A Newsletter of the Department of Biological and Allied Health Sciences

Bloomsburg UNIVERSITY

BioSynthesis

Volume 4, Issue 2 (March 2005) BioSynthesis On-Line: http://departments.bloomu.edu/biology/biosynthesis.html

Spring Semester Dates & Special Events

MAR 31: Journal Club,12:20 p.m., 142 HSC
APR 1-3: Commonwealth of University Biologists Meeting, Millersville University of PA
APR 3: BAHS Student Banquet, 5:00 Portabella's, Lightstreet
APR 7-8: Health Sciences Symposium, Kehr Union
APR 8-10: PA Academy of Science Meeting, Camp Hill, PA
APR 14: Journal Club, 12:20 p.m., 142 HSC
APR 16: MCAT Exam

Look what's inside:

Sit on Top of the Food Chain: The Annual BAHS Student Banquet

All biology and allied health students are invited to join in the fun and celebrate the end of the academic year at the Biology Club's annual spring banquet. The banquet is slated for Sunday, April 3 at 5 p.m. at Portabella's in Lightstreet. This gathering is a time to meet with your fellow students and faculty to share stories, celebrate successes, relax before the end-of-semester madness, and have a blast. Don't miss highlights of the evening such as the student presentation of faculty "awards." Past recipients include Dr. Melnychuk as "Best Dressed Professor," "Dr. Kipe-Nolt" as "Most Helpful," and Dr. Ardizzi as "Easiest Prof." But just so you don't feel too safe, students get awards, too! Students have received awards such as "Most Likely to Show Her Belly Button in Lab" and "Most Likely to Sleep Through Class."

The dinner includes your choice of Italian Chicken, Beef Ribeye (6-8 oz), and Vegetable Lasagna. Sides include: tossed salad, oven roasted potatoes, mixed vegetables, dessert, rolls, and beverage (coffee, hot tea, iced tea). Tickets are $11 and may be purchased in the BAHS Office (125 HSC) by Wednesday, March 30, 4 p.m. Only checks made to Bloomsburg University can be accepted.

Don't have a car? NOT A PROBLEM! Transportation is available, just sign-up when you register and get your ticket.

We hope to see YOU there! Plan on joining your friends and faculty for the annual Biology Club's BAHS Student Banquet!

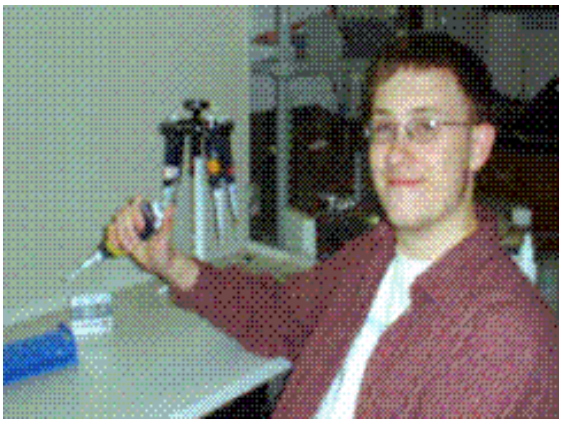
The Health Sciences Symposium is around the corner...

CSI: Philly Style

You've heard of *CSI: Miami* and *CSI: New York*. Well make room for *CSI: Philadelphia*! This year's Annual Health Sciences Symposium will feature keynote speaker Dr. Gregory McDonald, Assistant Medical Examiner for the City of Philadelphia. Dr. McDonald has extensive experience in forensic pathology having conducted over 4000 autopsies and testified in court over 500 times. Dr. McDonald is board certified in forensic pathology and serves as the medical director of Forensic Medicine at the Philadelphia College of Osteopathic Medicine. He is a graduate of Villanova University and the Philadelphia College of Osteopathic Medicine. Dr. McDonald will present the keynote address on Thursday, April 7, 2005, 7:30 p.m. in Kehr Ballroom. On Friday, April 8, 2005 at 8:30 a.m. in Kehr Ballroom, he will also lead a workshop entitled *Truth vs. Fiction: CSI Style*. The symposium will also feature posters and presentations by students and faculty and a Wellness Fair, including a variety of exhibits on health and wellness topics. This is always a big hit! Mark your calendars now! The symposium is sponsored by the School of Health Sciences, the Central Susquehanna Community Founation, and the Provost's Lecture Series.

Celebrating Achievement

BAHS OUTSTANDING STUDENTS NAMED for 2004-2005



Eric Horstick has been named as this year's outstanding biology student. Eric will graduate in May 2005 with a bachelor of science degree in biology (biotechnology option). Eric has gained extensive research experiences as an undergraduate biology major in our biotechnology option. He has conducted independent research on G-protein linked signaling pathways with Dr. Hansen and with Dr. Robishaw, Weis Research Center, Geisinger Clinic. Eric has used cell culture or the zebrafish model system to investigate such topics as heart and hindbrain organogenesis, angiogenesis, and phylogeny. He has presented his research on several occasions including meetings of the Pennsylvania Academy of Science, the Commonwealth of Pennsylvania University Biologists, and the BU College of Science and Technology Research Day. He received a 1st prize poster award in molecular biology at last year's meeting of the Commonwealth of Pennsylvania University Biologists. Eric was selected for the competitive summer internship program at the Weis Research Center. He is a Dean's List student, a member of the Biology Club and Beta Beta Beta Biological Honor Society, and a recipient of a BAHS department scholarship. Eric completed a workshop on Bioinformatics and Molecular Biology Techniques at Penn State University. He plans to pursue a Ph.D. in Molecular and Cellular Development.

Melanie Snyder has been named as this year's outstanding allied health student. Melanie will receive her B.S. in Medical Imaging in May 2005. She recently completed her clinical training in Radiography at Johns Hopkins Hospital and passed her registry exam. Melanie graduated first in her class at Johns Hopkins and received the W. Ross Mitchell Valedictorian Award. She is also the recipient of the Michael Reese Award for Technical Excellence and the Richard Olden Scholarship. She is currently employed by Tristan Associates in the greater Harrisburg area, where she provides a variety of radiological services.

BAHS Scholarship Award Winners

The Department of Biological and Allied Health Sciences recently announced the recipients of the Biology and Allied Health Science scholarships. Recipients of these $250 scholarships are **Katherine E. Huff** and **Jessica Teders**. Katie is a sophomore who is pursuing a major in biology and secondary education. Katie is member of the University Honors program and is a recipient of an outstanding freshman award by the honor society of Phi Kappa Phi. Katie was selected to tutor at the University Tutorial Services Center. She received and Honorable Mention Award for her poster at the 2004 Health Sciences Symposium. Katie has been active in serving the community and participates in the Big Sister Program and Habitat for Humanity. Jessica Teders is a sophomore biology major. She is interested in pursuing a career as a physician assistant . This summer Jessica is planning on gaining health care experience at Lehigh Valley Hospital. She has been named to the Dean's List each semester and is serving as a tutor at the University Tutorial Center.

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 invited to become members. The following BAHS students were recently inducted**: Eileen Garvey,** Biology; **Amanda Hendricks**, Biology; **Michael Kaminsky**, Biology; **Signe Dolloff Klinger**, Medical Imaging; **Alison Lukjanczuk**, Medical Imaging; **Eric Melnychuk**, Psychology, Biology minor; **Kristine Tofts,** Biology; **Michael G. Yohn**, Secondary Education, Biology. Students in the Department of Biological and Allied Health Sciences who are currently members include: **Rachel Boring**, Medical Imaging; **Nicole Dalessandro,** Biology, pre-medicine**; Rebecca Kehler**, Biology; and **Inna Nechipurenko**, Biology and Business (management).

Each year the Bloomsburg University chapter nominates a member to the national fellowship competition of Phi Kappa Phi. The national organization awards 60 fellowships of $5,000 and 40 Awards of Excellence in support of the first year of graduate or professional study. This year the fellowship committee of the Bloomsburg University chapter selected **INNA NECHIPURENKO**. Inna will graduate in May 2005 with a double major in Biology and Business Administration (Management). Inna is an international student from Stavropol, Russia. She has been named to the Dean's List each semester at Bloomsburg University and is listed on The National Dean's List. Inna is a member of both the biological honor society, Beta Beta Beta, and the business administration honor society, Delta Mu Delta. She was selected for membership in The Honor Society of Phi Kappa Phi as a junior. She is listed in Who's Who Among Students in American Universities and Colleges. Inna has served as a tutor at the University Tutorial Services and as a student assistant in the Department of Exercise Science and Athletics and in Bloomsburg University's Audiology and Speech Pathology Clinic. In the community, Inna has provided cultural presentations to local elementary schools and to the Rotary Club. She has assisted in an area fourth grade classroom as a teacher's aid and has volunteered at the Good Shepherd Center. Inna actively pursued opportunities for undergraduate research in biology. In one of her projects, she studied gene flow among gooseneck barnacles in the tropical Pacific Ocean with fellow students Eric Horstick and Katy Parise and faculty mentors Dr. John Hranitz, Department of Biological and Allied Health Sciences and Dr. Cynthia Venn, Department of Geography and Geosciences. More recently, she is characterizing the coding sequence of a heat shock protein in the Leafcutting Bee *(Megachile apicalis)* under the guidance of Dr. Hranitz. Inna has presented her research at the College of Science and Technology Research Day and at the Student Research and Creative Activities Poster Session. Inna plans to pursue a Ph.D. In cellular and molecular neuroscience at the University of Southern California, the State University of New York, Syracuse, or Case Western Reserve University.

Congratulations scholar athletes!

Four BAHS students were among the scholar athletes honored at the recent Scholar-Athlete Luncheon for their excellent work both on the field and in the class room. Congratulations to **Sarah Bounds,** a biology major and a member of the cross country and track teams; **Tonia Zangari**, a biology major and member of the cross country team; **Courtney Dean**, a pre-physical therapy, biology major and swim team member; and **Ashley Yelinek**, biology and major and swim team member.

Good News!

Lauren Delp has been accepted to the occupational therapy program at Thomas Jefferson University.

Laura Marnin has been accepted to the New England College of Optometry.

Evan Yost (B.S. Biology alumnus) has been accepted into the Ph.D. program in Immunology at the University of Pennsylvania.

Have you been accepted to a graduate school, clinical program, or professional school? Share your good news in *BioSynthesis*. Please e-mail Dr. Surmacz (surmacz@bloomu.edu) or catch her in the hall!

Beta Beta Beta Biological Honor Society

Beta Beta Beta Biological Honor Society recently inducted several undergraduate and graduate students at a recent initiation ceremony. Tri-Beta is an honor and professional society for students of the biological sciences. It encourage scholarship by initiating students who achieve superior academic records and who have an aptitude for and major interest in the life sciences. Its goals are to stimulate scholarship, to disseminate scientific knowledge, and to promote biological research. Information about BU's chapter can be found on the web at http://departments.bloomu.edu/biology/BBB The new initiates were honored at the annual banquet of the College of Science and Technology.

Undergrad initiates: Rear, left to right: **Mary Jo Melichercik**, **Chase Kelch**, **Eric Hostick** (current president not an initiate), **Inna Nechipurenko**, **Neema Chandel**, **Valarie van Cleef**, **Kristine Tofts.**

Graduate initiate: Front: **Stacy Rogers**

Standing Members not in attendance due to snow storm: **Mike Kaminsky**, **Kim Kushner.**

Pre-Professional Committee Updates

DASH for DIABETES

The medical students of the Family Practice Interest Group (FPIG) at the Pennsylvania State College of Medicine invite BU pre-medicine students to participate in their second annual **Dash for Diabetes 5K Run/Walk and Children's Fun Run.** Their goal is to raise $4,000 to support diabetes research and treatment at the Penn State Diabetes Center. The event will be held on **April 23, 2005** at the Hershey Medical Center. Information and registration materials can be found at at http://pennstatehershey.com/fpig

Temple Podiatry Open House

The Temple University School of Podiatric Medicine invites you to explore options in the profession of podiatry by attending an Open House on Saturday, April 9, 2005 from 10:00 a.m. to 1:00 p.m. Lunch is provided. To register or for more information, phone 800-220-FEET.

Podiatry Internship: Foot Camp?

Temple University is sponsoring a **free** summer internship program in podiatric medicine from June 3 to 10, 2005. Students will have the opportunity to explore the field of podiatry through hands-on workshops, shadowing experiences, case studies, and seminars. Specific topics addressed include: anatomy of the foot and ankle; an overview of the profession of podiatriac medicine; biomechanics and pathomechanics of the foot and ankle, free screenings, and a look at podiatry specialties such as sports medicine, pediatrics, wound healing, orthopedics, surgery, geriatrics, and diabetes. To be eligible, students must have completed 30 college credits and must submit transcripts, a recommendation, a personal statement and resume. For more information and for applications, please see http://podiatry.temple.edu The deadline is April 15, 2005.

Open House: University of Medicine and Dentistry of NewJersey—School of Osteopathic Medicine.

The University of Medicine and Dentistry of New Jersey--School of Osteopathic Medicine is having its annual Open House on Friday, April 22, 2005 from 12:00 PM to 4:30 PM. There will be an orientation session that provides information on admissions, the medical curriculum, and current research projects. This will be followed by a student panel session and a tour of the medical school campus. If you are planning to apply to this school or are from NJ, you should strongly consider attending. You may pick up registration materials from Dr. Ardizzi or register on-line at http://som.umdnj.edu The deadline for registration is Friday, April 15, 2005.

MCAT updates

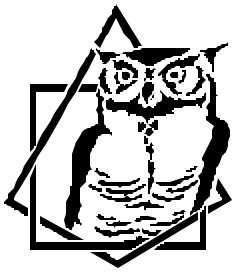
The MCAT is a standardized exam required for admission to allopathic, osteopathic, and many veterinary schools. The exam assesses mastery in biology, general and organic chemistry, physics, scientific problem solving, critical thinking, and writing skills. The exam is typically taken in the spring of the junior year or the summer between the junior and senior year. **The next exam is scheduled for APRIL 16, 2005. The late registration deadline is March 25.** The summer MCAT is scheduled for **August 20**. The registration deadline is July 15. To register go to: **http://www.aamc.org/students/mcat/start.htm**

The Road to Medical School

The Philadelphia College of Osteopathic Medicine is hosting an open house on Saturday, April 9, 2005 from 9:00 a.m. to 12:30 p.m. The program, *The Road to Medical School*, focuses on how to prepare and get accepted to medical school. The agenda consists of an overview of osteopathic medicine, demonstrations of osteopathic manipulative therapy, meetings with PCOM students, and a campus tour. To register, contact PCOM's Admissions Office at 1-800-999-6998 by April 4, 2005. To learn more about the program, see Dr. Melnychuk.

Unsure about what electives to take? Read on… Electives can help you explore new fields or strengthen an area of

TIPS FOR SCHEDULING WISELY



General Education Considerations for B&AHS Majors:

It is never easy to schedule composition classes; take the less stressful way and schedule **Writing in Biology** (WiB, 50.290). To substitute Composition 2 for WiB, you need to write a paragraph explaining why Comp 2 better meets your writing needs and get your advisor's endorsement. This should then be submitted to the B&AHS office for inclusion in your departmental file.
The department offers several classes that meet the Values, Ethics, and Responsible Decision Making requirement. During both the fall and spring semester, Human Sexuality (09.230) is offered. During Spring 2006 Social Implications of Biology (50.254) will be offered.

BIOLOGY Majors:

This fall there are two physiology lecture courses available, **Comparative Animal Physiology** (50.480) and **Vertebrate Systems Physiology** (50.474). You need to schedule your lecture in conjunction with your lab (**IPL**, 50.479), i.e. schedule lecture and lab in the same semester. See Dr. Williams or Dr. Hansen if you are having problems scheduling.

This fall there are two physiology lecture courses available, **Comparative Animal Physiology** (50.480) and **Vertebrate Systems Physiology** (50.474). You need to schedule your lecture in conjunction with your lab (**IPL**, 50.479), i.e. schedule lecture and lab in the same semester.

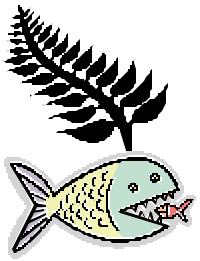
If your option in biology requires **physics and Genetics**, schedule the physics for your junior year. Physics' lectures (54.111 and 112) meet at the same time as Genetics' and Cell Biology lectures.

If your option in biology requires **Molecular Biology** (50.333), it is only offered in the fall semester. Its pre-requisites are Cell Biology, Microbiology, and an organic chemistry course. Students planning to do research in Methods in Biotechnology (50.484, see below) during the spring semester must complete Molecular Biology prior to the spring and submit a proposal for your research by November 2005. Talk to Dr Davis early.

SUMMER OPPORTUNITIES in Field Biology

Dr. Williams will be teaching **Field Botany** during Session 1 (6 weeks) this summer; you will learn to identify local vascular plants, principles of plant systematics, plant ecology, and evolution. The prerequisite is Concepts of Biology 2 (50.115) or consent of the instructor. Dr Rier will offer **Limnology** (50.452) during Session 5 (3 weeks); Limnology is also available for graduate credit (50.552). Limnology will introduce you to freshwater ecology while you explore the biological, chemical, and physical aspects of lakes, stream, rivers, and wetlands. The prerequisite is Ecology. **Bio Sec Ed majors**, remember you need a field biology class.

Cool Fauna & Flora for the Fall 2005

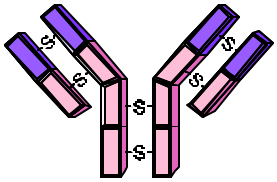


Dr Hranitz will teach Vertebrate Zoology (50.212). The course includes study of the biology of vertebrate animals, emphasizing natural history, physiology, morphology, taxonomy and behavior. It also reviews evolutionary and ecological aspects of each class of vertebrates. The prerequisite is Concepts of Biology 2 (50.115). Dr Chamuris will be leading students in the phylogenetic study of land plants with emphasis on their development, structure, reproduction, and selected ecological and paleobotanical aspects in **Comparative Biology of Plants**. The prerequisite is Concepts of Biology 2 (50.115).

Dr Wood will teach her ever popular **Evolution** class on Wednesday evenings in the fall semester. Its prerequisites are Genetics (50.332) or Ecology (50.351).

Dr Ardizz will teach **Microbial and Molecular Genetics** on Monday and Thursday evenings. The topics will include DNA/ chromosome structure, genetic recombination, plasmids, recombinant DNA, and others. For prerequisites you should have two of the following: Microbiology 50.242, Genetics 50.332, Biochemistry 52.341, or permission of instructor.

Dr. Simpson will teach **Radiation Biology** (50.411) this fall. It studies the effects of radiation on living organisms and nuclear structure; studies fundamental properties of radiation, and the application of radiochemicals in biological studies. Prerequisites include: 50.233 or 50.332, 54.111 or consent of the instructor. If you are interested but have not yet taken physics, see Dr Simpson.



CLINICAL LAB SCIENCE Majors:

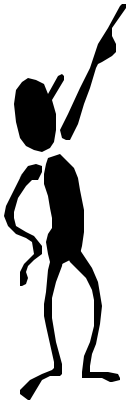
If you have not taken Immunology yet, be sure to complete Cell Biology before spring, so you can take Immunology. It will not be offered again until Spring 2008. During the Spring 2007, you should take Medical Microbiology.

MEDICAL IMAGING Majors:

During the Summer 2005 session, Dr Kipe-Nolt will offer **Introduction to Microbiology** (50.240) for those of you with a "Science Emphasis." Also, Dr Melnychuk will teach **Biology of Aging** (50.231) during the fall semester. Introduction to Nutrition will be available spring semester.

Making Plans for SPRING 2006 PLANS:

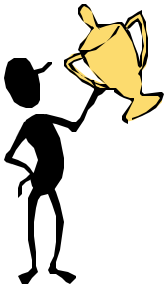
The biology electives include Immunology (Cell Biology is the pre-requisite), Bioinformatics (Cell Biology and Biochemistry are pre-requisites and either Genetics or Molecular Biology), Ornithology (pre-requisite: Concepts of Biology 2), Methods in Biotechnology (pre-requisites: Molecular Biology or Biochemistry 2, and approved research proposal), and Current Topics in Biology: Global Change Biology.



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 in the next 2 - 3 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. Even if you have not been accepted or made a decision regarding the clinical site, you MUST schedule a meeting with Dr. Kipe-Nolt.

BAHS NEWS



BAHS Faculty Recognized

Dr. Clay Corbin has received the Young Alumni Merit Award from the Southeast Missouri State University in recognition of his achievements made soon after graduation. Dr. Corbin received his Master's Degree from the university in 1995. At SEMO's Spring commencement, he will lead the graduates of the College of Science.

Dr. Judith Kipe-Nolt was recognized for excellence as a faculty member in the Department of Biological and Allied Health Sciences at the annual College of Science and Technology spring banquet on Thursday, March 17.

Congratulations to Drs. Corbin and Kipe-Nolt!

Scholarly Activities

Dr. Rier recently received a "Margin of Excellence" grant from the Bloomsburg University Foundation for $6,702. Dr Rier's project will investigate the: *Negative effects of bound tannin on the utilization of leaf litter as an energy source in streams: A possible consequence of rising atmospheric CO_2*. Please see Dr. Rier if you would be interested in working with him on this research project,

Dr. Rier has also published the following paper in collaboration with his colleagues:
Rier, S.T., N. C. Tuchman, and R. G. Wetzel. 2005. Chemical changes to leaf litter from trees grown under elevated CO_2 and the implications for microbial utilization in a stream ecosystem. *Canadian Journal of Fisheries and Aquatic Sciences* 62:185-194.

Greetings from Tanzania!

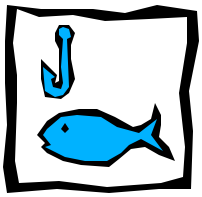
Biology major **Ashley Welikonich** sends greetings from Tanzania in Africa, where she is enrolled in the Study Abroad Program of the School for International Training (SIT.) Ashley reports that the country is beautiful, the field work is great, and she is enjoying working with her group. As part of her program, she is receiving intensive study in Swahili, is taking an interdisciplinary course in Wildlife Ecology and Conservation, and is visiting sites such as the Serengeti National Park, the Ngoronongoro Crater Conservation Area, and Tarangire National Park. For her independent study research project on primates, Ashley is planning a comparative activity budget study of Sykes monkeys in two different habitat types at the same wildlife conservation area. Ashley reports that she misses Bloomsburg (except the weather.) The SIT sponsors a variety of field-based learning programs in Africa, Asia and the Pacific, Europe, Latin America, and the Caribbean. If you would like to learn more about the SIT see Dr. Surmacz for a current catalog or go to www.sit.edu

The BBB Journal Club Marches On!

The Bloomsburg Brown-Bag BioLunch continues to meet biweekly for a lively discussion of a current journal article in biology. Everyone is welcome and students are especially encouraged to attend. So bring your lunch and your scientific curiosity. The BBB schedule appears below. Please see Dr. Corbin for copies of the article under discussion or for more information.

Date	Location	Time	Presenter
Thursday, March 31	HSC 122 or 142	12:20 p.m.	Dr. Wassmer
Thursday, April 14	HSC 122 or 142	12:20 p.m.	Michael Kaminsky

Opportunities

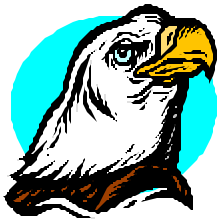


Volunteer to Monitor Fishing Creek

The Fishing Creek Watershed Association is recruiting volunteers to help monitor the upper reaches of Fishing Creek once a month starting in April. It would involve hiking into a very beautiful area of Sullivan County to sample remote tributaries to the East Branch of Fishing Creek. No experience is necessary. See Dr. Rier if interested.

Learn Molecular Biology Techniques

Penn State University is offering their workshop on *Techniques in Molecular Biology for State Universities of Pennsylvania* on May 16 -27, 2005 at the University Park campus. This is an intensive 2 week lab workshop for faculty, **graduate students** and **advanced undergraduate students** that focuses on the principles, techniques, and applications of molecular biology. Participants will gain hands-on experience with DNA purification, analysis by restriction enzymes and gel electrophoresis, DNA probes, Southern blots, cloning, sequencing, PCR amplification and analysis of gene products by western blots. No previous experience is necessary. Now for the best part…..The workshop is FREE and includes meals and housing. Applications are due March 31, 2005. Application forms and additional information may be obtained at http://www.lsc.psu.edu/techniques/workshop2.html

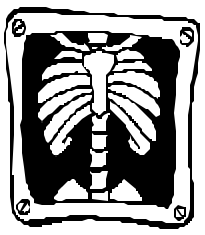


Work with Bald Eagles

Do you want credit and education/interpretation experience while working with Bald Eagles? There are challenging internships starting this Spring and Summer. The internship includes fielding questions about Bald Eagle natural history and giving short but frequent interpretive presentations to the general public at Knoebel's Grove. Transportation, junior class standing, and a strong work ethic are required. For more information, contact Dr. Corin (email: ccorbin@bloomu.edu/, phone x4134, office HSC 131).

Conduct Research on Chemical Senses

The Monell Chemical Senses Center in Philadelphia, PA announces an eight-week summer apprenticeship program for undergraduates. Students will gain research experience in the lab of a Monell Center Scientist and will attend a variety of lectures and workshops. Participants receive an hourly wage. Applications can be obtained at www.monell.org/studentprogram/ and are due April 15, 2005.



Learn about clinical programs in Medical Imaging

Our affiliate, The Johns Hopkins Hospital, will present a session entitled *Diagnostic Medical Imaging: Careers for the Future* at 12:00 p.m. in Kehr Union Ballroom on Friday, April 8, 2005 as part of the Health Sciences Symposium. Anyone interested in medical imaging is invited to attend.

The clinical instructor from Abington School of Radiologic Technology will be on campus to meet with students on April 29, 2005 at 10:00 a.m.

CHECK OUT THESE COURSES!

Limnology (50.452/552), 3 credits, Dr. Rier, Summer Session VI,

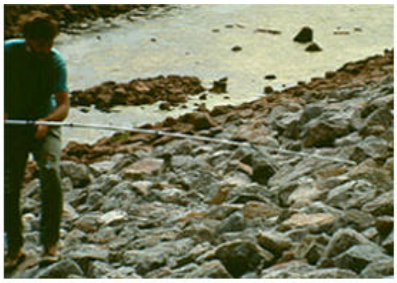
class meets July 11-29

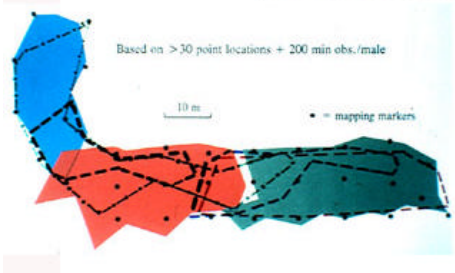
This field oriented course will introduce the fundamentals of freshwater ecology. It will explore the intimate link between the biology, chemistry, and physics of lakes, streams, rivers and wetlands and how these systems function as components of larger watersheds. Biological investigations will include an introduction to the identification and ecology of the algae and other microorganisms, zooplankton, macroinvertebrates, aquatic vascular plants and fishes. In addition, students will gain a practical knowledge of how humans impact these systems and the strategies.

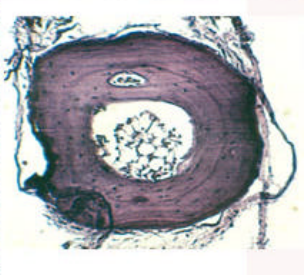
Field Botany ,(50.263) Summer Session 1, Class meets May 31 to July 8
Sometimes you have to stop and smell the flowers. This summer learn not only to sniff the flowers but also learn their names, characteristics and habitats. In this field course the emphasis will be on learning to collect and identify 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.

Vertebrate Zoology (50.212), 3 credits, Dr. Hranitz, Fall Semester 2005

This course provides an introduction to the biology of animals with backbones through lecture/laboratory units covering fishes, amphibians, reptiles, birds, and mammals. Students interested in any career path will benefit from this course because it provides the prerequisites for advanced vertebrate courses (Ichthylology, Herpetology, Ornithology, and Mammalogy) and a foundation for students who will use vertebrate animals in biomedical or veterinary research. Laboratory exercises supply hands-on experiences exploring the taxonomy, morphology, behavior, physiology, ecology, and evolution of vertebrates. Lab activities, three optional field trips, and a class research project promote a variety of practical skills such as experimental design, museum skin preparation, curation of specimens, trapping and handling techniques, aging techniques, gender identification, and use of molecular techniques (stress proteins, molecular gender identification, genetic markers for gene flow and mating system analysis) in vertebrate field studies. Students will gain valuable research experience through individual research projects of vertebrate communities in local habitats. For more information, visit his courses page at http:// facstaff.bloomu.edu/jhranitz/.







The Reading Lamp: Current Topics in Evolutionary Biology

George Chamuris, Professor

Nothing in biology makes sense except in the light of evolution. – Theodosius Dobzhansky

BOOK REVIEWS

Dawkins, Richard. 2004. *The Ancestor's Tale. A Pilgrimage to the Dawn of Evolution*. Houghton Mifflin, Co., Boston and New York. 673 p.

The author of *The Selfish Gene*, and *The Blind Watchmaker*, has written an engaging and fascinating book that summarizes the history of life – backwards in time. The reader takes an imaginary journey back through time, riding along the branches of the tree of evolution back to the trunk. From this perspective, early splitting of lineages is viewed as a "later" event on the journey.

Dawkins calls each phylogenetic node or intersection a *rendezvous*. He presents forty of them. For example, rendezvous 1 is where we meet the chimps and bonobo; at rendezvous 2 the gorillas join in. At rendezvous 26 the protostomes converge, and fungi converge with animals at rendezvous 34. He pulls together current knowledge of comparative paleontology, genomics, genetics and development into a cohesive story with a great cast of characters.

The book is extremely well-written, and anyone with a course or two in biology can enjoy it.

Futuyma, Douglas J. 2005. *Evolution*. Sinauer Associates, Inc. Sunderland, MA. 603 p.

Wow. This is probably the best undergraduate evolution text on the market. All biology majors, profs, and teachers-in-training should have a copy. Up-to-date, richly illustrated, and well-written chapters escort the reader across all areas of evolutionary biology. Evolution texts tend to be biased toward population genetics, or paleontology, or behavior, or genomics. This text is well-rounded, and cohesive. I highly recommend it as a "must-have" desk reference for all biologists.

OBITUARY

On 3 February 2005, one of the leading evolutionary biologists of the 20th century, Ernst Mayr, passed away at the age of 100. He made many significant contributions to biological theory, including many in systematics, ornithology, and speciation. Mayr was the principal advocate of the biological species concept.

He was one of the founders of the Society for the Study of Evolution, and earned many awards and honors. Mayr was the author of hundreds of articles, as well as 20 books. Here are some of his best known books:

Mayr, E. 1942. *Systematics And The Origin Of Species*. Columbia University Press, New York.

Mayr, E. 1963. *Animal Species And Evolution*. Harvard University Press, Cambridge, MA.

Mayr, E. 1969. *Principles Of Systematic Zoology*. McGraw-Hill, New York. Revised 1991.

Mayr, E. 1982. *The Growth of Biological Thought: Diversity, Evolution, and Inheritance*. Harvard University Press, Cambridge, MA.

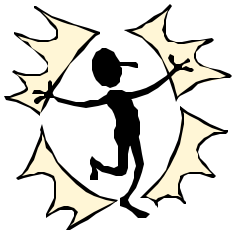
THE BU MASTERS PROGRAM

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 (123 HSC).

Congratulations!

Amy Mudry and **Justin Reis** have successfully defended their masters theses. Amy's research was entitled "Modulation of WNT Signaling by G Protein Coupled Pathways." Justin's project was on "Cloning and Sequencing a heterotrimeric G Protein from an Antarctic Fish, *Notothenia coriiceps.* Dr. Hansen was the mentor for both Amy and Justin.

Breakthroughs in Biomedical Science



The Federation of American Societies for Experimental Biology (FASEB) has recently published its 17th essay that focuses on pivotal discoveries in biomedicine. The collection of essays, called "Breakthroughs in Bioscience," explains some of the major advances in biomedical research and discusses their impact on society.. The articles are beautifully illustrated and are available as reprints or on-line at http://www.faseb.org/opar/break/. Dr. Surmacz highly recommends them if you are looking for something to read! A list of the 17 articles in the series follows:

Bubbles, Babies, and Biology: The Story of Surfactant
From Viper's Venom to Drug Design: Treating Hypertension
Genetic Research: Mining for Medical Treasures
New Weapons to Combat an Ancient Disease: Treating Diabetes
Transplantation: The Challenging Road Ahead
Targeting Leukemia: From Bench to Bedside
Bone Builders: The Discoveries Behind Preventing and Treating Osteporosis
Making Anesthesia Safer: Unraveling the Malignant Hyperthermia Puzzle
Magnetic Resonance Imaging:
From Atomic Physics to Visualization, Understanding and Treatment of Brain Disorders
Cloning: Past, Present, and the Exciting Future
Helicobacter pylori and Ulcers: A Paradigm Revisited
Unraveling the Mystery of Protein Folding
Cardivascular Disease and the Endothelium
The Polymerase Chain Reaction
Blood Safety in the Age of AIDS
Serendipity, Science, and a New Hantavirus
Controlling Hypertension: A Research Success Story