce those "a" and "alpha" pheromones for mating.....

