



BioSynthesis

Volume 8, Issue 2 (April 2009)

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

Spring & Summer Dates

APR 24: COST Research Day

APR 27 & 29: Coffee and Do-nuts, 178 HSC

APR 27 - MAY 2: Final Exams

MAY 1: Graduate Commencement, 6:00 p.m., Haas

MAY 2: Undergraduate Commencement, COST 10 a.m., Academic Quad. Rain Location: Nelson Field House

MAY 18 - JUNE 26: Summer College, Session I

JUNE 30—AUGUST 7: Summer College, Session II

AUG 31: Fall Semester Classes Begin



Look what's inside:

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Thanks for a Great Semester!

The 2008-2009 academic year seemed especially busy and productive. This year marked the kick-off of ABLE, the Academic Biology Learning Environment, in the Science and Health Science Living Learning Community where nearly a 1000 students signed in to use resources, attend tutoring or review sessions, visit with faculty, and study together. A new and well-attended seminar series was launched featuring presentations by visiting scientists on diverse topics. The research labs were a bevy of activity. Many students took their results on the road! BAHS faculty and student research was well-represented at meetings of the PA Academy of Science, the Commonwealth of PA University Biologists, Tri-Beta Biology Honor Society, and COST Research DAY. The department's organizations were very busy. Activities ranged from a celebration of Darwin Day by Tri-Beta, a trip to the Mutter Museum and a river clean-up spearheaded by the BAHS Club, and talks by guest speakers hosted by the Pre-Medical Sciences Club. The Pre-professional committee introduced a successful series of workshops under the umbrella "Pre-Med March Madness." Over 20 students learned about the application process for medical and professional schools and honed their resumes and personal statements. As we approach the end of the semester, preparations are in progress for the renovation of the east wing of Hartline. Much needed improvements to our home building will be underway next year. Thanks to all of you for making this an enjoyable and dynamic place to teach and learn. For those of you who are graduating, we wish you all the best. Stay in touch!





Salute to Graduating Seniors

Congratulations to Biology and Allied Health students who will graduate in spring or summer 2009. Stay in touch! Remember to check out BioSynthesis on line at <https://departments.bloomu.edu/biology/>
Great job!

Biology, Spring 2009

Andrew Ackerman, B.S. Biology, pre-medical sciences option
Alison Adamski, B.A. Biology
Taylor Anderson, B.S. Biology
Kyle Bartol, B.S. Biology, pre-medical sciences option
Justin Blessing, B.A. Biology, pre-physical therapy
Bridget Bond, B.A. Biology, pre-physician assistant
Eileen Burkett, B.A. Biology
Kelsey Grabert, B.A. Biology
Alexander Hilderbrandt, B.A. Biology, pre-physical therapy
Deborah Hunsberger, B.S. Biology and B.S. Chemistry, biochemistry
Emily Kinkead, B.S. Biology
Christopher Krum, Jr., B.S. Biology
Erin Loughlin, B.S. Biology
Justin Lavo, B.A. Biology, pre-physical therapy
Allison March, B.A. Biology, pre-physical therapy
Johanna Park, B.A. Biology, natural history
John Pavese, B.A. Biology, pre-physician assistant
Diana Pierce, B.S. Biology
Philip Sobolesky, B.S. Biology
Kevin Sommers, B.A. Biology, pre-physical therapy
Britnie Spaunhorst, B.S. Biology, molecular biology
Erica Still, B.A. Biology
Sarah Tuohey, B.A. Biology
Danielle Yoder, B.A. Biology, pre-physical therapy

B.S. Medical Imaging, Spring 2009

Todd Gray
Laura Hurley
Katie Krause
Deborah Turner
Julee Pershing
Dawn Tobias
Rhyan Kleiner
Laura Lorito

Biology, Summer 2009

Christopher Ayala, B.A. Biology
Erica Kocher, B.A. Biology, pre-physician assistant
Lauren Le, B.S. Biology, microbiology
Laura McCourt, B.S. Biology, pre-medical sciences
Christie Miller, B.S. Biology
Patricia Owen, B.S. Biology
Jacqueline Teresky, B.S. Biology
Koryn Turlis, B.A. Biology

B.S. Clinical Lab Science, Summer 2009

Jenna Peters
Catherine Stone
Phillip Zak

B.S. Medical Imaging, Summer 2009

Jessica Boyer
Jason Craig
Brittany Dechert
Jennifer Dersch
Tony Divel
Michael Edwards
Jacqueline Gribbin
Corey Hymovitz
Lorriane Joseph
Lindsay Karl
Ryan Kaub
Ashley Leimbach
Nathaniel Machey
Erica Matheis
Mallory Matzura
Jaclyn Nyce
Georgia Palmeter
Grant Poppenwimer
Rachel Ramer
Peter Rigel
Jeanne Roszel
Jenna Ruppert
Kate Shine
Tracy Stach
Tina Stere
Kevin Wray
Jessica Yeager

Honor Graduates, Spring 2009

COST Honor Graduate: Todd Gray

Summa Cum Laude: Todd Gray

Magna Cum Laude: Patricia Owen, Danielle Yoder

Summa Cum Laude: Andrew Ackerman, Kyle Bartol, Justin Blessing, Kelsey Grabert, Deborah Hunsberger, Laura Hurley, Erica Kocher, Katie Krause.

Honors Program: Kelsey Grabert

Meet our Student Scholarship Winners

First James E. Parsons Scholarship in Clinical Lab Science/ Microbiology Awarded

A new scholarship has been established in honor of emeritus faculty member, Dr. James Parsons. Dr. Parsons taught microbiology courses, Human Sexuality, and served as the Allied Health Sciences Coordinator here at Bloomsburg for many years.

The first recipient of this scholarship is **Debon Berger**, a Clinical Lab Science major from Quakertown, PA. Debon, pictured at right, conducted an internship last summer in the clinical lab at St. Luke's Hospital, and this helped confirm her desire to enter this profession. Debon is the program board chair for the University Honors Program and is responsible for planning and organizing trips, activities, and service projects for honors students. This summer she will participate in the PASSHE Summer Honors Study Abroad Program. She will be in France and Belgium learning history, culture, and European politics. For her Honors Thesis research, Debon is hoping to investigate the prevalence of *Staph aureus* strains on and around campus, under the supervision of Dr. Karl Henry. Debon has been in the BU Community Orchestra, is active in Disciple Makers Christian Fellowship, and helps with child care at the Women's Shelter.

Anyone interested in contributing to Parsons Scholarship Fund please contact Mr. John Karas, Development Office, jkaras@bloomu.edu, 570-389-5144.



BAHS Scholarship Recipients

Michelle Stipanovic and **Jillian Kida** are recipients of scholarships awarded by the Department of Biological and Allied Health Sciences.

Michelle (left) is a sophomore biology major in the pre-medical sciences option. Michelle's goal is to attend optometry school. She has been named to the Dean's List each semester and received a Phi Kappa Phi Outstanding Freshman award. She served as a biology tutor last semester in the Science and Health Science Living Learning Community. Michelle is an active participant in a diverse group of campus activities. She is a member of the BAHS club and will serve as its vice-president next year. She is also a member of the pre-medical science club, the BU Dance Ensemble, and the campus group, Developing Ambitious Student Leaders. Her commitment to helping others is shown by her participation in the Breast Cancer Walk/Run and service at the Ronald McDonald House



Jillian, shown at right, is a sophomore Medical Imaging major and has her sights set on a clinical experience in sonography at Johns Hopkins Hospital. Jillian has been named to the dean's list each semester and received a Phi Kappa Phi Outstanding Freshman Award. Jillian is a member of BU's Honors Program and has begun research in the laboratory of Dr. Angela Hess where she is investigating the role of EphA2 in regulating proliferation in poorly aggressive melanoma cells. Jillian has been involved in a number of community service activities as part of the Honors program including Food Recovery, Tree-Fest, The Canned Food Drive, and the Blood Drive. Congratulations Michelle and Jillian!

James Cole Scholarship in Medical Imaging Granted

Jillian Kida is the recipient of the \$450 James Cole Scholarship in Medical Imaging. Dr. Cole is a retired professor who taught the freshmen biology course for majors for many years, served the department as chairperson and allied health coordinator, and was instrumental in developing allied health programs at Bloomsburg University. Jillian is a sophomore medical imaging major from Boyertown, PA. Her achievements are described above. We congratulate Jillian on receiving this award.

BAHS Students Named to Who's Who Among College Students

Several BAHS students were recognized this academic year by their selection to Who's Who Among College Students. Criteria for selection include: academic achievement, personal characteristics, leadership, service and professional promise. Congratulations to **Taylor Anderson, Emily Barkanic, Kyle Bartol, Allison Kunkelman, Arifah Uqdah, Danielle Yoder, Justin Dion, and Maggie Yesalavage.**

BAHS Outstanding Biology Students

Deborah Hunsberger and Danielle Yoder were selected as outstanding senior biology students.

Debbie is a double major in Biology and Chemistry, Biochemistry option and will graduate Cum Laude in May 2009. Deb has also received the Phi Lambda Upsilon award as an outstanding senior in Chemistry. She was named to Who's Who Among College Students. Debbie is a member of Tri-Beta Biology Honor Society and will be inducted into the Honor Society of Phi Kappa Phi. She has served as president of both the Biology and Allied Health Club and the Chemistry Club. She is an active member of Quest and has served as an instructor for water and hiking courses. Last summer, Debbie conducted an internship in South Africa as part of Operation Wallacea where she assisted with biodiversity and conservation management projects. Her trip was supported by a Bloomsburg University Internship Scholarship. She is currently the featured student on the BU Internship web page. She has conducted research with Dr. Hallen, Department of Chemistry, in the area of aqueous geochemistry and has presented work on Acid Mine Drainage at the recent Northeast Geological Society of America Conference in Portland, ME. Debbie plans to attend graduate school in the future to pursue her interests in conservation biology, chemical ecology and freshwater biology.



Danielle is a Biology major, pre-physical therapy option and will graduate Magna Cum Laude in May 2009. Danielle is a Dean's List student who was named to Who's Who Among College Students. Danielle is a member of the Honor Society of Phi Kappa Phi and received this organization's Outstanding Freshman Award. Danielle serves as the secretary of Tri-Beta, the biology honor society. Danielle received scholarships provided by the College of Science and Technology, the Department of Biological and Allied Health Sciences, and the Order of the Eastern Star. Scholarship. Danielle has conducted research on the parental analysis and Reproductive Success of collared lizards in the laboratory of Dr. John Hranitz. She will present her research results at the upcoming COST Research Symposium. Danielle is actively involved in community activities. She is the president of Colleges Against Cancer and played a leadership role in our campus's Relay for Life event. Danielle conducted an internship in in-patient and out-patient physical therapy at Reading Hospital and Medical Center. She will enter a doctorate in physical therapy program at either Thomas Jefferson University or Widener University.



Outstanding Allied Health Student Named

Jenna Ruppert, a senior medical imaging major, was named outstanding allied health student. Jenna, a dean's list student, will graduate cum laude in summer 2009. She was a member of the Biology and Allied Health Club and played intramural volleyball. Jenna conducted an internship in Vascular Sonography during summer 2007. She is completing her 15-month clinical experience in sonography at Johns Hopkins Hospital in Baltimore, Maryland. She plans to join the ultrasound team at Johns Hopkins Hospital following graduation. Her future plans include graduate school and delivering medical care to children.

BAHS students inducted into Phi Kappa Phi

Phi Kappa Phi is the nation's oldest, largest, and most selective honor society that recognizes and promotes academic achievement in all fields of higher education. Only the top 7.5% of juniors and the top 10% of seniors are eligible to join the society. The following BAHS students will be inducted on April 26 at a ceremony attended by faculty, administrators, and family members: **Andrew Ackerman, Emily Barkanic, Michael Bierds, Justin Blessing, Ryan Dorkoski, Kelsey Grabert, Rashel Hagemeyer, Michael Hollman, Deborah Hunsberger, Kaitlyn Manley, James Noll, Kelly Pidgeon, and Max Tolan.** BAHS students who were inducted previously include **Kyle Bartol, Logan Karas, Essie Reed, Danielle Yoder, Ross Klossing, Joshua Tussing and Andre Pascal.**



Allied Health Updates



IMPORTANT NOTICE FOR MI AND CLS STUDENTS

ALL CLS and MI students who applied for clinical programs this year must see Dr. Kipe-Nolt before the end of the semester if you have not yet done so. This includes those who have been accepted into clinicals and those who have not.

BAHS Students Accepted to Clinical Programs

The following students have signed-up (completed paperwork):

Clinical Lab Science:

Kristin Day – Williamsport Hospital

Josh Capelli – York Hospital

Medical Imaging:

Johns Hopkins Hospital - Jon Mengel, Arifah Uqdah, Rachel Stoehr, Grace Colangeli

Misericordia – Taylor Washburn

Reading Hospital – Matthew Fickinger, Taylor Lisella

Wilkes-Barre General – Jessica Whitenight

Thomas Jefferson - Nicole Zapotosky

University of Pennsylvania – Matthew Sandt

Geisinger Medical Center – Christopher Arbogast, Kyle Concini, Kelli DeSanto, Rose Novinger, Gary Oster, Meghan Rudy, Zachary Silver, Victoria White

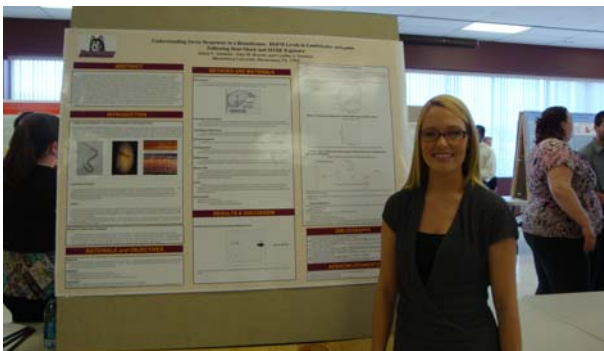
Good luck as you begin this new chapter in your education!

Thanks!

Thanks to all of you made the 18th annual Health Sciences Symposium a huge success. The keynote speaker, Terry Wise, delivered a powerful message about the role we can all play in preventing suicide. The symposium also included student posters and a wellness fair. Many BAHS students participated in the event. Special thanks to the cheerful poster hanging committee (**Michael Busada, Megan Dager, Heidi Huynh, Ghaith Ibrahim, Amanda Kaehler, Laura Laidacker, and Jason Nolt**), the student poster judges (**Taylor Anderson, Megan Kopec, and Essie Reed**), and the amazing clean-up crew from A & P II!

CPUB Annual meeting

Lock Haven University recently hosted the annual meeting of the Commonwealth of PA University Biologists (CPUB). The annual meeting is an opportunity for faculty and students from universities in the PA State System of Higher Education to join for a day of research presentations and workshops. Attending were BAHS students **Allison Adamski**, (photo at left) and at right **Christopher Ort, Aaron Raski, Debra Walter, and Di Zhou**. They were accompanied by **Drs. Williams and Hess**.



The following research projects were presented:

Adamski, A.*, J. M. Hranitz and C. Surmacz. 2009. Understanding stress responses in a bioindicator: HSP70 levels in *Lumbriculus variegatus* following heat shock and MTBE exposure.

Ort, C.M.* and K. Williams. 2009. The Influence of light exposure and wavelength on the ultradian rhythms of *Desmodium gyrans*.

Raski, A.*, C.E. Corbin, G.P. Chamuris, J.M. Hranitz and C.A. Hansen. 2009. A survey of *Borrelia burgdorferi* and *Anaplasma phagocytophilum* infection and co-infection rates in canine populations in Montour and Columbia County, Pennsylvania.

Walter, D.L.* and A.R. Hess. 2009. Signaling pathways and proliferation in both highly and poorly aggressive human melanoma: a role for ephA2.

Zhou, D.*, W.J. Schwindinger, J. D. Robishaw and C.A. Hansen. 2009. The G-protein $\gamma 11$ subunit (GNG11) plays a role in mediating cellular senescence. Bloomsburg University and the Weis Center for Research, Danville, PA.



Life after BU...

Congratulations to all of our graduating seniors and master's students. We are proud of you! Here's what some of our graduating students have planned following graduation. For those of you are who are not certain of your plans, please send an e-mail to Dr. Surmacz in the future so we may share your good news! (csurmacz@bloomu.edu)

Taylor Anderson will attend Lake Erie College of Osteopathic Medicine. Taylor plans a career in dermatology or family medicine and hopes to return to the area to practice.

Kyle Bartol will attend Philadelphia College of Osteopathic Medicine next fall to study in their biomedicine graduate program.

Justin Blessing will travel to the University of Southern California where he will begin physical therapy school.

Bridget Bond will enter the master's program in physician assistant studies at Mercy College in the Bronx, NY.

Jennifer Dersch is currently working part-time as Radiologic Technologist Assistant at The Children's Hospital of Philadelphia. She plans to seek full-time employment in the Philadelphia area.

Laura Hurley is employed full time at Wilkes-Barre General Hospital as a Radiologic Technologist.

Emily Kinkead will travel after graduation before potentially moving to Hawaii to work as a naturalist for the Pacific Whale Foundation. In the future she may work for a political non-profit organization and then attend law school.

Andrea Klacik will enter the combined B.S./M.S. program in occupational therapy at Thomas Jefferson University.

Erica Kocher will spend the summer in Northwest Europe before heading off to Salus University (formerly Pennsylvania College of Optometry) for the physician assistant program.

Allison Kunkelman plans to join the Air Force after graduation to become a physician assistant through the Air Force.

Justin Lavo will attend Thomas Jefferson University's doctoral program in physical therapy.

Allison March will enter the physical therapy assistant program at Penn State Hazleton.

Joseph Margotta will enter the doctoral program at SUNY Binghamton in an interdisciplinary program in molecular biology and biochemistry.

Patricia Owen will stay at BU for the doctor of audiology program. It will be nice to have you in town, Patty!

John Pavese will enter Marywood University's M.S. physician assistant program. He starts May 19!

Julee Pershing will be employed full time as an Ultrasound Technician at Geisinger Medical Center, Danville, PA.

Philip Soboleski will attend the Medical University of South Carolina, where he will begin the Ph.D. program in microbiology and immunology.

Britnie Spaunhorst will enroll at the University of Iowa in the Ph.D. program in immunology.

Jacqueline Teresky will enter the master's degree program in Biotechnology at Penn State University.

Dawn Tobias is enjoying her new job an ultrasound technician for Dr. Whitney Pollock, an OB/GYN, in Pottsville, PA.

Danielle Yoder will enter the doctoral program in physical therapy at either Thomas Jefferson University or Widener University.

Recent graduates:

Jared Geissinger (B.S. Biology, 2008) will enter the doctoral program in microbiology at Virginia Tech University.

Joanna Kraynak (B.S. Biology, 2008) will attend the Philadelphia College of Osteopathic Medicine to become an osteopathic physician.

Michael Root (B.A. Biology, 2008) will enter the doctoral program in physical therapy at Widener University.

Maggie Yesalavage (B.S. Biology, 2008) will attend Lake Erie College of Osteopathic Medicine.



Kozloff Award Winners Announced

Shannon Carper, a pre-physical therapy student, has recently been notified that she has been awarded a Kozloff Undergraduate Research Scholarship. Shannon's project is entitled "The role of ephrin-A1 in mediating melanoma invasion, migration, and proliferation." Her mentor is **Dr. Angela Hess**. Congratulations Shannon!

BAHS at PAS

BAHS was well represented at the 85th annual meeting of the Pennsylvania Academy of Science (PAS) held at Camp Hill, PA on March 28, 2009. PAS is an organization that promotes scientific inquiry in the commonwealth, supports science education efforts, and offers opportunities for students and scientists to present research and grow professionally. The annual meeting provides a forum for students and faculty to give posters and oral presentations on their research and to network with scientists throughout Pennsylvania. Attending this year's meeting were undergraduate students **Jeremy Vilcheck** and **Anna Simpson**, graduate students **Aaron Raski**, **Debra Walter**, and **Di Zhou**, and professors **Corbin**, **Hansen**, **Hess**, **Hranitz**, and **Surmacz**. The BAHS presenters, their collaborators, and the titles of their presentations are listed below.

Presentations at Pennsylvania Academy of Science Meeting:

Hranitz, John M.*¹, Amy N. Savitski¹, John F. Barthell², Meredith L. Clement², Daniel S. Song³, Theodora Petanidou³. Genetic Variation is Higher in An Invasive Population Than In A Native Population of the Centaurea Leafcutting Bee (*Megachile apicalis*). (¹Bloomsburg Univ. of Pennsylvania; ²Univ. of Central Oklahoma, Edmond; ³Univ. of Aegean).

Raski, Aaron*, Clay Corbin, George Chamuris and Carl A. Hansen. Infection and Co-Infection Rates of *Borrelia burgdorferi* and *Anaplasma phagocytophilum* in Tick and Canine Population in Montour and Columbia County, Pennsylvania. (Bloomsburg University).

Simpson, Anna E.* and Clay E. Corbin. Effects Of Phylogeny on the Bill Ecomorphology in Hawks (Accipitridae). (Bloomsburg University).

Vilcheck, Jeremy*, John Hranitz, and Cynthia Surmacz. Cellular Stress Responses in the Bioindicator *Lumbriculus variegatus*: Experiments Using Heat Shock Protein 70 Concentrations to Measure Stress. (Bloomsburg University).

Walter, Debra L.*, Angela R. Hess. Signaling Pathways and Proliferation in Both Highly and Poorly Aggressive Human Melanoma. (Bloomsburg University).

Zhou, Di,* and John M. Hranitz. Small Effective Population Size Estimates and Implications for a Population of Collared Lizards. (Bloomsburg University).

Zhou, Di¹*, William F. Schwindinger², Janet D. Robishaw² and Carl A. Hansen¹. Is There an Interaction Between Gng11 and Replicative Senescence in Mouse Embryo Fibroblasts? (¹Bloomsburg University and ²Weis Center for Research).

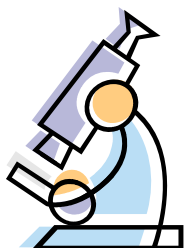


Above from left: **Aaron Raski**, **Debra Walter**, **Di Zhou**, **Jeremy Vilcheck**. Below: **Anna Simpson**.



BAHS Scholar Athletes Recognized

Seven BAHS students were among those honored at the Scholar-Athlete Luncheon at the end of February for their excellence on the court, on the field, in the pool, on the track, and in the classroom. Congratulations to **Michael Bierds**, a biology major and a member of the swim team; **Anthony Forman**, pre-occupational therapy student and baseball team member; **Giselle Lara**, a pre-medicine and anthropology major and basketball team member; **Jason Nolt**, a biology major in the pre-medicine option and member of the tennis team; **Julia Rush**, a pre-physical therapy major and member of the field hockey team, **Britnie Spaunhorst**, a biology major in the molecular biology option and member of the swim team, and **Susan Wade**, a medical imaging major and member of both the track and soccer teams. Congratulations to all our scholar-athletes.



Student Research Grants Available

The Commonwealth of Pennsylvania Biologists (CPUB) is awarding grants of up to \$400 to undergraduate and graduate students to fund equipment and supplies for research. To apply, students must submit a cover letter, a detailed proposal, a resume, and a supporting letter from the faculty research mentor. Proposals must be written by the student and must include an introduction, materials and methods, references, and a budget. The deadline is September 9, 2009. Application materials are available on the CPUB website <http://academics.sru.edu/cpub/>



Pre-professional Committee News

Pre-Med Students Catch March Madness!



Pre-medical science students headed over to the Science and Health Science Living Learning Community in Columbia Hall for three Mondays in March to attend workshops sponsored by the pre-professional committee. Between 20 and 40 students attended sessions on the application process, resume writing, and preparing a personal statement. Among the presenters were seniors **Taylor Anderson** (BAHS) and **Allison Hirsch** (Chemistry) who shared their first-hand experiences with the application process. Hard at work in the photo below are **Christine Wason**, **James Kearns**, **John Redinski**, and **Megan Kopec**.

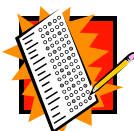


Congratulations!

The pre-professional committee sends its heartiest congratulations to students who successfully gained admission to professional schools in medical fields. You did it! Congratulations to **Taylor Anderson** and **Maggie Yesalavage** who will attend Lake Erie College of Osteopathic Medicine and **Joanna Kraynak** and **Kyle Bartol** who will attend Philadelphia College of Osteopathic Medicine. Details are on page 6.

Pre-Medical Science Club Updates

The Pre-Medical Sciences Club kept busy this semester. In addition to attending March Madness, the group sold bears and treats for a Valentine's Day fundraiser. The Pre-Medical Sciences Club recently hosted a visit by Stephen E. Schell, M.D., F.A.C.S., a BU alumnus. Dr. Schell discussed his career in medicine and answered questions from the club. Following his graduation from BU, Dr. Schell attended Temple University School of Medicine. He performed his surgical internship at Allentown Sacred Heart Medical Center and his residency in otolaryngology at SUNY Upstate in Syracuse. Dr. Schell is board certified in otolaryngology and facial and reconstructive surgery. The Pre-Medical Sciences Club recently met to elect officers for next academic year. Leading the way are President, **Essie Reed**; Vice President, **Samantha Bussanich**; Secretary, **Megan Kopec**; Treasurer, **John Redinski**; and Public Relations, **Melanie Yodock**.



Summer MCAT

The MCAT is a standardized exam required for admission to allopathic, osteopathic, and many veterinary schools. The exam assesses mastery in biology, general and organic chemistry, physics, scientific problem solving, critical thinking, and writing skills. Summer MCAT exams are offered May 1, 2, 22, 28; June 18; July 2, 17, 30, 31; August 5, 6, 14, 21, and 25. To register go to: <http://www.aamc.org/students/mcat/start.htm>

Summer Vacation Ideas

The committee wishes all pre-professional students a rewarding, relaxing, and rejuvenating summer. Remember summer is a great time to job-shadow. Many students also choose to do their volunteer work during the summer. Rising juniors are reminded to submit their completed application packets to the committee by midsummer for an early fall letter or late summer for last minute applicants.



Updates:

Dr. John Hranitz is a member of an international team that received a National Science Foundation grant to support Research Experiences for Undergraduates focusing on the behavior and ecology of honey bees and leafcutting bees. The team consists of Dr. John Barthell (PI, Univ. Central Oklahoma), Dr. Charles Abramson (Co-PI, Oklahoma State Univ.), Dr. Harrington Wells (Sr. Personnel, Univ. of Tulsa), Dr. Ibrahim Cakmak (Sr. Personnel, Uludag Univ. TURKEY), Dr. John Hranitz (Sr. Personnel, Bloomsburg Univ.), and Dr. Theodora Petanidou (Sr. Personnel, Univ. of the Aegean GREECE).

Dr. Gary Wassmer was recently selected as a Fulbright scholar to teach and conduct research in Africa. He will spend the fall semester at Mbarara University in Uganda. Dr. Wassmer will be teaching entomology and research methods to undergraduate and graduate students. As well as working in the classroom, he and his students will evaluate the use and effectiveness of “green methods” of pest control on local farms. If you are going to be in Uganda next fall, he asks that you please stop in and say hello.

Summer Happenings

Summer Jobs Available! Dr. Davis will have 1-2 research positions in his lab for 8-10 weeks during the summer (20 hrs/wk). The position requires skill in basic molecular biology laboratory techniques including PCR, plasmid isolation, and RNA isolation. The focus of the research is on manipulating the iron uptake system in oats. If you are interested in this life changing opportunity, please contact Dr. Davis in HSC 272, ph. 389-4120, or email at gdavis@bloomu.edu.

Shannon Carper will continue to conduct research this semester in the laboratory of **Dr. Angela Hess**. This summer Shannon will investigate how re-expression of the EphA2 ligand, ephrin-A1, affects the proliferation and clonogenicity properties of the highly aggressive human cutaneous melanoma cell line, C8161.

Sumeet Sandhu will begin her thesis research this summer in the laboratory of **Dr. Angela Hess**. Sumi will investigate the signal transduction mechanisms utilized by EphA2 to promote increased migration and invasion in highly aggressive melanoma cells. Sumi will begin by investigating the roles of the Rac and Rho GTPases as downstream effectors of EphA2 signaling.

Michael Busada, John Redinski, and Megan Kopec will work as research volunteers in **Dr. Brubaker's** lab this summer. Their goal is to develop a purification scheme for isolating HSP70.

Nate Gainer will be working as a summer intern for the National Park Service at Indian Dunes National Lakeshore. He will be conducting surveys of invasive plants.

Emily Barkanic will serve as a summer intern for BU's newly formed Institute for Environmental Analysis. She will be helping **Drs. Rier, Venn, and Hallen** conduct water quality and biological assessments of the Susquehanna River.

Research updates from Dr. Henry's Lab

Jared May is investigating the potential of histone acetyltransferase inhibitors (HATi) and histone deacetylase inhibitors (HDACi) as therapeutic agents in the treatment of infections due to the opportunistic fungal pathogen *Candida glabrata*. Because of the intrinsic resistance shown by *C. glabrata* against fluconazole, the antifungal agent most commonly used for systemic infections, treatment failures are common. Our lab has recently found that histone modifications play a role in the regulation of genes that are involved in multidrug resistance (MDR). Inhibition of HAT and HDACs may therefore aid in preventing the development of resistance by limiting MDR gene expression and lead to novel therapeutics for the treatment of *C. glabrata* and other drug resistant fungal infections. Jared has recently been invited to present his findings at the American Society of Microbiology General Meeting in May, 2009 (Abstract title: *Fluconazole antagonism in Candida glabrata due to the histone acetyltransferase inhibitor garcinol*).

Laura McCourt is testing the substrate specificity of the *Candida glabrata* Pdh1 cellular efflux protein with the aid of mutant strains that were generated in the fall of 2008. Pdh1 has been implicated in multidrug resistance and has been found to be overexpressed in clinical isolates that demonstrate resistance to fluconazole, the most commonly used antifungal used to treat systemic infections. Using deletion strains in which the genes that encode for multidrug resistance (MDR) efflux proteins have been deleted, she will screen a variety of known cellular inhibitors to determine if the loss of Pdh1 alters the susceptibility of a given strain. A better understanding of the range of compounds that can serve as substrates for MDR pumps may reveal a finite number of chemical moieties or functional groups that can be recognized by these pumps and lead to their elimination from the cell. In the future, this information can be used for the identification or development of novel antifungals that are not subject to efflux-mediated resistance mechanisms.

Diana Pierce is investigating the genetics involved in the dimorphic capacity of the opportunistic fungal pathogen *Candida albicans*. *C. albicans* is known to transition between an oval yeast form and an elongated filamentous form and this ability is essential for pathogenesis. Diana will examine the ability of a variety of *C. albicans* strains that lack genes involved in intracellular signaling and transcriptional regulation for their dimorphic capability. She will also examine chemical inhibitors of intracellular signaling to define the regulatory pathways that are involved in this phenomenon.

Check out BAHS Student Research at COST Research Day!
Friday, April 24, 2009 79 Hartline Science Center

Time

Student	Research Title	TIME
Britnie Spaunhorst Dr. George Davis Dr. Karl Henry	Espression of an Oat (<i>Avena sativa</i>) Putative Phytosiderophore Transporter in <i>S. cerevisiae</i>	1:00
Shanna Quinn Dr. Kristen Brubaker	Expression Patterns of Heat Shock Factor-1 and Daf-16 in <i>Megachile Rotundata</i> after Heat Shock	1:15
Diana Hope Pierce Dr. Karl Henry	Dimorphism in the opportunistic fungal pathogen <i>Candida albicans</i> : The role of the putative histone acetyltransferase component Ada2	1:30
Jared May Dr. Karl Henry	Gcn5-independent antagonism between azole antifungals and the histone acetyltransferase inhibitor garcinol in the fungal pathogen <i>Candida glabrata</i>	1:45
Eileen Burkett Danielle Yoder Dr. John Hranitz	Design of Control Region Primers in Collared Lizards To Detect Maternal Inheritance	2:00
Eileen Burkett Danielle Yoder Dr. John Hranitz	DNA Sequences Produced by Control Region Primers in Collared Lizards to Detect Maternal Inheritance	2:15
Emily Kinkead Dr. John Hranitz Dr. Cynthia Venn	Nucleotide Variation in Geosneck Barnacles from Two Buoys in the TAO Array	2:30
Nathan Gainer Dr. Steven Rier	The effect of abandoned mine drainage deposits on stream phosphorus concentration and the resulting response of the microbial community.	2:45
Christopher Ort Dr. Kevin Williams	The influence of light exposure and wavelength on the ultradian rhythms of <i>Desomodium gyrans</i>	3:00
Alison Adamski Dr. John Hranitz Dr. Cynthia Surmacz	Understanding stress responses in a bioindicator: HSP70 levels in <i>Lumbriculus variegates</i> following heat shock	Poster Presentation—outside 79 Hartline