2008 Health Sciences Symposium to Focus on Aging

Bloomington University will host the 17th annual Health Sciences Symposium on April 10 and 11, 2008 at Kehr Union. “Aging with Grace” is the theme of this year’s symposium and will feature keynote speaker, Dr. David A. Snowdon. Dr. Snowdon is an epidemiologist and a leading expert on aging and Alzheimer’s Disease. He is a professor in the Department of Neurology in the College of Medicine and Sanders-Brown Center on Aging at the University of Kentucky. Dr. Snowdon holds a Ph.D. in Epidemiology from the University of Minnesota. He is the director of the “Nun Study,” a longitudinal study of aging and Alzheimer’s Disease begun in 1986 that involved 678 Roman Catholic nuns of the School Sisters of Notre Dame. The nuns, ranging in age from 74 to 106, are an ideal study population since they live a similar lifestyle. Findings from the Nun Study have provided us with practical knowledge on aging and an understanding of factors that predict Alzheimer’s Disease. The results of this research have been published in several scientific journals including the Journal of the American Medical Association, American Journal of Epidemiology, and the Journal of American Geriatrics. Dr. Snowdon’s findings have been featured on television programs such as NBC’s Today Show, ABC’s Nightline, CNN, and the evening news of all three major networks and in print in The National Geographic, TIME, Newsweek, and major newspapers across the country. In 2001, Dr. Snowdon published a book on the study entitled, Aging with Grace. He hopes that the lessons learned from the Nun Study will help us all lead long, healthy, meaningful, and productive lives.

The keynote address “Aging with Grace: Findings from the Nun Study” will be held on Thursday, April 10 at 7:00 p.m. in Kehr Union Ballroom. Dr. Snowdon will also present a workshop “Healthy Aging: Dying Young as Late as Possible” on Friday, April 11, 2008 at 8:45 a.m. in Kehr Union Ballroom. 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 Saturday, 26 April, 1:00-3:00 PM or Thursday, 1 May, 1:00-3:00 PM (one of the study days before finals). 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 2007.

Great job!

**Medical Imaging**
- Amanda Addis
- Jillian Anthony
- Maci Aumiller
- Lindsay Cartin
- Matthew Fickinger
- Lynn Gera
- Elyssa Goldstein
- Grace Goode
- Rashel Hagmayer
- Elizabeth Heim
- Jacob Hiller
- Cory Hoffman
- Jillian Kida
- Rhyaan Kleiner
- Jennifer Kubilus
- Erin Linkoski
- Christine Lucasti
- Kaitlyn Manley
- Rose Novinger
- Amanda Peterman
- Grant Poppenwimer
- Jenna Ruppert
- Nicole Seward
- Justin Singer
- Kristina Slabanick
- Laura Stanko
- Susan Wade
- Taylor Washburn
- Amanda Worsham

**Pre-pharmacy**
- Christopher Ellis
- Samantha McAteer

**B.A. Biology**
- Erinda Como, criminal justice minor

**B.S. Biology**
- Andrew Ackerman, pre-medical sciences
- Emily Barkanic
- Kyle Bartol, pre-medical sciences
- Michael Bierds
- Nicholas Bixler, chemistry minor
- Richard Carter IV, chemistry minor
- Travis Castleberry, pre-medical sciences, chemistry minor
- Kyle Correll, pre-medical sciences
- Ryan Dorkoski, pre-medical sciences
- Chardei Eshleman, pre-medical sciences
- Jared Geissinger, chemistry minor
- Chad Gensemer
- Jacquelyn Hazard
- Aubrey Jones
- Katie Klucharich
- Allison Kunkelman
- Bradley Loss, microbiology
- Devon Lyons
- Jared May
- Amanda Meholchick
- Sandra Newell
- James Noll, pre-medical sciences
- Jamillah Patton
- Brandon Petrone
- Allen Petros, pre-medical sciences
- Essie Reed
- Amy Schultz, pre-medical sciences
- Stephanie Simpson
- Philip Sobolosky, chemistry minor
- Michelle Stipanovic, pre-medical sciences
- Arifah Uqdah
- Broc Wenrich, pre-medical sciences

**B.A. Biology, Pre-physical Therapy**
- Joelle Bittner
- Justin Blessing
- Erin Deck
- Kimberly Dodson
- David Francavilla
- Allison Grimm
- Amanda Kaeleh
- Justin Lavo
- Danielle Page
- John Pavese
- Krista Petruskevich
- Kelly Pidgeon
- Kenneth Thomas
- Danielle Yoder

**B.A. Biology, Pre-physician Assistant**
- Joelle Bittner
- Timothy Faust
- Ashley Erdman
- Erica Kocher

**B.S. Clinical Lab Sciences**
- Debon Berger
- Lauren Gedman
- Cynthia Kurtek
- Casey Massimini
- Jenna Peters
- Sean Scubelek

**Pre-occupational Therapy**
- Brittany Conrad
- Grace Crispell
- Stephanie Fowler
ALL ABOUT INTERNSHIPS  by Dr. Margaret Till

What is an internship?
Internships are defined as supervised practical training for an advanced student or recent graduate; 50.490 Internship in Biology and Allied Heath Science is described as a work-study program open only to juniors and seniors majoring in biology or allied health sciences. It may count for 3 to 15 credit hours (however, only 3 hours may count as biology elective credits).

Why do an internship?
Internships can make a positive difference in your job application or in your application to graduate school. For biology majors internships can help you select the particular area in which you would like to work. Biology majors may work in a government facility, a commercial laboratory, a research laboratory, a park, or a zoo. For allied health majors, an internship can be a major positive factor in their gaining admission to the graduate health professional program of their choice or to the clinical program of their choice. Interning allied health majors generally do not work directly with patients due to liability issues; their internships are more likely to be extensive shadowing experiences. As well as benefiting you after you leave Bloomsburg, an internship can contribute to your graduation; the internship course may count for 3 credits of biology electives. Internship credits beyond these 3 may count as free electives. (Keep in mind however, that for each credit you, the student, must have 40 hours of on-site experience.)

How do you set up an internship?
Planning an internship should begin early in the semester before the internship is to be scheduled. In other words, you need to begin now if you would like to have a summer internship. Your first step should be to talk with your academic advisor to determine if an internship could benefit you. Next you should find out if Bloomsburg University has an affiliation with the facility where you wish to intern. You may only intern at a facility with which the University has a legal affiliation. This is to protect you, the facility, and the University. To check-out the facilities with which the University already has affiliations, go to the webpage for Academic Internships (BU homepage, click Current Students, click Academic Affairs, click Registrar’s Office, click Current Students, click Internships or http://departments.bloomu.edu/internship/  On the left side of the page, click on Active Affiliation Agreement Sites. Check the list by organization name to learn which organizations and where they are located. Many of the sites are medically related.

If the type of internship, the locale, or facility where you would like to intern is not on the list, pursue finding an internship yourself. Once you identify a site, talk with personnel at the facility; many facilities have a designated person to handle setting up internships. Determine if the facility accepts interns, what they expect of an intern, and if they would be willing to have you as an intern. If this sounds like an experience that could help you, get the name of the person the University should contact and their information (facility name, person’s name, address, and telephone numbers). Your internship advisor should e-mail this information (contact’s name, facility name, address, and phone number) and the course number for the internship (50.490) to Ms Elaine Parker in the Registrar’s Office. Medical facilities take the longest to agree to affiliation terms; therefore you need to submit this information as early as possible. Of course, if the University has an affiliation with your proposed site, this is not necessary; it has already taken place. Once Ms Parker is able to complete an affiliation agreement with the site, she will notify your advisor and you can submit your #509 Internship form and proposal. The internship proposal and form should be completed in consultation with your internship advisor. Although your academic advisor may serve as your internship advisor, sometimes another faculty member is better suited, possibly because of prior knowledge about working with the facility.

What is an internship proposal?
The internship proposal needs to show the relationship of your proposed internship to biology or allied health and show that you will be developing skills and knowledge in biology or allied health. Further the proposal should outline the work planned and learning objectives and have a detailed written plan for evaluating the internship. The proposal must also include a letter from your proposed on-site supervisor to whom you will report during the internship. Your internship advisor submits the 509 form, the proposal, and the letter to the biology chairperson.

How am I evaluated in an internship?
Each internship may have different requirements as agreed upon by you and your internship advisor. However, all must include the following: 1) a detailed evaluation of your performance by the on-site supervisor (departmental form); 2) on-site evaluation by the internship advisor (when possible); 3) a daily journal with content that reflects fulfillment of designated objectives for the internship (work time, activities, observations, skills learned, opinions, etc.); and 4) a final comprehensive paper which summarizes the daily journal and relates it to knowledge and skills learned in biology or allied health programs; other content may be included as specified by the internship advisor.

HAPPY INTERNING!  Thank you to Ms. Elaine Parker, Registrar’s Office, for her contributions to this article.
OPPORTUNITIES

UNIVERSITY OF MICHIGAN MEDICAL SCHOOL AND SCHOOL OF DENTISTRY

The University of Michigan Medical School and School of Dentistry are having a Profile for Success Program for students from disadvantaged and under-represented backgrounds. This program is an intensive six-week enrichment and skills-building summer residential program for juniors, seniors, and recent graduates. Participants prepare for the MCAT or DAT in structured classes or facilitated study groups and are exposed to research, careers in education, and career specialties. The components aim to prepare students to navigate the admissions process successfully, with activities including mock interviews, personal essay writing, and application service workshops. All participants are housed on campus and receive a partial travel allowance and a stipend for meals. The application deadline is March 7, 2008. For additional information and applications, go to the following website: www.med.umich.edu/medschool/diversity/pfs.html

UNIVERSITY OF ALABAMA AT BIRMINGHAM: SUMMER BIOMEDICAL RESEARCH

The University of Alabama at Birmingham is sponsoring an eight-week program for selected undergraduates to conduct laboratory research under the guidance of individual UAB faculty members. Students will also have the opportunity to shadow a physician-scientist during daily clinical work. Recipients of the competitive fellowship will receive a stipend of $2,000 and receive free campus housing. The program runs from June 2 to 25, 2008. The applicants should have completed sophomore year and have a science grade point average above 3.00. Previous research experience is not required. For more information and an application, go to http://www.uab.edu/sibs The application deadline is March 14, 2008.

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 session. Registration is now open for test dates in June, July, August, and September. You are encouraged to register 60 days or more in advance in order to secure your first choice of test date. Please remember to register for the exam in the exact name that appears on your identification card. New practice tests have been posted at the MCAT Website; these more closely approximate the actual test-day experience. For more information or to register go to http://www.aamc.org/students/mcat/ The Pre-Medical Sciences Club sponsors bi-weekly MCAT review sessions. For more information contact Kyle Bartol at kdbartol@bloomu.edu

JAN PLAN REPORT

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. Jan Plan students have the opportunity to interact with medical students, residents, and physicians during rounds, case study discussions, and observations. Participating in Jan Plan this year were biology majors Kyle Bartol and Maggie Yesalavage. Among the medical specialties that Kyle and Maggie observed were Adult Intensive Care, Pediatrics, Neurosurgery, Cardio-Thoracic Surgery, Dermatology, Pediatric Surgery, Obstetrics and Gynecology, General Internal Medicine, Hematology/Oncology clinic, and Emergency Medicine. Both students had the opportunity to observe several surgeries and interact directly with medical professionals. Maggie found the Jan Plan experience to be extremely valuable. She reports that “not only do you learn about being in the medical profession, but you learn about the entire medical school experience, including the application process and the MCATs. I learned about different kinds of medical schools, what happens in medical school, residencies, and board exams. I had time to talk to medical students, residents, and attending doctors one on one about their experiences and this really helped me get on track with what I need to start doing now in order to be a successful medical school applicant and student.” Kyle’s favorite part of the Jan Plan program “besides getting to observe all of the surgeries, would be getting to sit down at lunch and discussing different topics with the physicians. I learned a lot about how their lives are affected from being a doctor and how they balance their personal life and professional life.” Both Maggie and Kyle report that the experience reinforced their desire to become physicians. Maggie sums it up well when she states “If you are ever given the chance to do Jan plan, DO IT!”

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 has Rising Stars!

Three BAHS students were recently featured as rising stars on the BU website. Congratulations to all. We are proud of you!

**Yveny Eustache** is a junior majoring in biology, pre-medicine option, and pursuing minors in English, Women’s Studies, and Spanish. Yveny is interested in obstetrics and gynecology and plans to open clinics overseas, most likely in Haiti, her parents’ homeland. Yveny is active in campus and community activities. She is a Community Assistant, a DASL mentor, and an active member of the Black Cultural Society and the Diversity Living Learning Community. Yveny is vice-president of the Gospel Choir and treasurer of the Pre-Medical Sciences Club.

**Emily Kinkead**, a junior with a double major in Biology and Political Science. Emily is conducting a research project in which she is comparing barnacle species from two buoys in the Pacific Ocean. Emily is president of Democracy Matters, a campus organization dedicated to encouraging students to become politically active and to vote. Emily is also a member of BU’s Forensics Team. She recently placed sixth in Extemporaneous Speaking and Dramatic Duo at the Collegiate Forensics Association Winter Weekend Speech Tournament in Montreal, Canada.

**Sherrol Browne**, a junior biology major in the pre-medical sciences option, is from Antigua. He is a graduate of Antigua State College. Sherrol is very active on campus. He is currently serving as president of the Gospel Choir. He is a Community Assistant and a member of the International Students Association. Sherrol was a member of the Homecoming Court last fall. He is a member of the Pre-Medical Sciences Club. Sherrol plans to attend medical school and specialize in oncology in a third-world country.

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, on the track, and in the class room. Congratulations to **Michael Bierds**, a biology major and a member of the swim team; **Casey Massimini**, a clinical lab science major and softball team member; **Sandra Newell**, biology major and track team member; **James Sweeting**, a biology major in the pre-medicine option and member of the football team; and **Susan Wade**, a Medical Imaging major and member of both the track and soccer teams. Congratulations to all our scholar-athletes!

Call for Salamander Wranglers - Spring 2008

Did your mother tell you nothing would ever come of playing in mud puddles? Now you can prove her wrong! Playing in mud puddles is precisely the type of prior experience required for this job. Chelsea Barnes (who thinks nothing of jumping into puddles, streams, ponds, and more), our graduate student working on stream salamanders, needs field assistants to collect stream and bank salamanders as part of her thesis research. She has a narrow window of opportunity to collect field data this spring (March – April) and a few volunteer field biologists would be just the extra help she needs to get the data collected. Chelsea will provide guidance on data collection in the field, only a willingness to learn is required. Contact Chelsea cmbarnes@bloomu.edu or Dr. Hranitz (jhranitz@bloomu.edu) if you are interested in helping. Hours are flexible. This would be a great experience (salamander wrangler) to place on your resume! Head’em up, move’em out…
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. Tri-Beta members are invited to the Annual Honors Banquet hosted by the College of Science and Technology on Monday, March 31, 2008. Members are asked to RSVP directly to the Dean’s Office (HSC 176 or 384-5333). The annual Tri-Beta convention is March 29 at Mt. St. Mary’s College in Maryland. 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. Surmaz. Tri-Beta sponsors weekly tutoring sessions for students in introductory biology courses each Monday at 5 p.m. in 72 Hartline Science Center. The society plans to host an event in April for BAHS students and faculty to meet with alumni to hear about life after Bloom. Also planned is a bake sale fundraiser on March 20. The Society will also sponsor a reception for all graduating seniors and free coffee and donuts during finals week. The next Tri-Beta meeting will be after Spring Break to discuss future activities and elect next year’s officers. Current Tri-Beta officers are: President, Travis Castleberry; Vice-President, Kim Dodson; Secretary, Jennifer Krott; Treasurer, Jared Geissinger; Historian, Allison Grimm; Advisor, Dr. Surmaz.

BAH Club
The Biology Club is having a busy and fun semester! The group recently conducted a fundraiser in the halls of Hartline—we hope you purchased some baked goods and plants for your special Valentine! The club also had a Movie Night recently where the film Flock of Dodos on the creationism/evolution controversy was aired. The group headed to Baltimore on February 23 to visit the Body Worlds Exhibit and the National Aquarium. The upcoming schedule of events is:
February 25 - Dr. Henry will speak to the club, 7 p.m. in HSC 142
March 3 - Fun activity TBD
March 17 - Medical Professionals from Geisinger
March 24 - More fun, Activity TBD
March 31 - Speaker from Audiology, 7 p.m. in HSC 142
For more information on BAHS club activities, please see President, Debbie Hunsberger; Vice-President: Nicholas Bixler; Secretary, Melissa Scubelek; Activities Coordinator, Jillian Anthony; and Treasurer, Erin Buckwalter. Club advisors are Drs. Hranitz, Brubaker, and Corbin.

Pre-Medical Sciences Club
The Pre-medical Sciences Club is having a busy semester. The group recently held a Valentine’s Day fundraiser in the halls of Hartline—we hope you purchased some baked goods and plants for your special Valentine! The group meets every other Tuesday at 5 p.m. in 178 Hartline. The next meeting is Tuesday, March 4. Nominations for officers will be taken at that time. The club is also contacting CGA for funding for trips for next year. The next MCAT review session is Monday, March 3 at 5 p.m. in 178 Hartline. Sessions will continue every other Monday. For more information on the MCAT review, contact Kyle Bartol at kdbartol@bloomu.edu The Pre-medical Sciences Club is preparing an exhibit on melanoma for the Wellness Fair on April 11, 2008. The club is also organizing a team for Relay for Life beginning on Friday, April 25, 2008. For more information, contact Eileen Burkett (eyburket@bloomu.edu) The Pre-medical Sciences Club welcomes all students who are interested in any of the medical sciences (allopathic or osteopathic medicine, dentistry, optometry, podiatry, veterinary medicine, etc.) Please come and attend a meeting. Serving as officers this year are: President, Nick Bixler; Vice President, Pam Hudock; Secretary, Kyle Bartol; Treasurer, Yveny Eustache; and Public Relations, Eileen Burkett. Dr. Ardizzi is the club advisor.

BU hosts Science and Tech Symposium
Bloomsburg University will host its annual Science and Technology Symposium on Saturday, March 1, 2008. This program provides 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 welcomes students and their families who have expressed interest in majoring in our academic programs. The day includes 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. If you are interested in helping welcome prospective students and their families, please see Dr. Wood.
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 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.

Allied Health Students Gain Experience

Ellie Daniels and Megan Patzuk 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. Janelle Bickle is enrolled as a medical imaging intern in sonography at Wyoming Valley Medical Center. 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.

MI Internships for Summer and Fall 2008

BAHS will offer medical imaging internships at Geisinger Medical Center in the Summer 2008 and the Fall 2008 semesters. Students enroll in a three-credit internship that applies toward the Science Emphasis of the B.S. in Medical Imaging degree. Applicants should have completed Concepts in Biology I and Anatomy & Physiology I by the start of the internship. Internship applications can be obtained from Dr. Hranitz, 131 HSC. Applications require a 250-word career essay and are due to Dr. Hranitz by 4 p.m. on March 28, 2008.

Come and learn about Skin Cancer

The Science and Health Sciences Living-Learning Community will host a presentation by Dr. Angela Hess on “The Summer Sun: The Good, The Bad, and The Ugly.” All are welcome on April 17, 2008 at 7:00 p.m. in Columbia Hall.

Upcoming Speakers

Dr. Conrad Quintyn, Department of Anthropology, has invited two Pennsylvania State Police detectives from the Criminal Investigation Assessment Unit to discuss some of their “cold cases.” The talk, entitled “The Cold Case Detectives: Pennsylvania State Police Criminal Investigative Assessment Unit” will be presented on February 26, 2008 from 4 to 5:15 p.m. in 170 Centennial. All are welcome.

Noted paleoanthropologist Dr. Maeve Leakey will be coming to campus as part of the Provost’s Lecture Series. Her talk, entitled ”My Life in Science: An Evening with Maeve Leakey” will be held on April 1 at 7 p.m. in Haas Auditorium. Dr. Leakey’s visit is hosted by the anthropology department. Admission is free and open to the public.

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 BioSynthesis.
What are you doing this summer?

BAHS Summer College Offerings
The following courses will be offered by BAHS during summer 2008:
Session I: Human Biology (Dr. Melnychuk); Anatomy & Physiology I (Drs. Surmacz & Corbin); Intro. Microbiology (Dr. Kipe-Nolt); Human Sexuality, Field Botany (Dr. Williams); Current Topics in Biology (Dr. Chamuris); Research Methods (Dr. Hranitz); Radiology Procedures & Image Evaluation II (Mrs. Mehlbaum).
Session II: Cells, Genes, and Molecules (Dr. Chamuris); Anatomy & Physiology II (Drs. Hranitz and Wassmer); Human Sexuality (Dr. Wassmer.)

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 II.

Check out the Biology Elective Offerings this Summer!
A great opportunity to catch up or get ahead
Field Botany (50.263), 3 credits, Session 1, MTWTh 8 to 8:55 a.m., TTH 9 a.m. to 12:50 p.m.
Dr. Williams
Sometimes you have to stop and smell the flowers, or admire the ferns, or maybe marvel over the sedges. This summer learn not only to sniff the flowers but also learn their names, characteristics, and habitats. You will learn techniques to collect and identify the non-woody plants common to central Pennsylvania. A great chance to get hands on experience in the field and learn practical skills that will make walking in the woods even more fun.

Current Topics (50-489 & 589), 3 credits, Session 1, MTWTH 3:20 to 5:00 p.m.
Topic: Human Evolutionary Genetics
Dr. Chamuris
In this course we will examine key aspects of human evolution from a genetic perspective. First we will review the basics of evolutionary theory, and the current understanding of hominid phylogeny. We will also review some fundamental aspects of molecular genetics and cytogenetics, with a focus on the methods used to gather data of evolutionary significance. We will then explore several major areas of human evolution genetics using recent and current peer-reviewed literature: hominid phylogeny, early human migrations and the ancestry of indigenous populations, and examples of natural selection and genetic drift in human populations. Issues of medical, anthropological, and phylogenetic significance will be stressed.

Marine Science Consortium
SUMMER 2008 COLLEGE PROGRAM
The following Marine Science courses serve as biology electives and are offered at The Marine Sciences Consortium at Wallops Island, VA. E-mail Dr. Hranitz (hhranitz@bloomu.edu) or see Drs. Klinger (HSC 005), Hranitz (HSC 131) or Corbin (HSC 173) for enrollment details. Fees include tuition to BU and station fees to the MSC. In addition to the courses listed, MS-390 and 590, Problems in Marine Science are offered during each session.

SESSION I: MAY 12 - MAY 30, 2008
MS-241 Marine Biology- Beeching (Slippery Rock University.)
MS-431 Ecology of Marine Plankton - Butler (Kutztown Univ.)
MS-491 Coral Reef Ecology- Hunt (East Stroudsburg Univ.)

SESSION II: JUNE 2 - JUNE 20, 2008
MS-211 Field Methods - Kumar (Millersville University)
MS-342 Marine Botany - Wagner (Millersville University)
MS-343 Marine Ichthyology- Thompson (Lock Haven University)

SESSION III: JUNE 23 - JULY 11, 2008
MS-260 Marine Ecology - Hunt (East Stroudsburg Univ.)
MS-343 Marine Ichthyology- Dagit (Millersville Univ.)
MS-492 Marine Mammals - Ryan (Kutztown University)

SESSION IV: July 14 – August 1, 2008
MS-221 Marine Invertebrates- Whitford (East Stroudsburg )
SPECIAL SESSION: August 3 - August 17, 2008
Window to the Oceans - Ryan (Kutztown) (non-majors)
Greetings from SICB in San Antonio!  By Dr. John M. Hranitz

The annual meeting of the Society for Integrative and Comparative Biology (SICB) was held in San Antonio this year on January 2-6. Faculty (Drs. Corbin, Venn, Wassmer, and Hranitz) at the meeting were joined by four students (from left to right) Trinity Stempko, Chelsea Barnes, Amy Savitski, and Chris Krum traveling to present research in three posters.

Rather than read my thoughts about the meeting, please enjoy the student’s perspective of their first national/international meeting. Below are comments from the four students attending the meeting.

“I was able to experience many different biology topics and speaking styles as well as different personalities. I found many of the talks to be very interesting, and I enjoyed all of the turtle/reptile and amphibian talks!!! The posters were really interesting as well because I was able to interact with other students and discuss their research. I also met other people conducting similar research as me. My favorite things about the conference and San Antonio (I don't have just one) would have to be: meeting Dr. Wibbels, speaking with other scientists that have done turtle research, interacting with other students, exploring San Antonio with Amy, Trinity, and Chris, … and making contacts for my future graduate degrees.” —Chelsea Barnes

“Seeing all the different research projects that were presented was amazing. Learning what biology conferences are all about was, for me, the best experience. I liked the talk that compared swimmer versus diver versus land animal cytoglobins and neuroglobins.” —Chris Krum

“My favorite aspect of the SICB conference was getting to explore San Antonio and seeing all the southern culture for the first time, all while getting to know the other research students. Being a part of such a large group of students from all around the world presenting research was very exciting!” —Amy Savitski

“My favorite educational experience at the meeting was all the information on the sound and force of the mantis shrimp strikes. That was my favorite presentation! (closely followed by the presentation on the Madagascar chameleons). My favorite fun thing about San Antonio was visiting the missions. I would like to return and visit all of the missions to see the differences among them.” —Trinity Stempko

To those of you conducting research this year, perhaps we’ll see you next year at SICB in Boston!

SICB Presentations:

**Barnes, C.; Sedon, M.; Hranitz, J.M.** Late Summer Stream and Stream Bank Salamander Community Diversity in Northeastern Pennsylvania.


**Stempko, T; Venn, C.** Growth Rate Determinations for *Lepas anatifera* (Cirripedia:Lepadidae) in the Tropical Pacific Using Shell Growth Patterns and *In-situ* Temperature Records.

**Rogers, S.; Corbin, C.; Wassmer, G.** Ectoparasite Load, Fecundity, and Brood Survivorship in Barn Swallows (*Hirundo rustica*).
Check out BAHS Student and Faculty Research

Angela Shellenberger is conducting two research projects with Dr. Corbin. The first is a longer-term project on co-evolution of morphological and life-history traits in two clades of sharks: hound sharks (Triakidae) and the mackerel sharks (Lamnidae). Her idea is that there are particular life-history characteristics (parity, mode of birth, etc.) that evolve with pelagic morphology. In other words, a fast swimming pelagic foraging life-style places constraints on reproduction in these animals. Her methods are based largely on published phylogenies and life-history literature but she hopes to get to a natural history museum to personally take measurements on sharks. Additionally, Angela has taken on a short-term research project with Dr. Corbin measuring aspects of plumage color across subspecies of an African passerine bird (Elmina longicauda, the African Blue Flycatcher). With the help of morphological analyses by Melissa Scubelek and genetic analyses from Dr. Hranitz, Dave Kessler, and Justin Dion, they are testing hypotheses of introgression and speciation in this interesting bird.

Cara Shellenberger, a senior biology major, is working with Dr. Henry on multidrug resistance (MDR) gene regulation in the opportunistic fungal pathogen Candida glabrata. The emergence of C. glabrata in the last 15 years is troubling because of its intrinsic resistance to commonly used antifungals due, primarily, through the expression of MDR efflux protein that pumps these drugs out of the cell. Cara’s research has been able to show that the loss of enzymes responsible for altering DNA packaging proteins (histones) results in decreased resistance to antifungal agents in this organism. Furthermore, this increased sensitivity has been shown to correlate with decreased expression of MDR genes. Future studies are planned that will test the effect of inhibitors of histone modifying enzymes (HME) on drug sensitivity with the hope that this will open up novel therapeutic options for the treatment of C. glabrata infections in humans.

Five students are working on molecular biology projects with Dr. Hranitz this spring. Amy Savitski is analyzing the mtDNA (cytochrome oxidase I) gene diversity in a sample of leafcutting bees she collected last summer on the Aegean Island of Lesbos. Chris Krum is conducting bioinformatic analyses to develop primers that will be used to sequence an intron of the stress protein HSC70 in leafcutting bees. Valerie Letukas and Richard Carter are experimenting with methods to purify and measure the activity of 70 kD stress proteins in leafcutting bees. Dave Kessler is sequencing the cytochrome b gene and the myoglobin intron in the African Blue Flycatcher. Two students are conducting field studies with Dr. Hranitz this spring. Chelsea Barnes (graduate student) and Mike Sedon (undergraduate student) are investigating the community structure of salamanders in the riparian zone of small streams in northeastern Pennsylvania.

Emily Kinkead will be examining the collections of gooseneck barnacles from 2 buoys (at 5N, 95W and 5S, 95W) recovered from the TAO array in the Pacific. She will identify the barnacles to species and then compare the species distribution on each buoy in the context of measured environmental parameters, including sea surface temperature, surface current, and primary productivity patterns in the Eastern Tropical Pacific. Emily is working with Dr. Cynthia Venn, Department of Geography and Geosciences. This study is the groundwork for a future study she will do with Dr. Hranitz looking at the genetic variation of barnacle populations on these buoys.

Shannon Carper, Jillian Kida, Katie Raymish, and Jessica Whitenight have started working in Dr. Hess’s laboratory. They are currently learning various laboratory techniques and will begin working on investigating the role of EphA2 in promoting melanoma growth and spread with Dr. Hess. Stay tuned for more details…

Kyle Bartol is working with Andy Troutman on cloning the rest of the Daf-16 gene from a solitary bee species M Rotundata. Daf-16 is a gene which is involved in regulating glucose/insulin levels, survival, and responses to stress, such as heat shock. They have cloned a fragment in the DNA binding domain and recently isolated the 5 prime end of the gene. They are now working on the center portion of the gene, since the gene is estimated to be approximately 3-4 kb in length. This work is being conducted in Dr. Brubaker’s lab.

Andy Troutman is finishing his master’s thesis project of cloning a conserved region of Daf-16 and other Forkhead Transcription Factors from M. Apacalis. Andy is in his data analysis phase and has cloned fragments from Daf-16, FH A1, FH C2 and FH D3. Dr. Brubaker is his research mentor.

Kendra Sobelesky is analyzing data and has begun writing her thesis. Her research helped establish the optimal manure to cheese whey ratio for maximum methane production. She also demonstrated that methanogen activity varies with the manure source (even though they are all smelly!). She is currently monitoring the conditions in an established laboratory digester receiving allotments of cheese whey at varying intervals. The hope is to demonstrate the feasibility of sustainable methane production from cheese whey over time. She is planning to submit an abstract to the March CPUB meeting. Dr. Nolt is her thesis advisor.
More faculty and student research

Dr. Davis’s lab is having a busy semester. The first order of business was recovering from a Chernobyl-like meltdown in a reagents freezer! Josh Montgomery is completing his independent study research and Missy Tomcavage is pursuing her master’s research. Both are working on isolating and characterizing the avenic acid transporter from oats. The ultimate goal is to clone and sequence the full-length transporter gene, but along the way they are trying to: 1. clone and sequence a 1000 base pair fragment near the 5’ end of the gene; and 2. clone, sequence, and compare a region that may be responsible for the specificity of the transporter to a similar region from the barley phytosiderophore transporter. Stay tuned!

Jared Geissinger has recently completed his Research in Biology Project and submitted an abstract for the Pennsylvania Academy of Science meeting entitled Using Lumbricillus variegatus to Assess the Remediation of Streams Affected by Acid Mine Drainage (AMD). Jared used aquatic blackworms (Lumbricillus variegatus) to assess water quality by comparing their pulse, reversal behavior, and touch response after exposure to water from three Tioga County streams: Morris Run (AMD-impacted), Lick Creek (AMD-remediated), and Sand Run (un-impacted control). He showed that AMD-remediation positively affects aquatic life and indicates the value of blackworms in monitoring the restoration of Pennsylvania streams. Jared’s research mentor is Dr. Surmacz.

BAHS Faculty Updates

Dr. Karl Henry was awarded a grant from the Dean’s Research and Scholarship fund to complete research on “Histone-Modifying Enzyme-Dependent Regulation of Multi-drug Resistance Genes.”

Dr. Angela Hess received a Margin of Excellence grant from the Bloomsburg University Foundation to fund her project titled “Investigating the role of EphA2 in promoting malignant melanoma.” Funds from this grant will be used to support the stipends of two undergraduate research assistants for the Fall 2008 and Spring 2009 semesters. The project investigates the signal transduction mechanisms mediated by EphA2 which work to promote melanoma growth and spread to other organ sites within the body. Students will work on various aspects of the project, learning mammalian cell culture, protein isolation, and visualization using western blotting techniques. Dr. Hess also received a College of Science and Technology research award to fund her project titled “EphA2 as a promoter of growth in malignant melanoma.” Funds from this award will investigate the signal transduction mechanisms used by EphA2 to promote the growth of melanoma. Dr. Hess will present at the 2008 annual meeting of the American Association for Cancer Research in April. The title of her abstract is “EphA2 as a potential therapeutic target for malignant melanoma.”

Dr. John Hranitz recently presented a program for area children at Dinosaur Day at the Children’s Museum in Bloomsburg.

Dr. Steven Rier was an invited speaker at the Environmental and Plant Biology Colloquium at Ohio University. He was hosted by Dr. Morgan Vis and presented a talk entitled “Biofilm extracellular enzymes as indicators of stream ecosystem function.”

Drs. John Hranitz, Clay Corbin, and Gary Wassmer recently attended the annual meeting of the Society for Integrative and Comparative Biology in San Antonio, TX and presented papers with BAHS students. See page 9 for details.

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 19th Annual Sigma Xi Student Research Symposium will be held on Friday, April 18, 2008 at St. Joseph’s University, Philadelphia. Abstracts are due March 23. The keynote speaker is Dr. Jerry Golub, Professor of Physics from Haverford College. His talk is entitled “Novel Ways of Studying Fluid Flows.” For more information, see http://www.sju.edu/srs.

The Pennsylvania Academy of Science meeting is scheduled for April 4—6, 2008 near Harrisburg, PA. Several BAHS students and faculty are planning to present research talks and posters. Look for details in future issues of BioSynthesis.

Shippensburg, PA is hosting this year’s annual meeting of the Commonwealth of Pennsylvania University Biologists (CPUB) on March 28—29. The featured speaker is Dr. Matthew Lamanna, the Assistant Curator of Vertebrate Paleontology at the Carnegie Museum of Natural History. Dr. Lamanna will discuss the evolution of birds. The meeting will also feature workshops on forensic sciences and developing a watershed research laboratory. A planetarium show focusing on spring and a biology photography exhibition are also planned.
The Department of Biological and Allied Health Sciences offers both a Masters of Science degree (M.S.) and a Master of Education (M.Ed.) in Biology. Our master's program in general biology provides opportunities for course work and research at the supraorganismal, organismal, cellular, and molecular levels of biology. The program prepares students for admission to doctoral programs or professional schools and also enhances the knowledge and experience of high school biology teachers. For more information, contact the graduate program coordinator, Dr. Carl Hansen (270 HSC).

Graduate Student News

Please welcome Sumeet Sandhu to our graduate program. Our graduate assistants for this semester are Andrew Paluch, taking care of Cell Biology and IPL, Andrew Troutman, who is overseeing Anatomy and Physiology, Chelsea Barnes, who keeps Concepts I on a roll, and Kendra Sobolesky, who maintains the microbiology laboratories. These four and Missy Tomcavage are planning to finish this spring, so look for their research seminars coming up in April/May. The rest of you, get ready for your candidacy exams!

Meet our New RA Students

Our second 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 Ross Klausing, Andre Pascal, and Joshua Tussing, shown with program director Mrs. Christine Mehlbaum. The program also welcomes Sandy Heier, a new part-time secretary. The RA program is currently preparing for ARRT program recognition and will be evaluated in July.

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. 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.

What is an REU?

REU stands for Research Experiences for Undergraduates. This program funded by the National Science Foundation seeks to involve undergraduate students in meaningful research experiences. The REU website lists a variety of research experiences that are available. See http://www.nsf.gov/crssprgm/reu/reu_search.cfm. Included among them is one involving our own Dr. Hranitz and one involving Millersville University, our sister institution.

National Science Foundation-Research Experiences for Undergraduates (NSF-REU) Program: Behavior and Ecology of Honey Bees and Leafcutting Bees. Stipend: $3400, travel and living expenses are provided by research funding. Where: Aegean/Western Turkey. Tentative Start Date: June 2, 2008. Past research teams were composed of students from diverse backgrounds and experiences. Applicants of diverse backgrounds are encouraged to apply again this year. For additional information see local contact Dr. John M. Hranitz: HSC 131, 389-4130, jhranitz@bloomu.edu.