



BioSynthesis

Volume 2, Issue 2 (March 2003)

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

Spring Semester Dates & Special Events

APR 3-4: Health Sciences Symposium
APR 4: Visit by Johns Hopkins Hospital
APR 8: Spring into Health Series: Marijuana: Friend or Foe
APR 9: Visit by Thomas Jefferson University
APR 11-13: Commonwealth of University Biologists Meeting
APR 17 (10 p.m.): Spring Weekend Begins
APR 21 (6 p.m.): Classes Resume
APR 22 -23: Student Research and Other Creative Projects Poster Session
APR 24: Beta Beta Beta Initiation
APR 26: MCAT Exam
MAY 5: Final Exams Begin
MAY 9: Graduate Commencement
MAY 10: Undergraduate Commencement

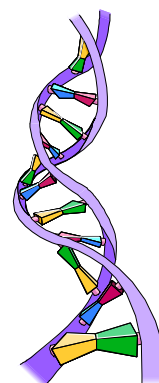


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A CELEBRATION of DNA

April 2003 marks the 50th anniversary of the discovery of DNA structure. On April 23, 1953, Dr. James Watson, an American, and Dr. Francis Crick, an Englishman, published their landmark paper describing the DNA double helix in the journal *Nature*. We are all familiar with its elegant structure, a twisted ladder, with uprights of alternating sugars and phosphates and rungs of nitrogenous base pairs joined by hydrogen bonds. Watson, Crick, and Maurice Wilkins received a Nobel prize for their work in 1962. Key evidence for the structure was provided by the x-ray crystallography of Rosalind Franklin, a colleague of Wilkins. Franklin didn't share in the prize due to her premature death. In honor of the anniversary, April 25 has been declared National DNA Day.



April 2003 is a milestone in the history of DNA science for other reasons. It marks the final completion of the Human Genome Project, an international effort to determine the nucleotide sequence of human DNA. The Human Genome Project provides insights into development, evolution, and disease. It can assist us in preventing, detecting, and treating a wide range of diseases. April 2003 also marks the release of a major scientific report by the National Human Genomic Research Institute which charts the course for the future of genomic research. To celebrate these historic achievements, a variety of scientific and educational events are planned, including a new exhibit at the Smithsonian called "Genome: The Secret of How Life Works," public outreach and school programs, and a variety of symposia for both scientists and the public. April has also been proclaimed as National Genome Month by the White House and Congress.

DNA is now a household word. Dr. Watson, now 75 years old, said it all when he recently remarked "We've had a wonderful fifty years." (New York Academy of Sciences, www.nyas.org).

To learn more about the DNA celebration, check out the following websites:

www.genome.gov/Education www.nyas.org www.dna50.org

Quotes about the Human Genome Project

(from BBC news, <http://news.bbc.co.uk/1/hi/sci/tech/807126.stm>)

"It's a giant resource that will change mankind, like the printing press."

Dr. James Watson, co-discoverer of DNA structure

"This is the outstanding achievement not only of our lifetime, but in terms of human history. I say this, because the Human Genome Project does have the potential to impact on the life of every person on this planet." Dr. Michael Dexter, Wellcome Trust

To learn more about BU's biotechnology option, see Drs. Davis (HSC 113A) or Hansen (HSC123).

A new biotechnology curriculum guide is found on the web:

http://departments.bloomu.edu/biology/curriculumlum_sheets.html

ADVISEMENT & SCHEDULING: COMING SOON TO A COMPUTER NEAR YOU



What should you do to get ready for scheduling Summer or Fall classes?

- ❑ First, check the small bulletin board (across from the department office, HSC 125) for your advisor's name.
- ❑ Second, pick-up a new curricular guide at the office, if you plan to take advantage of such changes as dropping the foreign language requirement from the BS Biology, BS Biology Microbiology, and BS Biology Biotechnology Options. Also, the University's recent reduction of the number of credit hours (to 120 from 128) required for the baccalaureate degree is reflected in the new guides. Curriculum Guide sheets also are available on the web at the department's site http://departments.bloomu.edu/biology/curriculum_sheets.html
- ❑ Third, check your name in STINF to see if you have any holds (e.g. unpaid parking tickets, bad grades last semester, or one placed by your advisor to get you to come by for a visit). Check well in advance of your date to schedule classes.
- ❑ Fourth, schedule an appointment with your advisor (or drop by during their office hours) to discuss:
 - what you "need to" and "want to" take next year;
 - are you meeting your general education requirements (big changes have occurred in these recently); and
 - are you on target to graduate on time. You should have a plan prepared for finishing your degree (listing semester and courses (can be non-specific, for example "biology elective" or "humanities elective")) to discuss when you meet with your advisor.

This is your most important step; don't neglect it.

Special note to rising Biology freshmen: you should schedule Writing in Biology (50.290) during your sophomore year.

Biology Juniors & Juniors-To-Be: Be sure to schedule Ecology during your junior year. Conflicts may arise when you try to schedule it in your senior year. You also should schedule Physics during your junior year; again conflicts may arise with other requirements in your senior year. If you have problems scheduling a biology course, please drop by the department office.

Special note to students signing up for Genetics: due to conflicts with other required biology courses, it has been necessary to CLOSE 50.332-01 and OPEN 50.332-02. If there is sufficient demand for a second section of Genetics, 50.332-01 will be opened.

BS Secondary Education Biology, BA Biology, and Clinical Laboratory Science Students: Fundamentals of Organic Chemistry (52.230) will be offered Spring 2004.

To assist you in your planning, below is a list of biology electives tentatively scheduled for Summer 03, Fall 03, and Spring 04. **Please remember** that unavailability of faculty can change these plans and sometimes very suddenly. Biology Core courses will be offered, as always, both semesters.

BIOLOGY ELECTIVES & PHYSIOLOGY COURSE CHOICES FOR 03-04		
SUMMER 2003	FALL 2003	SPRING 2004
50.252 Field Zoology Session 6 (3 weeks)	50.212 Vertebrate Zoology	50.233 Human Genetics
	50.222 Comparative Biology of Plants	50.342 Medical Bacteriology
	50.333 Molecular Biology	50.390 & 391 Research in Biology (requires proposal, forms, etc.; see advisor)
50.457 Entomology Session 5 (3 weeks)	50.343 Immunology	50.431 Developmental Biology
	50.364 Vertebrate Histology	50.460 Population Biology
	50.390 & 391 Research in Biology (requires proposal, forms, etc.; see advisor)	50.483 Special Topics in Medical Mycology
	50.432/532 Microbial & Molecular Genetics	50.484 Methods in Biotechnology (for BioTech majors and/or instructor's permission)
	50.451/551 Conservation Biology	50.490 Internship (requires advanced planning; see advisor)
	50.490 Internship (requires advanced planning; see advisor)	50.493 Honors Independent Study
	50.493 Honors Independent Study	
	FALL 2003	SPRING 2004
Physiology courses available: Physiology courses are available to count as the Core Physiology requirement and, if you have completed the requirement, another physiology course can count as an elective.	50.478 Microbial Physiology	50.474 Vertebrate System Physiology
	50.480/580 Comparative Animal Physiology	50.477 Plant Physiology
	50.479 Integrated Physiology Lab (should be scheduled concurrently with phys lecture course)	50.479 Integrated Physiology Lab (should be scheduled concurrently with phys lecture course)

Fall Semester 2003 Electives



Unsure about what electives to take? Read on... Electives can help you explore new fields or strengthen an area of particular academic or career interest. The following 3-credit electives will be offered fall semester 2003:

50.212 Vertebrate Zoology -- Dr. Hranitz. Studies the biology of vertebrate animals. Lecture topics and laboratory exercises emphasize morphology, taxonomy, physiology, ecology, evolution, and behavior of vertebrate classes. The course includes lab work with living and preserved animals to familiarize students with representative individuals of the major classes of this group. Several field trips will be taken to local habitats emphasizing field observation of vertebrates in natural settings. There will be one field trip to Wallops Island (additional student cost). Two hours lecture/three hours lab. Prerequisite: 50.115.

50.222 Comparative Biology of Plants -- Dr. Chamuris. This course will compare the phyla of the Plant Kingdom in an evolutionary context. In lab, we study the gross morphology and histology of each phylum, taking into account fossil material where appropriate. The fruit lab is especially enjoyable because many of the fleshy fruits studied in lab are eaten during lab! Some identification techniques are covered, as are the modern tools of systematics employing DNA comparisons. Current models of the origin of the plant kingdom from its algal ancestors, the origin of seed plants, and the origin and adaptations of land plants will be covered. By the end of the course, students will be intimately familiar with all of the broad groups of plants, from the Green Algae (Chlorophyta) to the Flowering Plants (Magnoliophyta). Two hours of lecture/3 hours of laboratory per week. Prerequisite: 50.115.

50.333 Molecular Biology -- Dr. Davis. Investigates the practical and theoretical aspects of molecular biology and gives students an opportunity to explore ontogenic and developmental problems from a molecular perspective. Topics include information processing from DNA to proteins, regulation of gene expression, DNA mutability and repair and genetic engineering. Two hours lecture/discussion, three hours of lab per week. Prerequisites: 50.271, 50.242 and 52.231 or 52.230.

50.364 Vertebrate Histology -- To Be Announced. Studies the structure and function of vertebrate cells and tissues from various body systems. Laboratory studies include the use of prepared microscope slides and color photomicrographs. Two hours lecture/3 hours laboratory per week. Prerequisite: 50.271 or consent of instructor.

50.432/532 Microbial and Molecular Genetics --Dr. Ardizzi. This course covers the genetics of prokaryotic and eukaryotic microbes. In lecture, we discuss those topics in molecular biology related to an understanding of gene mutation, gene action, and development. We cover basic genetic systems in bacteria, in their viruses, and in lower eukaryotes. The laboratory emphasizes the practical aspects of using microorganisms to answer basic genetic questions. The lab is different from most standard labs. With help from the instructor, students prepare lab materials, plan lab exercises, and act as lab instructors. Also, students design, perform, and report on an experiment of their own design. The course is a good complement to Molecular Biology and to Biochemistry II. The emphasis is different—more micro and less molecular. In addition, undergraduate students and graduate students get to work together and learn from one another. The laboratory hours will vary. Prerequisites: Two of the following: 50.242, 50.332, 52.341; or permission of instructor.

50.451/551 Conservation Biology -- Dr. Wood. This class presents the science of preserving biodiversity and sustaining the earth. Draws on and synthesizes information from the fields of ecology, evolution, genetics, philosophy, economics, sociology and political science. Emphasis on the development of strategies for preserving populations, species, biological communities and entire ecosystems in the face of growing human populations and their impact on the environment. Brings scientific principles and theory to bear on problems of management for preserving the richness of life on earth. Conservation Biology is an opportunity to apply science to real-world conservation issues. We'll examine conservation challenges and solutions, both locally and around the world. Three hours of seminar/ week. Prerequisites: 50.115; 50.351; 41.105 or consent of the instructor.

50.478 Microbial Physiology -- Dr. Kipe-Nolt. This class studies life processes of microorganisms, including how they maintain homeostasis in response to changing environmental conditions. Examines general similarities as well as significant differences between microbial groups. Covers principles of nutrition and growth, substrate uptake and transport systems. Discussion of energy-yielding metabolism in microorganisms will highlight the diversity of systems. Outlines precursor and macromolecule synthetic pathways and their regulation, with emphasis on industrial applications. Three hours lecture per week. Prerequisites: 50.242, 50.271, 52.116.

50.480/580 Comparative Animal Physiology --Dr. Hansen. This course examines physiological mechanisms as they relate to the diversity of environments in which animals live. Central issues in comparative physiology address adaptive mechanisms related to water balance, energy production, respiration, circulation, temperature, locomotion and sensory perception. Each of these issues is examined in the context of marine, fresh water and terrestrial environments. The course will draw on examples from a wide variety of taxa to emphasize the principles that unify environmental and evolutionary physiology. This course satisfies the physiology core requirement of the BA and BS in Biology degrees when combined with Integrated Physiology Lab (50.479). Three hours of lecture per week. Prerequisites: 50.271 and 52.232 or 52.230.

Saluting Student Achievement



Outstanding Students Named for 2002-2003 academic year

Outstanding Biology Student

Lawrence J. Pryzblick, Jr. graduated in December 2002 with a BA in Biology and BS in Secondary Education in Biology. Larry received Summa Cum Laude recognition, earned an overall GPA of 3.99, and was the top student in both the College of Science and Technology and the College of Professional Studies. Larry is the recipient of a Kozloff Undergraduate Research Award, a Biology/Allied Health Scholarship, a Walter Fike Memorial Scholarship in Biology, and a Kenneth and Mary Betterly Maiers Scholarship. Larry is a member of the Phi Kappa Phi Honor Society and the Kappa Delta Pi Honor Society. He was named to Who's Who Among College Students. Larry had an internship with the PA Geological Soil Survey and conducted several research projects with Dr. Kipe-Nolt where he investigated such topics as bio-solids, composting, and the effects of anaerobic digestion on pig manure odor. He has presented his research at the 2001 annual meeting of the Commonwealth of Pennsylvania biologists and at the annual Campus Student Research and Creative Projects Poster Session. He was the director of the Children's museum in Bloomsburg during summer 2001 and helped to prepare an exhibit called "Life in the Soil." Larry has served as a mentor for University Seminar, a judge for the Health Sciences Symposium, and a tutor for high school students. He has volunteered at White Haven Ministry (a homeless shelter) and is a National Arctic Wildlife Refuge Supporter and Volunteer. Larry plans on pursuing a career as a high school teacher.

Outstanding Allied Health Student

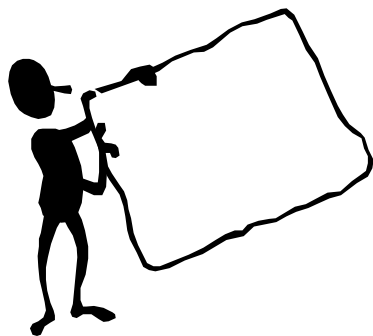
Pamela A. Startzel has a dual major in Medical Imaging & Anthropology and has completed 171 credits! Pam will graduate in May 2003 and has maintained an overall GPA of 3.95. She is also a co-recipient of the outstanding senior Anthropology Student Award. Pam is a member of Lambda Alpha National Collegiate Honors Society for Anthropology and Phi Kappa Phi Honor Society. She holds several awards from the Boy Scouts of America. Pam is certified by the American Registry of Radiologic Technologists (ARRT) in Radiography and Computerized Tomography and is a graduate of Geisinger School of Radiographic Technology. Her medical imaging experience includes employment as a MRI patient coordinator, a CT technologist, and a Diagnostic Radiographic Technologist. She is currently employed as a bone density technologist at an oncologist's office and as the Unit Serving Executive and Learning for Life Coordinator for Columbia Montour Council 504, Boy Scouts of America. As part of her anthropology major, Pam served as an intern with the National Park Service at Gettysburg, PA at the Eisenhower National Historic Site. She has also been active in the Anthropology Club, SSHE Undergraduate Research Conferences, and the Northumberland and Snyder County Historical Societies. She attended training at the National Outdoor Leadership School and is a "Leave No Trace" Master Educator. Pam plans on continuing her education in Bone Densitometry. Her ideal goal is to be able to apply her skills in radiology in the field of archaeology.

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 **Amy Risen** and **Katy Parise**. Amy is a junior who is pursuing a major in biology and a minor in chemistry. Amy works for the chemistry department doing lab prep and is a member of the Chemistry Club. Amy holds an associate's degree in recreation and wildlife management from Hocking College. She is interested in such topics as nutrient cycling, ecological microbiology, and environmental toxicology. Katy Parise is a junior majoring in Biology and is enrolled in the University Honors Program. She is currently assisting Dr. Hranitz with his research on the parentage analysis of collared lizards. Katy is a member of both the biology and marine science clubs. She is a student representative to the Academic Internship Advisory Board. She has been employed with the New Jersey Department of Environmental Protection. Katy plans to attend graduate school in the areas of ecology and evolution.

BAHS Students and Faculty Recognized by College

The first College of Science and Technology spring banquet was held on Tuesday, March 18. **Dr. Carl Hansen** was recognized as an outstanding newer faculty member in biology. **Dr. Joseph Ardizzi** recognized the following 2002-03 inductees of Beta Beta Beta, the biological honor society: **Debbie Kupsho, Christina Lester, Rachel Melnick, Lisa Rosenberry, Jessica Snyder, Elisa Woodby, Jennifer Brightbill, and Brett Siegfried**. The next Tri-Beta Initiation will be held at 5 p.m. on April 24 in 72 HSC. For more information, go to the department's website: <http://departments.bloomu.edu/biology/BBB>



Senior Biology Major Co-authors Paper

Angela Sabol, a senior biology major, has co-authored an article published in the February 21, 2003 issue of the *Journal of Biological Chemistry* entitled "Loss of G protein gamma γ alters behavior and reduces striatal D_1 level and cAMP production." Angela conducted this research in the laboratory of Dr. Janet Robishaw during her summer internship experience at the Weis Research Center, Geisinger Medical Center. Dr. Hansen was Angela's internship supervisor. Angela studied the behavioral phenotypes of gamma γ double knockout mice. These mice are genetically engineered to be homozygous for the deletion of the gamma γ gene. This gene codes for a protein that plays an important role in signal transduction pathways in cells. Congratulations Angela!

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. On March 30, the following students from the Department of Biological and Allied Health Science will be inducted: **Kelly Chernago**, Secondary Education in Biology; **Rebecca Kehler**, Biology; **Pamela Merritt**, Medical Imaging; **Justin Stevens**, Medical Imaging; **Adam Strzempek**, Medical Imaging; and **Deborah Van Horn**, Medical Imaging. Students in the Department of Biological and Allied Health Sciences who are currently members include **Christina Lester**, Medical Technology; **Angela Sabol**, Biology; and **Pamela Startzel**, Medical Imaging.



Good News!



Congratulations to:

Millie Lapos—accepted to the Physician Assistant Program at Lock Haven University

Rachel Melnick—accepted to the Masters program in Plant Pathology at Penn State University.

Joshua Rickards—accepted to the Physician Assistant Program at Hahnemann/Drexel University

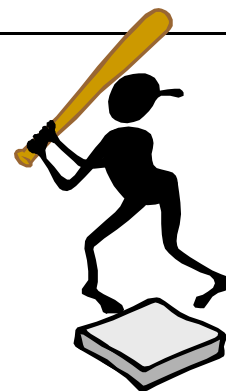
Jade Reyna—accepted into Rehabilitation Science major for physical therapy at the University of Pittsburgh.

Jennifer Bryan—accepted to Lake Erie College of Osteopathic Medicine. Jen was also a first team selection to the 2002-03 All-Pennsylvania State Athletic Conference (All-PSAC) Women's Basketball team. In her BU basketball career, Jen finished 8th all-time in scoring with 1,166 points and sixth in rebounding with 753. She also holds BU's single-season and career marks for most free throws made with totals of 141 and 416, respectively. Jen was last year's PSAC East Player of the Year and a first team All-PSAC choice. Congratulations Jen!

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!

Congratulations scholar athletes!

Three 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 **Elyce Morring**, a Medical Imaging major and member of the Field Hockey team; **Eric Steffen**, a Biology major and Football player, and **Rebecca Kehler**, a biology major and Softball player.



Things to Do This Summer....

What are you going to do this summer? The summer provides great opportunities to explore the diverse opportunities offered in biological and allied health sciences. Summer is a wonderful time to conduct research, do an internship, or take some classes to catch up or get ahead!



Department of BAHS Summer Offerings

Session 1 (5/27 – 7/03)

(09.230) Human Sexuality
(50.100) Cells, Genes and Molecules
(50.173) Anatomy and Physiology I
(50.390) Research in Biology I
(50.391) Research in Biology II
(50.490) Internship in Biology/Allied Health Sciences
(50.493) Honors Independent Study
(50.494) Honors Independent Study 2

Session 2 (6/16 – 7/25)

(50.101) Human Biology

Session 3 (7/7 – 8/15)

(09.230) Human Sexuality
(50.102) Ecology and Evolution
(50.174) Anatomy and Physiology II
(50.390) Research in Biology I
(50.391) Research in Biology II
(50.490) Internship in Biology/Allied Health Sciences
(50.493) Honors Independent Study
(50.494) Honors Independent Study 2

Session 5 (6/16 – 7/03)

(50.100) Cells, Genes and Molecules
(50.457) Entomology

Session 6 (7/7 – 7/25)

(50.252) Field Zoology









Session 8 5/27 – 8/15



(50.390) Research in Biology I
(50.490) Internship in Biology/Allied Health Sciences



The following chemistry classes are among those offered at BU this summer:









- Introductory Chemistry (50.101)
- Fundamentals of Inorganic Chemistry (52.115)
- Chemical Principles and Measurements (52.116)
- Organic Chemistry I (50.231)
- Organic Chemistry II (50.232)









SUMMER FIELD COURSES



       



 **(50.252) Field Zoology (3 credits) Session 6: 7/7 to 7/25. Dr. Hranitz. Class meets Monday - Thursday from 9:50 am to 4:00 pm.** 









 Field studies of animals (emphasis on vertebrates) as an introduction to taxonomy, field identification, natural history, and field observation techniques. We will take daily field trips to numerous in-state and out-of-state natural areas, featuring a four-day field trip to Wallops Island (an additional student cost). As a part of field activities, students will research three topics in field techniques and share the results with the class. The first topic area requires sharing the techniques for field identification of a chosen taxonomic group. The two field-technique topic areas require that students use two different field research techniques to study an animal of their choice and report the experience to the class. 









       









       









 **(50.457/557) Entomology (3 credits) Session 5: 6/16—7/03. Dr. Wassmer. Class meets Monday—Thursday from 9:50 to 4:00 p.m.** 









 Bugs R Us! Did you ever wonder what that thing was crawling on your shirt or eating your frosted flakes? If so, join us in Entomology (50.457) this summer. Lecture material will include the physiology, behavior, morphology, and evolution of insects. In lab, you will collect and present insects (and keep your collection at the end of summer). Added bonus - You get to design and conduct a project, this might even included doing brain surgery on cockroaches. Bring your sunscreen and bug repellent. 

Summer Happenings at the Marine Science Center



Summer courses offered at the Wallops Island Marine Science Center aren't just for wet-heads! You don't have to be in the Marine Science Program to register for courses at the Marine Science Center. Most courses offered at the Marine Science Center count as Biology Electives for students pursuing a B.S. or B.A. in Biology. Many courses offered at the Marine Science Center appeal to students whose primary interests are in terrestrial or aquatic biology. Ornithology (55-345), Ichthyology (55-343), and Scanning Electron Microscopy, which are all offered this coming summer, are designed to encompass the interests of field biologists of all persuasions. Courses like Behavioral Ecology, Evolutionary Ecology, and Methods in Ecology, which will be offered in upcoming summers, are broadly based courses which provide practical training of value to any field-oriented biologist. Many Bloomsburg University students have used the Marine Science Center as an affordable environmental field station available to enhance their studies on campus.

Courses for Summer 2003 at the Wallops Island Marine Science Center are filling fast! Although summer registration is only just now opening at Bloomsburg University, registrations have been accumulating at the Marine Science Center for the last two months. Several popular courses have already filled. If you are interested in taking a field course at the Marine Science Center this summer, please see Dr. Klinger (HSC 05) as soon as possible. Students should note that the course listings for Marine Science (Department Code 55) in the Summer College 2003 booklet are confusing and in some cases incorrect. See Dr. Klinger for information about specific course offerings.

We're Having a Sale! The Marine Science Consortium is pleased to announce reduced Basic Station Fees for students enrolling for 3 or more courses at the Wallops Island Marine Science Center during the 2003 College Summer Program. Students registering for 3 courses during the 2003 College Summer Program will receive a 1/3 reduction in Basic Station Fees for the third course. Students registering for 4 courses during the 2003 College Summer Program will receive a 2/3 reduction in Basic Station Fees for the fourth course. Come and stay with us this summer. A good deal has gotten even better!

Coral Reef Ecology Scholarships! The Marine Science Consortium provides a wonderful opportunity for students to study the Coral Reefs of the Caribbean. In the past, participation in this course has been difficult for many students because of the cost of traveling to the western Caribbean. The Marine Science Consortium is delighted to announce that a Scholarship has been established to help student participate in Coral Reef Ecology. During the Summer 2003, 4 competitive scholarships of \$750 each will be awarded to students enrolling in Coral Reef Ecology. See Dr. Klinger (HSC 05) for details on the application process.

Work-study positions are available for students taking courses at the Marine Science Center. Each summer, the Marine Science Center employs several students as Resident Assistants. Resident Assistants receive a substantial reduction in fees for room and board while studying at the Marine Science Center. See Dr. Klinger for information about applying to be a Resident Assistant.



Summer Research Opportunities



A variety of summer research opportunities for undergraduates and masters students are available at The Summer Science Academy at Vanderbilt University, Nashville, TN. Possible areas of research include cell and molecular biology, vascular biology, pharmacology, biomedical science, neuroscience, and microbiology. The program is open to students who have completed the first two years of a biology, biochemistry or chemistry major and have a minimum GPA of 3.0. Stipends range from \$2300 to \$2700. For more information or to apply see http://medschool.mc.Vanderbilt.edu/summer_academy

Pre-Professional Committee Updates

Open House: University of Medicine and Dentistry of New Jersey—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 25 April 2003 from 12:00 PM to 4:30 PM. There will be an informative orientation 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. Mark Melnychuk or register on-line at <http://som.umdj.edu> The deadline for registration is Fri, April 18, 2003.



Temple Summer Program

Temple University Schools of Dentistry and Medicine invite students to apply for a 7 week summer program designed to facilitate the entry of disadvantaged and under represented minority students into dentistry and medicine. The Future Dentists of America and Future Physicians of America Programs run from 9 June to 25 July, 2003. The primary focus for the programs is preparation for the DAT and MCAT. Students will attend several clinical conferences and workshops and gain classroom exposure to gross anatomy, physiology, biology and histology. FDA participants will perform wax carvings of teeth and manipulate a variety of dental materials through a mini course in restorative dentistry. The programs are competitive. Interested students should submit an application by 28 March 2003. For applications, contact Dr. Joseph Ardizzi, 74N1 HSC.

Hurry to Register for April 26 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. Scores are provided in four categories: biological sciences, verbal reasoning, physical sciences, and writing. The exam is typically taken in the spring of the junior year or the summer between the junior and senior year. The exam runs about nine and one-half hours. **The next exam is scheduled for APRIL 26, 2003. The late registration deadline is April 4.** The summer MCAT is scheduled for August 16. The registration deadline is July 11. To register go to: <http://www.aamc.org/students/mcat/start.htm>

Allied Health Updates

Visits by Affiliates!

- Don Sharples from Thomas Jefferson University will visit BU on Weds, April 9th at 2:00 p.m. in 145 Hartline to discuss their programs in allied health sciences. Students who are interested in Physical Therapy, Occupational Therapy, and Medical Imaging are encouraged to attend.
- Johns Hopkins Hospital Schools of Medical Imaging will present a session entitled *Medical Imaging—The State of the Art* on Friday, April 4 at 10 a.m. in Ballroom 1, Kehr Union in conjunction with the Health Sciences Symposium. Mr. Jay Rhine, Program Director, will be on hand, as well as several BU students who are currently doing their clinical experience at Johns Hopkins. All interested students are encouraged to attend!

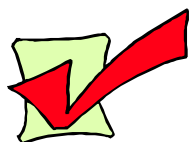


Health Sciences Symposium

The 12th annual health sciences symposium is slated for April 3 and 4, 2003 at Kehr Union. This year's theme is, "Juggling Life's Stress: Creative Silliness." and will feature Steve Allen, Jr., son of comedian Steve Allen and a board certified family physician. Dr. Allen will take a lighthearted look at stress and emphasize the value of play and laughter in both reducing and preventing the body's negative responses to stress. Dr. Allen will present the keynote address on Thursday, April 3, 2003, 7:30 p.m. in Kehr Ballroom and a workshop in Kehr Ballroom on Friday, April 4, 2003 at 8:30 a.m. The symposium also will feature posters and presentations by graduate students, undergraduates, and faculty, and a Wellness fair. Mark your calendars!

Spring into Health Program Series

The last installment of the Health Sciences Learning Community's *Spring into Health Program Series* will be held Tuesday, April 8 at 9:00 p.m. in Elwell Lobby. Join **Dr. Margaret Till**, Department of Biological and Allied Health Sciences, for *Marijuana: Friend or Foe*. Stop in to learn more about and discuss the recent scientific evidence regarding marijuana use. Free Food: mozzarella sticks, chicken fingers, and soda!



Check it Out

Scholarships for Secondary Education in Biology Majors

The National Science Foundation is providing 25 merit-based scholarships to students under a statewide program called the Collaborative for Excellence in Teacher Preparation (CETP-PA). Scholarships will be awarded to students (freshman through graduate students) in State System Universities who are currently enrolled in secondary education programs in math or any of the sciences. The award is \$2,000 per semester. The funds are renewable for a second semester (pending review) and are paid directly to BU for educational expenses. Applicants in secondary education must have a 3.5 GPA. Applications for Fall 2003 scholarships may be obtained from Dr. Emeric Schultz, Director of the Honors Program (Luzerne Hall) and are due **April 8, 2003**. Scholarship recipients will be expected to work with our local math and science center, to assist with recruiting efforts, to act as a peer mentor, and to participate in state teaching conferences.

Marine Science Club News



The Marine Science Club is busy working on an interactive exhibit for the Bloomsburg's Children's Museum. The theme of this year's museum is sound and the club's exhibit will focus on sounds made by whales, dolphins, seals, sea lions, and seagulls. During April, trips are planned to the Mystic seaport and aquarium in Connecticut and to the Marine Science Consortium at Wallops Island, Virginia. To find out more about Marine Science Club activities, contact **Brad Landis**, President; **Kevin Brace**, Vice President; **Katy Parise**, Secretary; or **Ben Day**, Treasurer.

Biology Club News

The Biology Club is finishing up its research for the Bloomsburg Children's Museum Exhibit. Now that the weather is warming up, the group will focus on its trip to the Philadelphia Zoo and perhaps a hike to Ricketts Glen. The group will begin planning for the second Biology Banquet. The spring semester officers are: **David Hakim**, President; **Brett Siegfried**, Vice-President; **Jennifer Bryan**, Secretary.



News You Can Use



- Last Day to Withdraw from a Course: Tuesday, April 2, 2003 at 4:30 p.m.
 - Deadline to submit an application and proposal for Undergraduate Research in Biology:
 - For Summer: - Last day of classes in spring semester
 - For Fall: - Last day of classes in spring semester
 - Deadline to sign-up for Internships:
 - For Summer: 2nd day of classes of chosen summer session:
 - For Fall: 5th day of classes, fall semester
- NOTE: All internship sites must have an affiliation with the University. Check with the Internship Office, 236 SSC, at least one month before the deadline.
- Reminder: Please check the bulletin board next to the elevator on the green floor (called News, Notices and Nonsense)

Graduating Seniors

Do you have a minor? No, not a miner, a minor.

If yes, please check with the department in which the minor resides to determine if the department certified the minor to the Registrar. The minor must be certified to appear on your transcript.

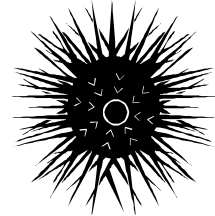
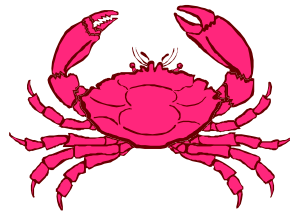
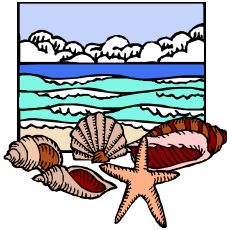


New Technology!



The Department of Biological and Allied Health Sciences has acquired new computers and software with funding from the Student Technology fee. Computers will be available in 149 HSC for use in Concepts in Biology I and II, in 114 HSC for use in Anatomy and Physiology I and II, and in 67 and 111 for use by undergraduate and graduate research students. Software titles in genetics, neurophysiology, cardiovascular physiology, and renal physiology have been purchased for Concepts in Biology I and Anatomy and Physiology. A new color laser printer has been installed in 145 HSC for use in Integrated Physiology lab.

Featuring Faculty Research Meet Dr. Thomas Klinger....



My area of expertise is marine biology, with a research focus on the functional aspects of invertebrate zoology. Most of my research revolves around the interface of physiology, behavior, and ecology. I have most recently been investigating manufactured feeds suitable for mariculture of sea urchins. These studies have encompassed both development of a foundation for the aquaculture of sea urchins and sea cucumbers as well as studies in fisheries ecology. I have had a continuing collaboration with faculty from the University of Queensland in a study of the community ecology of the Great Barrier Reef. My contribution to this study has examined resource utilization and niche partitioning among sea cucumbers inhabiting reef flats and lagoons. Other on-going projects include studies of digestion in echinoderms and an investigation of physiological adaptations of digestive enzyme complements of Antarctic Echinoderms. Many of the students working in my laboratory have contributed to studies of the behavior, physiology, and ecology of sea urchins and sea cucumbers. Other students working in my laboratory have pursued interests in other areas of marine science. Students have investigated areas as diverse as the role of human disturbance in structuring marine communities; effects of pollution on growth, development, and function of marine animals; nutrient allocations during regeneration; competition among cooccurring species of fiddler crabs; population structure in island habitats; and recruitment, growth and gene flow among isolated populations of Pacific barnacles.

Featuring a BAHS ALUMNUS Meet Dr. Bill Hicks....

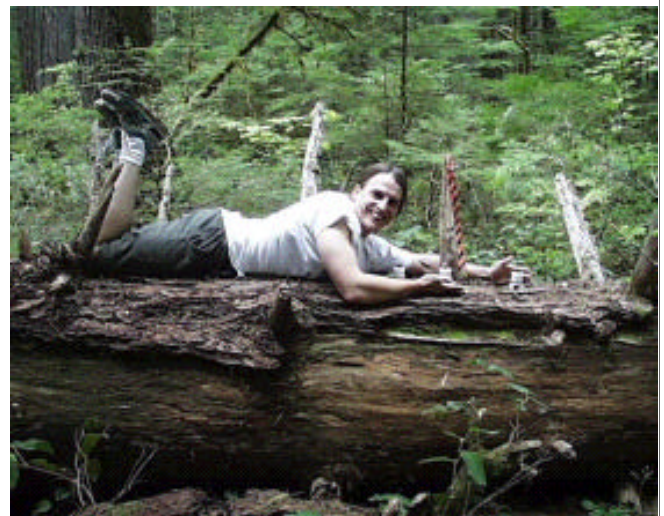


Bill Hicks (William T. Hicks, Ph.D.), is currently an assistant professor in the Department of Biological Sciences at Montana Tech of the University of Montana, teaching courses in biodiversity, evolution, and microbiology. A 1993 alumnus of our Department, Bill carried out two mycological research projects with Dr. Chamuris.

Bill graduated from Bloomsburg University Summa Cum Laude, with a cumulative GPA of 4.0. He has received numerous academic honors, including the Outstanding Student in Biology at Bloomsburg University for the 1992-1993 academic year. He received his Ph.D. in Forest Science from Oregon State University in 2000 and an M.S. in Botany from Miami University.

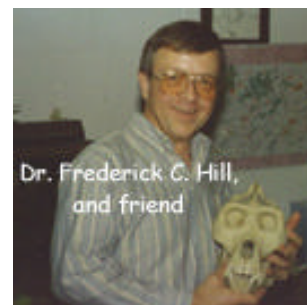
Bill's research interests are ecosystem ecology, nitrogen and carbon cycling, nitrogen fixation, and woody debris. He has published five articles in refereed journals and participated in numerous symposia and professional meetings. He recently secured a grant for \$90,000 from the USDA to develop a method to predict regional patterns of biological nitrogen fixation.

We are all very proud of Bill and wish him continued success.



Faculty Feature: Dr. Fred Hill

Dr. Fred Hill, professor of Biological and Allied Sciences, plans to retire from BU in May 2003. *BioSynthesis* recently sat down with Dr. Hill to discuss his career at BU.



BioSynthesis: How long have you been at BU?

Dr. Hill: I have been here for 28 years. I started at BU in 1975.

BioSynthesis: What courses have you taught?

Dr. Hill: I have a broad background in biology and have really enjoyed teaching a diverse variety of courses. I have been associated with about 25 different classes over my career! Here's a partial listing: Limnology, Field Zoology, Ornithology, Vertebrate Zoology, Embryology, Comparative Anatomy, Systematic Zoology, Marine Biology, Anatomy and Physiology of the Head, Neck, and Thorax, Anatomy and Physiology I and II, Biology I and II, labs in General Zoology and General Biology, Neo-tropical Biology. In particular, I really identify with Anatomy and Physiology of the Head Neck and Thorax. I initiated the class and developed the course materials.

BioSynthesis: What has changed over the past 28 years?

Dr. Hill: When I first came to BU, research was discouraged. It wasn't even discussed during my interview!

BioSynthesis: What are you the most proud of?

Dr. Hill: My positive interactions with my students. I have a great deal of empathy for my students and have always tried to understand where they are coming from and have tried to motivate them in any way that would work. I have always placed my students' welfare above anything else that I did as a professional. I would always do whatever it took to make things work in the department.

BioSynthesis: What will you miss?

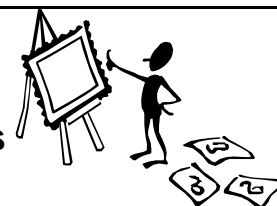
Dr. Hill: I will definitely miss the camaraderie with the faculty and the students. I have always felt that laughter was the best medicine. I'm happy to hear that in the last year of my employment that the Health Science Symposium is an attempt to validate that. I would hope that when I leave that people will remember my smile and (sometimes) absurd jokes!

BioSynthesis: What are your future plans?

Dr. Hill: I have lots of hobbies. I really enjoy woodworking and woodturning and have a number of creative projects planned. I plan on doing some re-building projects on my house. I also will do some farming and help my wife Val with her quilting business. I enjoy biking and would love to eventually take a bike tour of New Zealand.

We will miss you Dr. Hill. Stay in touch!

Opportunities for Students: Sharing Your Research



• BU's annual Student Research and Other Creative Projects Poster Session

BU celebrates student research and other creative activities at its annual poster session at Multipurpose Room A, Kehr Union on April 22 and 23, 2003. The event will kick off on April 22 at 1 p.m. with welcoming remarks by President Kozloff and Dr. Schloss followed by an informal reception. Application packets containing registration forms and guidelines for poster preparation may be obtained from the Office of Research and Sponsored Programs, 212 Centennial Hall. Completed applications are due by 4 p.m. on April 11, 2003. This is a wonderful opportunity to share what you have been working on with the entire campus community! Let's see a great turnout of BAHS students!

• Annual CPUB Meeting on April 11-13

The Commonwealth of Pennsylvania University Biologists (CPUB) is an organization of biology faculty from the fourteen universities in the State System of Higher Education. CPUB holds annual meetings to highlight student and faculty research. This year's CPUB meeting will be held April 11-13, 2003 at Shippensburg University. This is a good venue to present the results of your undergraduate or graduate research projects! See Dr. Williams for information.



THE BU MASTERS PROGRAM

The Department of Biological and Allied Health Sciences offers both a Master 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).

Cheers!

Congratulations go out to graduate students **Soniya Sinha** and **Joseph Bernardo**. Both successfully defended their thesis research.

- Soniya's thesis defense was entitled "An *in situ* hybridization study of heterotrimeric G proteins in zebrafish." Soniya's thesis advisor was Dr. Hansen. Soniya is currently in the Ph.D. program in Genetics at Penn State University School of Medicine in Hershey, PA.
- Joe's thesis defense was entitled "The use of fatty acid profiles to study microbial diversity in agricultural soils where different fertility treatments have been applied." Joe's thesis advisor was Dr. Kipe-Nolt. Joe is employed by Merck Pharmaceuticals.

Journal Club Updates

- **Michelle Bradley** highlighted some of the recent controversy surrounding the application of bio-solids. It was a lively and informative discussion.
- **Khalique Khani** updated the group on the latest in cancer genetics and related therapies. Thanks Michelle and Khalique!
- The next journal club is planned for Friday, April 4. Thanks to **Justin Reis** for organizing Journal Club!

Of note...

- **Jennifer Venditti** has been accepted into the Ph.D. program in molecular biology at Lehigh University. Congratulations Jen! Jen is currently collecting data for her thesis which examines antibody profiles and white blood cell counts in college students involved in exercise programs of varying intensities.
- Undergraduates **Michael Kaminsky** and **Eric Horstick**, graduate student **Soniya Sinha** and Dr. Carl Hansen of the Department of Biological and Allied Health Sciences attended the 2003 Genetic Symposium entitled "*Genetics and Functional Genomics in Model Organisms*" at the Pennsylvania State University College of Medicine, Hershey, PA. Soniya Sinha, Carl Hansen and colleagues from the Weis Center for Research at Geisinger presented a poster entitled "*Developmental role of heterotrimeric G proteins in zebra fish.*" Soniya Sinha along with collaborators at Hershey also presented a poster entitled "*Zebrafish as a vertebrate model system to study genomic instability, cell differentiation and cancer.*"

Upcoming Graduate Course Offerings

Summer:

(50.457/557) Entomology (Session 5, June 16 to July 4, 2003). See Page 6 in this issue for more details!

Fall Semester:

(50.480/580) Comparative Animal Physiology
(50.432/532) Microbial and Molecular Genetics
(50.451/551) Conservation Biology
(50.478) Microbial Physiology
(50.479) Integrated Physiology Lab

Reminder:

Registration for Penn State's *Molecular Biology Workshop For State Universities of Pennsylvania* is due April 30, 2003. This free, 2 week workshop for graduate students and faculty offers hands-on experience with a variety of molecular techniques. Application forms and additional information may be obtained at the Workshop's Website at <http://www.lsc.psu.edu/techniques/workshop2.html>.