DEPARTMENT OF BIOLOGICAL SCIENCES,
UIC COLLEGE OF LIBERAL ARTS AND SCIENCES,
845 WEST TAYLOR STREET (MC 066),
CHICAGO IL 60607

Biological Sciences Undergraduate Newsletter

Volume 1, Issue 1 Spring 2007

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Contributors:

Dr. Brian Kay
Dr. Howard Buhse
Dr. Joel Brown
Dr. Steven Kelso
Erin J Vander Vliet

The Boss' Corner

Dear Current and Former Students,

In response to a request from alumni of the Department of Biological Sciences, Ms. Erin Vander Vliet has worked hard to organize this wonderful publication. I hope that you enjoy it and future updates we envision preparing on a regular basis.

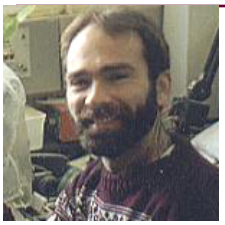
Our major still continues to grow at UIC. Currently the department has approximately 1600 undergraduate majors, and co-mentors ~350 biochemistry majors with the Department of Chemistry. A large proportion of both majors are pre-health, and plan to apply to medical, dental, nursing, and pharmacy school. In addition, at the moment, there are 110 graduate students within the department. The faculty has undergone significant changes in its ranks over the past few years. I joined the Department as a Professor and Head in November 2006, after having spent time at Argonne National Laboratory, University of Wisconsin-Madison, and the UNC-CH. We have also successfully recruited three new faculty: Professors Tian Wang, Boris Igic, and David Wise from Stanford University, Cornell University, and University of Kentucky, respectively. After 25 years of service, Dr. Brian Nichols will be retiring at the end of this academic year.

You are welcome to stop by my office and learn more about the exciting things going on in the Department, or you can visit our remodeled website: http://www.uic.edu/depts/bios/. If you have suggestions for topics in future newsletters, please write an email (bkay@uic.edu) when you have time.

Sincerely yours,

Brian K. Kay

Brian Kay, Ph.D.
Professor & Head



Faculty Spotlight : Dr. Joel Brown

I have had the privilege of serving as a Biology faculty member since 1987. I teach, train graduate students and conduct research.

Teaching is fun and rewarding. In teaching I get to be a perpetual student. In Population Ecology (530) the graduate students and intrepid few among the undergrads wake up to calculus. In BIOS 331 (Ecology Lab), what fun to share with the students Nature's lab, my lab, the outdoors. BIOS 230 and 430 offer the standard lecture class venue. I approach lecturing as 33% information, 33% challenges to set ways of thinking, and 33% entertainment – humility comes knocking when not one of 120 students laughs at my joke. The end of the year sees the Biology Colloquium out-of-state field trip: five days of capsizing canoes, good and bad cooking, poison ivy, wrestling wildlife, and the joy of learning, camaraderie, and new experiences.

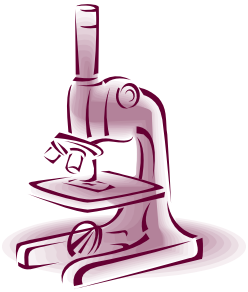
My graduate students form my lab family. Unlike my two daughters that are doomed to partially look like me (thank god my genes are recessive!), my graduate students can hale from anywhere – Nepal, Jordan, Argentina and the USA are current places of origin. Places and animals shared by the lab include snow leopards of the Himalayas, squirrels (my personal favorite) in Chicago, and many things from aardvarks (South Africa) to zebras (Brookfield zoo), with samango monkeys, red duiker, three-banded armadillos and guinea fowls tossed in. Scientists from Sweden, Israel, South Africa, Chicago, and the Midewin National Grassland form the lab's valuable extended

family. A fascination with how evolution by natural selection acts on behaviors drives the research. We examine how these behaviors shape and reveal the species' ecologies and communities.

My own research alternates between the computer and the outdoors. I use game theory (the mathematics for solving conflicts of interest) to model behaviors and evolution, I then run off to Israel to study such things as the 'ecology of fear' with gerbils inhabiting seed-filled and predator-filled sand dunes. How should a clever gerbil behave if it knows that the owls know that it knows …..? In my research, we delve into basic questions of evolution and ecology and we apply this work to questions of managing valued and nuisance animals alike.

Getting to UIC from my natal grounds of Oakland, California seems sensible enough in hindsight but like most lives it was a tangle of serendipity and accident. My K-12 years were fairly evenly split between San Diego, Zimbabwe, Orange County, and Zimbabwe again. Pomona College is where I cycled through Chemistry, Economics and finally Zoology as majors. What a geek – straight A's in math, physics and chemistry; and nary a B or better in my Biology classes. For me nature was always a source of refuge, mischief, wonderment and fun, whether raising tadpoles in California or riding horses across the endless savanna of Africa. It was in College that I learned that this passion could go from being a pastime to a paycheck. I am still amazed that I am paid to teach, learn, study and play with animals.

But, please don't tell this to the boss!



The roots of education are bitter, but the fruit is sweet. - Aristotle

Career spotlight : Environmental Scientist & Hydrologist

Environmental scientists and hydrologists often split their work between offices, laboratories, and field sites. Federal, State, and local governments employ over half of all environmental scientists and hydrologists. Although a bachelor's degree in an earth science is adequate for a few entry-level jobs, employers increasingly prefer a master's degree; a Ph.D. degree is required for most high-level research / college teaching.

Nature of the Work:

Environmental scientists and hydrologists use their knowledge of the physical makeup and history of the Earth to protect the environment, study the properties of underground and surface waters, locate water and energy resources, predict water-related geologic hazards, and offer environmental site assessments and advice on indoor air quality and hazardous-waste-site remediation. Environmental scientists conduct research to identify and abate or eliminate sources of pollutants or hazards that affect people, wildlife, and their environments. These workers analyze and report measurements or observations of air, food, water, soil, and other sources and make recommendations on how best to clean and preserve the environment. Many environmental scientists do work and have training that is similar to other physical or life scientists, but is applied to environmental areas. Hydrologists study the quantity, distribution, circulation, and physical properties of underground and surface waters. Often, they specialize in either underground water or surface water. They examine the form and intensity of precipitation, its rate of infiltration into the soil, its movement through the earth, and its return to the ocean and atmosphere. The work hydrologists do is particularly important in flood control and environmental preservation, including ground-water decontamination.

Job Out Look:

Employment of environmental scientists is expected to grow about as fast as the average for all occupations through 2014. Job growth for environmental scientists & hydrologists should be strongest at private-sector consulting firms. Demand for environmental scientists and hydrologists will be spurred largely by public policy, which will oblige companies and organizations to comply with complex environmental laws & regulations, particularly those regarding ground-water decontamination, clean air, and flood control.

Occupational Outlook Handbook (OOH), 2006-07 Edition

Alumni Spotlight: What are they doing now?

We are fortunate to profile our Spring 2007 Awards Day presenter: Dr. John Maciejewski. Dr. Maciejewski began his undergraduate career at UIC in 1988, when he enrolled in the College of Liberal Arts and Sciences as an undergraduate Biological Sciences major. He earned a Bachelor of Science (B.S.) degree in 1990. He continued his education by completing an advanced degree in Cell and Developmental Biology at the Graduate Level. His thesis work was conducted in the field of ciliate molecular biology, under the direction of Dr. Howard E. Buhse, Jr. He earned a Master of Science degree in 1995, for the molecular characterization of a class of calcium-binding proteins in the ciliated protozoan, Vorticella. He earned his Doctor of Philosophy (Ph.D.) degree in 1997, for his molecular cloning studies of spasmin, an EF-hand calcium-binding protein in Vorticella.

He matriculated to The Chicago Medical School, in pursuit of a professional degree. He earned his Doctor of Medicine (M.D.) degree in June of 2001, and returned to UIC to serve his residency in Internal Medicine at the University of Illinois Medical Center and in 2004 was Board-Certified. He subsequently accepted a fellowship position from the UIC Section of Hematology/Oncology, where he has been receiving sub-specialty training in medical oncology, in addition to benign and malignant hematology. His clinical experiences with hematopoietic stem cell transplant patients inspired his current research in the field of molecular immunology.

Advisors Corner

- **Spring 2007 Awards Day**
  April 19th at 3pm in SEL room 4289
- Walk-in hours are only available on Tuesday, please call 312-996-2211 to set up an appointment
- Bios 443 counts towards the laboratory requirement without Bios 442
- There are four LAS Pre-health advisors located in University Hall on the 3rd floor
- We do not have waiting lists for our courses
- Biological Sciences minors are declared at LAS advising located in University Hall
- If the course is full but it looks as though there are open seats, first check to see if the course is cross listed before contacting the department
- For additional information visit us at our website: http://www.uic.edu/depts/bios/

Advising Appointments

Jason Cashmore (3266 SES) and Erin Vander Vliet (3276 SES)

Scheduled Appointments:
Monday, Wednesday, Thursday and Friday
9:30 am - 12:00p
1:00pm - 3:30p

Walk-In Appointments:
Every Tuesday
9:30 am - 12:00p
1:00pm - 3:30p

Notes from Neuroscience

In the past two years, the Biology Department has participated with faculty from Psychology and Philosophy in offering a new BS in Neuroscience. Dr. Steven Kelso is the Director of Undergraduate Studies in Neuroscience and is available to assist students who wish to declare the major. Please contact Dr. Kelso at skelso@uic.edu to set up an appointment to review your credits and to plan your path to graduation with a degree in Neuroscience.

There is a growing need to train students in neuroscience at the undergraduate level. We have had about 8 students graduate in the last two semesters and expect this number to continue to grow. A bachelor's degree in neuroscience provides the background for future graduate study and/or the study of medicine. Currently the University of Illinois at Chicago is the only college or university in Illinois that offers a major in neuroscience. For more Information please visit the Neuroscience website at www.uic.edu/las/LIN which gives additional information on the curriculum, the faculty involved and information about other associated events.

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Chicago IL 60607

UIC Department of Biological Sciences occupies space in three campus locations:
Science & Engineering South (SES), Science and Engineering Laboratories (SEL), and the Molecular Biology Research Building (MBRB)

http://www.uic.edu/depts/bios/ungradstudy.shtml

Honors College Tutoring Program

Honors College Tutoring is a volunteer tutoring service that takes place in the Honors College Tutoring Room. It is designed as a walk-in service to serve all UIC students throughout the campus with one-on-one academic help in a particular class. A schedule of the courses and the days and times those courses are tutored is published on the Honors College web page: http://www.hc.uic.edu; hard copies are available in the lobby of the Honors College (103 BH)

- Tutoring takes place Monday through Friday, between the hours of 9 a.m. to 4 p.m.
- Tutoring takes place on the second floor of Burnham Hall in Room 220 BH.
- Qualified Honors College students are available to help you in almost every subject. Check the schedule of classes & the times they are tutored.

Departmental News

Professor Brian Nichols is retiring at the end of the summer session 2007. Before joining our faculty, he completed his doctorate degree at the University of Iowa and was a postdoc at Stanford University. He was promoted to Associate professor in 1985 and Professor in 1990. Dr. Nichols is a noted teacher, scholar and colleague. He taught graduate and undergraduate courses including Prokaryotic Molecular Biology which he helped to develop, Biochemistry and Genetics. He has trained many PhD students and served on innumerable committees within the Department and the Laboratory for Molecular and Developmental Biology. Dr. Nichols has also served on many thesis examining and defense committees. As a research scholar he is highly respected for his ground breaking studies elucidating metabolic pathways of prokaryotes. This is evidenced by his many publications, invitations to speak and continuous federal support. While he is an expert biochemist and molecular biologist, he has broader interests which include the regulation and evolution of metabolic pathways. There are several "Tales from the Crypt" or "lab lore" stories to tell about Brian. One of the more note worthy was the time Brian poured a huge number of plates containing minimal agar and each supplemented with a different amino acid in order to determine which plate or plates would support growth of his mutant beasts. He neglected to label them and the next day when he came into work he could not remember which one was which. His solution was to make up separate stocks of the amino acids and taste each one followed by licking each plate (YUK) in turn to determine their amino acid content. Unfortunately, all the plates tasted the same-in his words "bad" but at least he tried and as the astounded graduate students said afterward-"(Dr. Nichols) was more ingenious than all of us put together!" We are pleased to add that Brian will continue to have his presence felt in the Department as Professor Emeritus.

Colloquium

The UIC Biology Colloquium (BCQ) is an interactive course sponsored by the Department of Biological Sciences (listed as Bios 196).

As a student-run class for individuals interested in biology, BCQ provides an overview of biology and the diversity of biological career opportunities, a place to meet fellow students with similar interests in a comfortable and stimulating atmosphere and a helpful resource for information concerning research opportunities and future coursework. Two faculty advisors are also on hand to assist with student communication. This is a great way to make a REAL connection with a faculty member.

Science & Engineering South (SES) 3360 Off-campus : (312) 996-3884 On-campus : x6-3884
http://www.uic.edu/depts/bios/bcq/index.htm