



BioSynthesis

Volume 6 Issue 1 (March 2007)

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

Spring Semester Dates

- MAR 10—18:** Spring Break
- MAR 20:** MCAT Review session on physics, Pre-Med Club, 178 HSC, 5:30 p.m.
- MAR 22:** COST Spring Honors Banquet, Multi-purpose Room A, Kehr, 6:00 p.m.
- MAR 27:** Pre-Medical Sciences Club Meeting, 178 HSC, 5:30 p.m.
- MAR 30—APR 1:** PA Academy of Science meeting, Monroeville, PA
- MAR 31:** Practice GRE exam. CEH 218, 8:30 a.m.
- APR 7, 12, & 16:** MCAT exam
- APR 12—13:** Health Sciences Symposium
- APR 13 — 15:** CPUB, Edinboro University
- APR 18:** Chemistry of the Food Pyramid, Columbia, 9 p.m.
- APR 22:** MCAT Exam
- MAY 3—4:** COST Research Day



Look what's inside:

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BAHS Students Present Research at National Conference

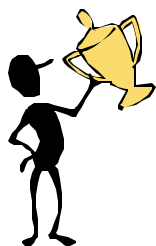


Laura Halon (left), **Danielle Wartko** (center), and **Joel Gyimesi** (right) take time out to pose in front of a research poster at the annual meeting of the Society for Integrative and Comparative Biology (SICB) in Phoenix, Arizona in January. The students presented posters containing the results of their undergraduate research projects conducted in collaboration with BAHS faculty.

SICB Presentations (*presenter) by BU Students and Faculty:

- Gyimesi, J.*; Wartko, D.; Hranitz, J.M.; Baird, T.A. Microsatellite Evidence that Territorial Males Acquire Higher Reproductive Success Than Nonterritorial Males in *Crotaphytus collaris*.
- Halon, L.*; Hranitz, J.M.; Brubaker, K.D.; Yocum, G.D.; Barthell, J.F. Comparison of Stress Protein cDNA and Amino Acid Sequences Among Three Bee Species in Different Thermal Environments.
- Hranitz, J.M.*; Wartko, D.; Yeany, L.; Baird, T.A. Heterozygosity-Fitness Correlations in a Population of Collared Lizards, *Crotaphytus collaris*.
- McBrayer, L.D.*; Corbin, C.E.; Stayton, C.T. Covariation between morphological and behavioral evolution in lizards.
- Wassmer, G. T.*; Remaley, J. Locomotion and feeding at low temperatures in the woodroach *Parcoblatta pennsylvanica*.

For a behind the scenes look at the SICB meeting, see Dr. Hranitz's article on page 9.



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 2006.

Great job!

Medical Imaging

Jessica Boyer
 Tony DiveI
 Elyssa Goldstein
 Grace Goode
 Elizabeth Heim
 Lauren Keeny
 Katie Krause
 Jennifer Kubilus
 Jennifer Ruppert
 Mallory Matzura
 Stephanie McGaw
 Briana Miller
 Caitlyn Scout
 Nicole Seward
 Taylor Washburn
 Kevin Wray

Pre-pharmacy

Kayleen Balliet
 Laura Garzio

B.A. Biology

Jamie Willour

B.A. Biology, Pre-physical Therapy

Justin Blessing
 Courtney Dean
 Melissa Dobson
 Kimberly Dodson
 Kaylee Fischer
 Krystal Hernandez
 Jennifer Krott
 Justin Lavo
 Krista Rae Petruskevich
 Kenneth Thomas

Secondary Education Biology

Adam Hoagland
 Rachel Jacobs
 Eric Weathters

B.S. Biology

Andrew Ackerman, pre-medical sciences
 Kyle Bartol, pre-medical sciences
 Daniel Bertschman
 Nicholas Bixler
 Sarah Bounds
 Richard Carter
 Erinda Como
 Michael Dzwonek
 Nathan Gainer
 Maria Gallagher
 Jared Geissingner
 Phuoc Ho
 Michael Hollman
 Heidi Hoelper
 Deborah Hunsberger
 Brian Kempsey
 Christopher Kashi
 Megan Kopec
 Joanna Kraynak, pre-medical sciences
 Cory Lavoie, environmental biology
 Jared May
 Talia McAlister
 Jonathan Molinari, biotechnology
 Jade Pickenheim
 John Redinski, pre-medical sciences
 Essie Reed
 Anna Simpson
 James Sweeting, pre-medical sciences
 Jessica Teders
 Maxwell Tolan
 Arifah Uqdah
 Robert Wert
 Ashley Yelinek
 Michelle Zarko, pre-medical sciences

Thanks to the Science and Tech Day Crew!



Bloomsburg University hosted its annual Science and Technology Day on Saturday, February 17, 2007. This program provided an opportunity for high school seniors who are interested in BU's College of Science and Technology to visit campus and meet with faculty and students. BAHS hosted students and their families who have expressed interest in majoring in our academic programs. The day included a welcome and introductory session, a tour of department labs, hands-on demonstrations, and meetings with academic advisors to learn about our various curricula in biology and allied health sciences. The

day was an unqualified success, due in large part to the students who helped make our visitors welcome. Thanks goes out to the following helpers: **Pam Hudock, Michelle Sienkiewicz, Andy Troutman, Kim Dodson, Cory Lavoie, Laura Halon, Danielle Wartko, and Nick Bixler.**



Who's Who in BAHS

Congratulations to the following BAHS students who were recently named to Who's Who Among Students in American Colleges and Universities. Selection was based on leadership ability, scholastic achievement, personal traits, societal contributions, and professional promise.

Courtney Dean. Courtney, a senior biology major, plans to enter a doctoral program in physical therapy after graduation. She has completed an internship in physical therapy at Susquehanna Valley Medical Group in Bloomsburg. Courtney is a dean's list student and three time scholar athlete. She is a member of the women's varsity swim team, a swimming instructor, and an elected swim team representative to the Student-Athlete Advisory Committee. She has volunteered for Dollar Dinners and has been a member of the BAHS Club.

Laura Halon. Laura is a senior biology major pursuing the biotechnology option. Laura has conducted undergraduate research since her freshman year at BU. She has presented her research locally at the College of Science and Technology Research Day, at state meetings such as the Pennsylvania Academy of Sciences, and recently at a national meeting of the Society of Integrative and Comparative Biology. Last summer she was a research intern at the Weis Center for Research, Geisinger Clinic. Laura is a recipient of the Kozloff Undergraduate Research Award and is a Dean's List student. She is Vice-President of the Biology Club and President of Tri-Beta Honor Society. After graduation, Laura will enter the master's program in Pathologist Assistant at Drexel University.

Phuoc Ba Ho. Phuoc is a senior biology major and can usually be found sitting on the benches in Hartline! He is a Dean's List student and member of Tri-Beta Honor Society. Phuoc's goal is to pursue a career in physical therapy or pharmacy. He is currently employed at the pharmacy at Weis Markets and volunteers in a nursing home/rehabilitation center in Berwick.

Brock Solomon. Brock is a senior B.A. Biology major who is planning to enter the physician assistant program at Lock Haven University. Brock is a Dean's List student and past-recipient of a BAHS scholarship. He has served as a tutor and has volunteered at the Janet Weis Children's Hospital at Geisinger. Brock is an eagle scout and active member of Campus Crusade for Christ.

Trinity Stempko. Trinity is a senior biology major who can frequently be found in the BAHS office in her position as a student secretary. Trinity is a Dean's List student and serves as Vice-President of Tri-Beta Honor Society. She is currently conducting independent research as part of the Methods in Biotechnology course. She participates in the campus Geocaching Club and works off-campus at Hilton Hotel corporation.

Jessica Teders. Jess, a senior biology major, plans to pursue a career as a physician assistant. Jess is a Dean's List student and biology tutor. She serves as secretary of Tri-Beta Honor Society and is a past recipient of the BAHS scholarship. She has interned with a psychiatrist, has shadowed a physician assistant, and has worked as a registrar in the Emergency Department at Lehigh Valley Hospital.

Ashley Yelinek. Ashley, a senior biology major, is interested in pursuing a career in medicine. Ashley is a Dean's List student and has been inducted into Phi Kappa Phi and Tri-Beta Honor Societies. She is member of the BU Honor's program and is a recipient of the Kozloff Undergraduate Research Award. Her Honors Independent Study project examined the relationship between tethered swimming and race performance in competitive male and female swimmers. Ashley will present her work at the Pennsylvania Academy of Sciences meeting near Pittsburgh in March. Ashley is a 4-year member of the varsity women's swim team, a 3-time scholar-athlete, and a 2-time PSAC champion in the 1650-freestyle.



Pre-professional Committee News

UPCOMING OPEN HOUSES:

University of Pennsylvania

An open house for students underrepresented in the health professions and pre-health advisors will be held on Thursday, March 22 from 9 a.m. to 3:30 p.m. at the University of Pennsylvania. The School of Dental Medicine, the School of Medicine, the School of Veterinary Medicine, and the Biomedical Graduate Studies Program will have representatives to talk with you. For early registration, go to <http://www.cu2000.med.upenn.edu/hps/add.asp>

New York College of Podiatric Medicine

The New York College of Podiatric Medicine in New York City invites you to an open house on March 31 at 9:00 a.m. to learn about podiatry, the college and its clinics, and student life. To register, visit <http://www.nycpm.edu/openHouse.asp>

ATTENTION DENTAL STUDENTS

The booklet, *2008 Information for Applicants*, from the Associated American Dental Schools Application Service is now available from **Dr. Ardizzi**, 105 Hartline.

SUMMER PROGRAMS

Johns Hopkins University School of Medicine will offer its 4-week, 4-credit Human Anatomy course in June 2007, on the Medical School campus in Baltimore. The course includes both lectures and demonstrations using human cadavers. Currently enrolled undergraduates who have completed their sophomore year are eligible. Tuition for the course is \$3700 and includes the textbook and an atlas. A completed application form, a non-refundable application fee of \$50, and supporting materials (college transcript, letter of recommendation from an academic advisor) are due by March 15, 2007. For further information and an application form see <http://www.hopkinsmedicine.org/FAE/anatomyinstitute>. For further information, contact Ms. Arlene Daniel at adaniel@jhmi.edu.

PRE-MEDICAL SCIENCE CLUB NEWS

Dr.

Stuart Hartman, an area chiropractor, recently visited the Pre-Med Club to discuss the field of chiropractic medicine. An MCAT review session for physics will be held on March 20 at 5:30 in 178 HSC. The club plans to invite representatives from the armed services to discuss opportunities and scholarships available for healthcare professionals. Also under discussion is the club's participation in Relay for Life. Stay tuned for details. For more information, contact **Dr. Ardizzi**, club advisor, or the following club officers: President, **Nick Bixler**; Vice-President, **Pam Hudock**; Secretary, **Mallory Garnett**; Treasurer, **Hong Ho**; Public Relations, **Sherrol Browne**. The next meeting of the Pre-Medical Science Club is March 27th at 5:30 p.m. in 178 HSC.

MCAT UPDATES

The MCAT is a standardized exam required for admission to allopathic, osteopathic, and some veterinary schools. The MCAT exam is now computerized and is administered 22 times per year with your choice of a morning or afternoon testing sessions. Upcoming dates are: April 7, 12, and 16; May 11, 16, 25, and 31; June 15; July 13 and 24; and August 6, 9, 14, 16, and 20. To view a complete schedule of exam dates, see the Pre-Medical Sciences Bulletin Board outside 105 Hartline. Online registration for the MCAT is available 6 months before each test date at <http://www.aamc.org/students/mcat/>

JAN PLAN

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. The students had the opportunity to interact with medical students, residents, and physicians during rounds, case study discussions, and observations. The format this year was changed to included two days that mirror the real work day of a medical student or resident. Students started at 3 p.m. and worked all night until after morning rounds, leaving mid-afternoon the next day. Participating in Jan Plan this year were biology majors **Jared Geisinger** and **Joanna Kraynak**. The students were exposed to many medical specialties and appreciated that the physicians and physician assistants explained what they were doing. The students enjoyed the experience and found it to be an "eye-opener." The JAN PLAN experience can be very helpful in determining whether the medical profession is for you.

Check out the Pre-Pro/Pre-Grad Community

Dr. Bell, Chemistry Department, has set up an online community on Blackboard to assist students interested in attending professional or graduate school. The site contains exam study aids, helpful links, a discussion board, announcements, and a "word of the week" to build that ever important vocabulary for standardized tests. For more information, see Dr. Bell.

BAHS Student receives Kozloff Award

Zachary Wert received a prestigious Kozloff Undergraduate Research Award this year for his work on woodpecker foraging behavior and microhabitat selection. Surprisingly, there is not much known about the habitats and behaviors of these birds in eastern PA from a community ecological perspective. Zac's work is important in that it provides both a better understanding of the relationships between woodpeckers and their habitats and sets up future research students with baseline comparative data. The Kozloff award is given to students engaging in significant capstone research under mentor supervision. Zac's mentor is Dr. Corbin.



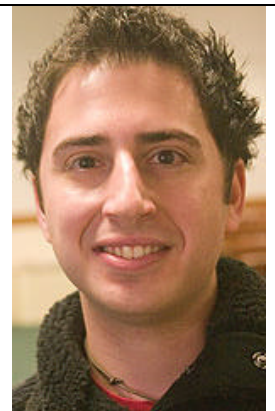
BAHS senior receives MLK Humanitarian Award



Judith Harry (left) was honored to receive the 2007 Martin Luther King Student Humanitarian Award at the recent Martin Luther King, Jr. Banquet. Judy was unable to attend the banquet (taking GRE exams!) so her friend and fellow biology major, **Mallory Garnett** (right), accepted the award on her behalf. Judy, a senior biology major, is an active member of the BU community. She is an assistant in the Office of Multicultural Affairs where she helped to organize large conferences and programs. Her leadership skills are evident by her service as the Vice President of the Student Organization of Latinos and the Secretary for the Tranquility Club. Judy is also a member of the A-Club (a preparatory graduate school program), the University Gospel Choir, and the Black Cultural Society. She mentors students in the Aqui-Y-Ahora and the Act 101 program. Judy hopes to pursue a doctoral degree in audiology. Her interest is based on a internship last summer in the Speech, Hearing and Language Clinic at BU. Congratulations Judy! We are very proud of you!

BAHS has a Rising Star

Joel Gyimesi, a senior majoring in biology and pursuing a chemistry minor, was recently featured on the BU website as a rising star. We are very proud of Joel, too! Joel is from Camp Hill and graduated from East Pennsboro Area High School. Joel conducted research with Dr. Hranitz and investigators from the University of Central Oklahoma and Oklahoma State University. The project examined "Variance in Reproductive Success Among Collard Lizard Females." Joel recently presented this work at the annual meeting of the Society for Integrative and Comparative Biology. Joel is interested in pursuing a career in optometry. Last summer, he conducted an internship with Dr. Betsy Hancock, a developmental optometrist in Bloomsburg. Joel is the treasurer of the Biology and Allied Health Sciences Club. Congratulations Joel!



BAHS Scholar Athletes Recognized

Five BAHS students were among those honored at the recent Scholar-Athlete Luncheon for their excellence on the field, in the pool, and in the class room. Congratulations to **Sarah Bounds**, a biology major and a member of the cross country and track teams; **Courtney Dean**, a pre-physical therapy, biology major and swim team member; **Bryan Siegfried**, biology major and member of the baseball team; **Lauren Sterkenberg**, medical imaging major and swimmer; and **Ashley Yelinek**, biology major and swim team member. Special congratulations to **Ashley Yelinek** who was selected to speak at the luncheon on behalf of the scholar athletes. Kudos to **Ashley** and **Courtney Dean** for their performance at the PSAC swimming championships. Ashley defended her conference title in the 1650 freestyle. Courtney was a member of the 400 freestyle relay team that qualified for the NCAA championships. Congratulations to all our scholar-athletes!



BAHS Faculty Updates

Dr. Kristin Brubaker is one of only five faculty members campus-wide to receive the Provost's Award for Excellence in Research and Scholarly Activity. This award recognizes and encourages scholarly achievement. Dr. Brubaker will receive \$1,000 to be used for professional travel. Dr. Brubaker also received a President's Fund for Academic Initiatives Award to fund research this summer.

Dr. Michael Allar has received three university grants since starting at BU last semester. The President's Fund for Academic Initiatives grant for \$2750 will assist in integrating undergraduate students into the research laboratory. The Research Scholarship Fund Award is for \$1419. This research will examine the factors contributing to the molecular control of skeletal muscle atrophy. The BU Foundation, Margin of Excellence Grant is for \$5750 and is entitled the "Structural and functional connections of muscle satellite cells to the sarcolemma and the basal lamina of the endomysial tube."

Drs. Nolt and Kipe-Nolt are co-principal investigators on a \$30,000 research grant from the PA Department of Environmental Protection. The grant is entitled "The evaluation of methane production from anaerobic digestion of cheese whey." Beginning in June, they will collect methane samples from a digester that has recently been installed at Sun-Re Cheese Corporation in Sunbury, PA. Methane production and odor intensity will be monitored on a bi-monthly basis. Is your nose available? The results will be shared during a series of public field days in late summer and early fall.

News from BAHS Organizations

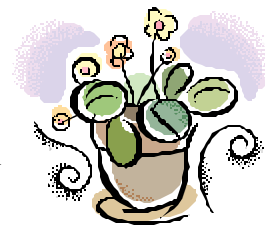
Tri-Beta



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. Members of Tri-Beta met recently to discuss upcoming events and to receive their membership materials. Thanks to those Tri-Beta members who participated in the Science and Technology Symposium, an event that brings prospective students and their families to campus. Tri-Beta members are invited to the Annual Honors Banquet hosted by the College of Science and Technology on March 22, 2008. Members are asked to RSVP directly to the Dean's Office. The annual Tri-Beta convention is March 24 at Elizabethtown College. The event will feature undergraduate research presentations and provides an opportunity to meet with Tri-Beta members from throughout the region. If you would like to attend, please see Dr. Surmacz. The next Tri-Beta meeting will be after spring break to discuss upcoming activities and to hold officer elections for 2007/2008. Current Tri-Beta officers are: President, **Laura Halon**; Vice-President, **Trinity Stempko**; Secretary/Historian, **Jessica Teders**; and Treasurer, **Chris Kashi**.

BAHS Club

The Biology Club is having a busy semester! The group recently conducted a fundraiser in the halls of Hartline—we hope you purchased a carnation for your special Valentine! Research has been the focus of several recent club meetings. Several undergraduates shared summaries of their research projects. **Dr. Allar**, a recent guest speaker, discussed his research in the area of muscle anatomy and physiology. The BAHS club is planning a trip to the Marine Sciences Consortium at Wallops Island, VA, a plant sale in March to coincide with Earth Day, and a picnic at semester's end. Be sure to check out the club bulletin board on the green floor directly across from the restrooms. The club is led by 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**.



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 17th Annual Sigma Xi Student Research Symposium will be held on Friday, April 20, 2007 at St. Joseph's University, Philadelphia. Abstracts are due March 23. The keynote speaker is Dr. George Coyne, Director Emeritus of the Vatican Observatory. His talk is entitled "The Age of the Universe." For more information, see <http://www.sju.edu/srs>

The Pennsylvania Academy of Science meeting is scheduled for March 30 - April 1 near Pittsburgh, PA. Several BAHS students and faculty are planning to present research talks and posters. Look for details in future issues of *BioSynthesis*.

Edinboro University is hosting this year's annual meeting of the Commonwealth of Pennsylvania University Biologists (CPUB) on April 13—15. The featured speaker is Dr. Carol Stepien, Director of the University of Toledo's Lake Erie Center. Abstracts are due March 23, 2007. For more information, contact your research mentor.



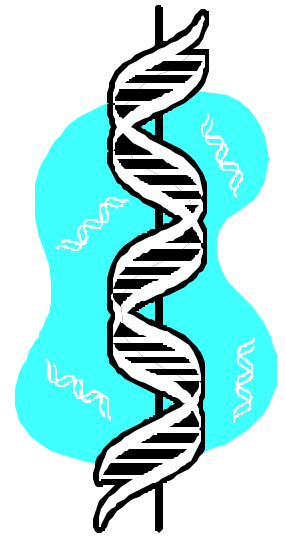
Allied Health Updates

Important Notice for Medical Imaging and Clinical Lab Science Majors

Medical Imaging and Clinical Lab Science students who have applied to clinical programs this year should see Dr. Kipe -Nolt (269 HSC) in the next few weeks. If you have been accepted and made a decision regarding 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.

Health Sciences Symposium to Focus on Biotechnology and Ethics

The 16th Annual Health Sciences Symposium is slated for April 12 and 13, 2007 at Kehr Union. The symposium is an opportunity for the campus and community to explore contemporary health issues in a multidisciplinary setting. The keynote speaker is Dr. F. Daniel Davis, Executive Director of the President's Council on Bioethics, a federal advisory commission based in Washington, D.C. In this capacity, Dr. Davis is responsible for the management of the administrative and research staff. Dr. Davis earned a Ph.D. in philosophy from Georgetown University with a specialty in medical ethics. He co-directs Georgetown's Center for Clinical Bioethics. At Georgetown University Hospital, he is a member of the Ethics Committee, co-chair of a taskforce on End of Life Care, and a senior ethicist on the Ethics Consultation Service. Dr. Davis's interests include clinical reasoning, decision making, theory and methods in clinical ethics, end of life care, the moral development of health professionals, and educational reform in medicine. Dr. Davis will present the keynote address, "Biotechnology, Bioresearch, and Bioethics: Their Significance for our Shared Humanity" on Thursday, April 12, 2007, 7:00 p.m. in Kehr Ballroom. On Friday, April 13, 2006 at 8:30 a.m. in Kehr Ballroom, he will lead a workshop entitled "On the Moral Development of Healing Professionals." In addition to the featured speaker, the symposium will feature posters and presentations by graduate students, undergraduates, and faculty. Awards will be given for outstanding undergraduate student posters. The symposium will also feature a Wellness Fair, including over 50 exhibits, demonstrations, and booths on a variety of health and wellness topics. This is always a big hit! The symposium is sponsored by the School of Health Sciences, the Central Susquehanna Community Foundation, the Provost's Lecture Series, and the University Health Center. We hope to see you there.



Allied Health Students Gain Experience

Michael Edwards and **Matthew Getz** are medical imaging interns at Geisinger Medical Center (GMC, Danville, PA). They are each mentored by Dr. Hranitz and are being supervised by Mr. Kenneth Roszel in the Radiology Department at GMC. **Lorriane Joseph** is enrolled as a medical imaging intern in MRI at Bloomsburg Hospital. Dr. Kipe-Nolt is her mentor. Interns have the opportunity to observe different medical imaging modalities and to understand the role of the medical imager in the healthcare team. Applications for summer internships will become available after spring break.

William Young is busy this semester interning with Phoenix Rehabilitation and Health Services Inc. Bill plans on pursuing physical therapy in graduate school and feels that the internship has proven to be an excellent insight to his career. Dr. Corb is his mentor.

Spring Into Health!

The Health Sciences Learning Community will sponsor a series of programs on health-related topics. All programs are in Columbia Fireside Lounge at 9 p.m. Free refreshments will be served. Everyone is welcome!

March 7: Nursing Department, "SOS. Campus Initiatives for Supporting Our Students with Mental Health Issues."

April 18: Chemistry Department, "The Chemistry of the Food Pyramid."



What are you doing this summer?



BAHS Summer College Offerings

The following courses will be offered by BAHS during summer 2007:

Session I: Human Biology (Dr. Melnychuk); Anatomy & Physiology I (Drs. Surmacz, Allar, & Hranitz); Intro. Microbiology (Dr. Kipe-Nolt), Immunology (Dr. Brubaker), and Human Sexuality (Dr. Wassmer)

Session III: Cells, Genes, and Molecules (Dr. Chamuris); Anatomy & Physiology II (Drs. Wassmer and Allar; Human Sexuality.

Session V: Dendrology (Dr. Chamuris)

Session VI: Ornithology (Dr. Corbin)

Session VII: Ecology & Evolution - for summer freshmen (Dr. Wood)

Summer Sessions 2007

- Session I - May 29 to July 6 (6 weeks)
- Session II - June 18 to July 27 (six weeks)
- Session III - July 9 to Aug. 17 (six weeks)
- Session IV - May 29 to June 15 (three weeks)
- Session V - June 18 to July 6 (three weeks)
- Session VI - July 9 to July 27 (three weeks)
- Session VII - June 18 to July 27 (six weeks)

Summer Chemistry and Physics Offerings

The Chemistry Department at Bloomsburg University plans to offer the following courses this summer: Intro. Chem (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 III.

Check out the Biology Elective Offerings this Summer!

A great opportunity to catch up or get ahead



DENDROLOGY (50-200-51), 3 credits

Dr. Chamuris, Session 5, June 18 – July 6, Monday - Thursday, 9 a.m. to 2 p.m.

In this course we will learn how to identify eastern trees, shrubs, and woody vines and ground covers using summer and winter characteristics. We will also study biogeography, tree anatomy, physiology and ecology, and selected aspects of tree diseases and insect pests. Be prepared to be outside much of the time - we will venture out to a number of sites.. You should be in good physical condition and have good footwear for walking for hours at a time in the woods. You should also have hydration gear (e.g. canteen or hiker's water bottle), insect repellent, and a cap.



IMMUNOLOGY (50.343-11), 3 credits

Dr. Brubaker, Session I: May 29 to July 6 (6 weeks)

Prerequisites: Cell Biology (50.271) & background in biochemistry, genetics, or medical microbiology are recommended.

Immunology is the study of how the body responds to infection by bacteria, viruses, and other foreign materials. This class will focus on the mechanisms involved in the immune response. We will address aspects of cell-mediated immunity in health and disease.



ORNITHOLOGY (50-459-61, undergraduate); (50-559-61,graduate)

Dr. Corbin, Session 6, July 9 – July 27

This course will concentrate on the biology of Eastern North American birds. The daily schedule will include a short lecture and laboratory, followed by trips to the field. Lectures will include subject matter on adaptation, flight, evolution, ecology, and biogeography. The field component will concentrate on the identification of species and research techniques. A multi-day trip to coastal habitats is planned. Ornithology students should plan on working outside for long hours and in a variety of weather and habitat situations.

Summer Internship Opportunity: Bald Eagle/Wildlife Interpretation Internship

Would you like to earn college credit this summer while working with bald eagles, learning about the natural history, and sharing your knowledge with the public? Then this internship is right for you! BAHS, in association with the PA Raptor & Wildlife Association and Knoebel's Grove Amusement Resort, are sponsoring internships in Bald Eagle Wildlife Interpretation. Interns will field questions about bald eagle natural history and give frequent presentations to the general public at Knoebel's Grove near Elysburg, PA. Junior class status and a strong work ethic are required. To learn more about this opportunity, please see Dr. Corbin, 173 HSC, phone (570) 389-4134, or ccorbin@bloomu.edu



The SICB Meeting: Reflections by Dr. Hranitz



By 7:15 am Joel (at left) and Laura (center), already awake nearly three hours, were wondering how this could be? It was after all, January 2nd and the midpoint of their winter break, shouldn't they be slumbering like hibernating bears? At 6 a.m. the next day, Danielle (at right) sleepily boarded her plane pondering the same question. By about 1:00 pm on January 3rd, however, we had quickly covered the distance between Phoenix and Sedona and decided to burn some calories by hiking Bell Rock trail. With shouts of "follow the rock piles, Joel" and "go down backwards," we crawled up and down Bell Rock with the agility of a whole sack of Mr. Potato-Heads. Of course, it wouldn't have been Arizona without Laura having a minor confrontation with a cactus—"priceless."

Oral and poster presentations covered a wide variety of interesting topics; there was something for everyone. In the symposium "Linking Genes and Morphology" researchers showed that different genes control the growth (width and length) of bird beaks, hinting that natural selection on gene expression may explain beak diversity in birds. Reminiscent of the mad Dr. Moreau, researchers even transferred the bill of a duck embryo to a quail embryo (and vice-versa) to produce "quack" and "dail" hatchlings. Have you ever noticed that some individuals are more wary than others? If so, you might have enjoyed learning that cortisol (a stress hormone) levels influence lizard wariness (increased cortisol increases flight distance and duration of hiding from a predator). Our group also presented research conducted at BU (see authors and titles on page 1. Danielle, Joel, and Laura presented their posters in the first poster session, discussing research with graduate students and faculty from around the U.S. Afterward, we relaxed and enjoyed a meal in the Hyatt's Compass Restaurant—named for the restaurant's 360° view of the city as it rotates atop the Hyatt Hotel. Dr. Wassmer also presented a poster on periodicity in woodroaches and Dr. Corbin attended in spirit as co-author on a presentation by a colleague.

The end of the meeting was signaled by the arrival of Ohio State University and University of Florida band members and fans for the Bowl Championship Series game. Since we lived almost entirely on Mexican food at dinner and lunches at Steve's Grille, the best lunch spot around, it was no surprise that we once more stuffed ourselves with burritos, tacos, chimichangas, and chile rellenos at our last meal in Phoenix. What was rather astonishing however, was to see three students, who just an hour earlier claimed to be in pain from all they ate, enjoying huge bowls of ice cream complete with toppings at the dessert social. Perhaps it's true, we all scream for ice cream!

Summer Opportunity

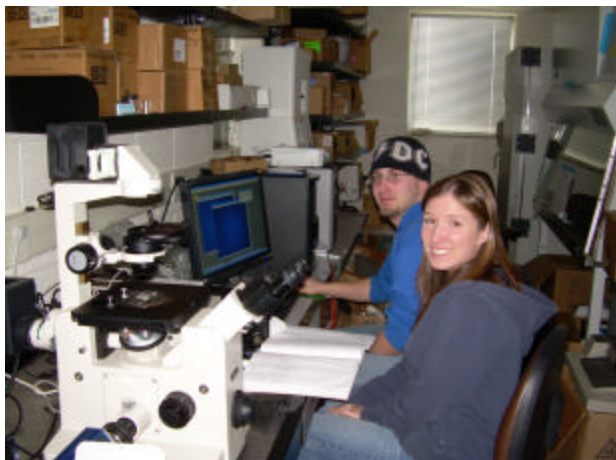
The Department of Biology at Indiana University of PA is offering a 2– 3 week summer course in South Africa in July 2007. The course includes field trips, lectures, and guided tours that focus on the history, people, ecology, and wildlife of the region. The group will visit Cape Town, the Cape of Good Hope, the Whale Coast, wildlife sanctuaries in KwaZulu-Natal, and Marula Safari Lodge near the border with Botswana and Zimbabwe. The trip will end with several days of game viewing in Kruger Park, one of the world's top national parks. For more information contact Dr. Carl Luciano at luciano@iup.edu (724-357-2352) or check out the web site at: (<http://nsm1.nsm.iup.edu/luciano/africa.htm>).



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 with your final plans for inclusion in the next issue of *BioSynthesis* (csurmacz@bloomu.edu). Thanks!

Meet BAHS Student Researchers



Valerie Letukas (photo at left) is currently working in Dr. Rier's lab examining the effects of acid mine drainage on microbial enzyme activities, water chemistry, algal biomass, and bacterial biomass

Jon Molinari is continuing a project he began in fall 2006 with Dr. Davis. Last semester he isolated and sequenced some clones that appear to be the iron transporter gene from oats. This semester he is hoping to get the full-length clone. **Josh Montgomery** is working on a similar project with the Foxtail grass (*Setaria*) and **Shirshendu Saha** is trying to do the same with Bent Grass (*Agrostis*).

Braden Ott is continuing his research project 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.

Trinity Stempko is enrolled in Methods in Biotechnology. The title of her research proposal is "Investigation of nucleotide diversity at the cytochrome oxidase subunit I (COI) locus in *Lepas* barnacles from the tropical Pacific Ocean." Her research goals are to amplify the COI locus and determine patterns of gene flow in these pelagic barnacles.

Katherine Huff a nursing major, is conducting Honors Independent Study research entitled "The potential for *Staphylococcus aureus* transmission by nursing students: Evaluation of nasal carriage and watchband contamination." Dr. Kipe-Nolt is her mentor.

Mike Dzwonek is enrolled in Research in Biology I with Dr. Rier this semester and is examining the effects of seasonal trout stocking on the overall food web structure of Fishing Creek. Mike is hypothesizing that the introduction of excessive numbers of top predators (i.e., trout) will exert a top down influence on the stream food web with effects observed down to the invertebrates and algae. He is currently setting-up trout enclosures in Fishing Creek so he can compare areas of habitat exposed and not exposed to stocked trout. Mike is shown in the photo at right inspecting algal growth on rocks in Fishing Creek.

Ashley Yelinek measured physiological changes, maximum loads, and performance parameters of members of the BU swim team while using training stretch cords. Ashley has completed her data collection and analysis and plans to present her work at the upcoming Pennsylvania Academy of Sciences meeting near Pittsburgh. Ashley is conducting this work as part of her requirements for Honors Independent Study in Biology II under the guidance of Dr. Surmacz. This research is in collaboration with Drs. Rawson and Mookerjee of the Department of Exercise Science.

Sayo Adeyemo is currently working with Dr. Kipe-Nolt where she is comparing the survival of coliform and coliphage in dairy manure exposed to different treatments.



Cory Lavoie is doing a research project with Dr. Rier that compares microbial enzyme activities in small headwater streams covered with a forest canopy to those in larger open-canopied streams. It has been demonstrated in the past that the food webs of small headwater streams are primarily fueled by carbon from terrestrial sources such as leaf litter. In contrast, the food webs of larger streams are primarily fueled by algal photosynthesis. Cory is testing the hypothesis that these differences will be reflected in the extracellular enzymes produced by microorganisms in the streams.

Cory (left) measures water chemistry in Huntington Creek.

More Student Researchers...



From left, **Dr. Allar**, **Kenny Thomas**, and **Travis Castleberry** are reviewing research articles in 67 Hartline. Kenny and Travis are enrolled in Research in Biology I this semester. Under the direction of Dr. Allar, they are gaining the unique experiencing of being on the ground floor of a new research program. The group has been preparing the research lab and planning experiments. Upcoming projects will examine the structural and functional connections of muscle satellite cells to the sarcolemma and the basal lamina of the endomysial tube.

Jared Geissinger is conducting toxicology research with Dr. Surmacz as a volunteer this semester. He is comparing the effects of new road de-icers on the physiological responses of the aquatic blackworm, *Lumbriculus variegatus*.

Amy Savitsky is enrolled in Research in Biology I. Dr. Hranitz is her mentor. The title of her research project is "Isolation and characterization of 70 and 90 kD stress proteins in *Megachile fidelis*." Her research objective is to clone and sequence 70 and 90 kD stress proteins in *Megachile fidelis* for comparison with three other species of bee. She will help determine whether or not stress protein amino acid and nucleotide sequences are adapted for function at different temperatures.

Several students are working with Drs. Hranitz and Brubaker on a project involving heat shock proteins in the thermotolerant bee, *Megachile apicalis*. **Cathy Stone** is working on cloning HSP70 and HSP90 from several different larvae with Amy Savitsky to verify the clone. **Nick Bixler** is currently outlining how RACE experiments will be conducted to clone the remaining fork-head genes. **Laura Halon** is working on the Daf-16 Northern blotting to determine if Daf-16 is up-regulated after heat shock.

Danielle Wartko is enrolled in Methods in Biotechnology. Dr. Hranitz is her mentor. The title of her research proposal is "Microsatellite DNA genotyping; testing for microsatellite evidence that territoriality leads to high reproductive success in male collared lizards, *Crotaphytus collaris*." Her research continues previous work that she completed with **Joel Gyimesi** to genotype lizards at a total of 11 microsatellite loci for parentage analysis. She is testing the hypothesis from field observations that territorial male lizards sire the most offspring in the population or, alternatively, that subordinate (some might say sneaky) nonterritorial male behaviors lead to similar reproductive success to territorial males.

Graduate student **Andy Troutman** is studying Runx2 gene expression in prostate cancer cell lines. This gene plays an important role in the spread of prostate cancer to bone tissue. He is also cloning and sequencing DNA for forkhead proteins that regulate stress responses in animals. Dr. Brubaker is Andy's thesis advisor. **Kyle Bartol** will be working with Andy on the forkhead cloning project.

Zac Wert received a Kozloff research award to quantify variation in habitat and foraging behavior among the region's woodpecker community. Dr. Corbin is Zac's mentor.

BAHS Students Win Essay Competition in Anthropology

Two BAHS students were winners in an international competition sponsored by the Center for a Public Anthropology at Hawaii Pacific University. The competition was part of the Yanomami Community Action Website Project and involved writing a letter to the director of a major research funding agency on anthropological ethics and fieldwork responsibility. The essays were competitively selected through a peer-reviewed process. **Maria Johns** (left), a senior biology major, was first in the competition from over 1700 entries from 10 different colleges. Ranking third was **Georgia Palmeter** (right), a medical imaging major. Both students were enrolled in Dr. Faith



THE BU MASTERS PROGRAMS

The Department of Biological and Allied Health Sciences offers a Masters of Science degree (M.S.), a Master of Education (M.Ed.) in Biology, and a Masters in Radiologist Assistant. 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 Updates

We welcome new graduate student **Chelsea Barnes**. Chelsea hails from western PA and received her undergraduate degree from California University of PA. Chelsea plans to conduct research with Dr. Hranitz on toads at Assateague Island, VA. Congratulations to **Andrew Troutman**, **Bernard Svab**, and **Laura Bauman**, who successfully passed their candidacy exams and are ready to begin their thesis research. This semester's lab assistants are **Chelsea Barnes** (Concepts in Biology); **Laura Bauman** (IPL and Cell Biology); **Andrew Troutman** (Anatomy and Physiology); and **Kendra Soblesky** (IPL and Cell Biology). **Jennifer Biddinger** is student teaching this semester in Selinsgrove Area School District.

RA Students On Campus



The first class of students in our new masters degree program in Radiologist Assistant (RA) began their studies fall semester by taking on-line courses. The group, now on campus for spring and summer, includes from left **Henry ("Hank") Batitste, Jr.**, **Jacqueline ("Lyn") Ritz**, **Brianna Wilkins**, and **Christine Hollenbeck**, shown with program director **Mrs. Christine Mehlbaum**. This summer the students will take courses in Radiologic Procedures, Imaging Evaluation II, and Methods in Research. The program has recently received new equipment such as an ultrasound, CT workstation, patient assessment tools, and data scopes. 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. 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. The program is currently accepting applications for next year. 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.

Practice, Practice, Practice!

Is graduate or professional school in your future? Many of these programs require a standardized test for admission called the Graduate Record Exam (GRE). The Psychology Association is sponsoring a Practice GRE proctored by a BU faculty member on Saturday, March 31 in CEH 218 at 8:30 a.m. Cost is \$10. Register in the Psychology Student Lounge on the 2nd floor of McCormick on March 19th—22nd from 12:30 to 2:30 p.m. All scores are kept confidential.