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

Biological Sciences Newsletter

Volume 1, Issue 2 Summer 2007

Inside this issue:

The Boss' Corner

The other day, I heard a joke from Chancellor Sylvia Manning that resonated with me. She said "that over the years, she always knew there are two seasons in Chicago: winter and road construction. Now, she realizes there is a third: hand-shaking." Yes, we are in hand-shaking season with Departmental and campus award ceremonies honoring outstanding undergraduates, graduate students, faculty, and staff. Last week, the Department honored over one hundred undergraduate biology, biochemistry, and neuroscience majors for their high GPAs and remarkable performances in our classes. Later this week, we will be recognizing the superb performances by our graduate students in the field, laboratory, and classroom. Of course, the culmination will be the commencement ceremonies of Honors College and the College of Liberal Arts and Sciences in early May. I congratulate all of you for your hard work, and look forward to shaking your hand (with my soon to be well- developed arm).

Sincerely yours,

Brian K. Kay

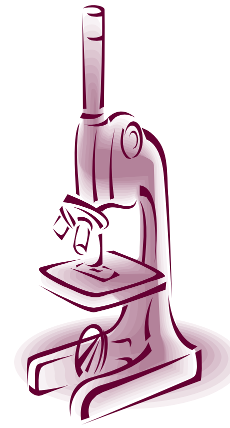
Brian Kay, Ph.D.

Faculty Spotlight : Dr. Howard Buhse, Jr.

My arrival at UIC in the Fall of 1965 from the North side of Chicago is a story in itself. At Grinnell College I earned an AB, then a PhD in Zoology at University of Iowa. Following a post doctorial stint at the Upstate Medical Center in Syracuse, NY, I came to the Circle Campus of the University of Illinois, interviewed, and got the job. I have been a faculty member in the department for over 40 years. My first assignment was as a glorified TA in Dr. Shomay's Comparative Anatomy (CA) class. It was poetic justice because, as biology major at Grinnell College, I had to repeat CA because my non attention to details produced low grades. As they say, the third time is the charm and I finally mastered the material enough to teach the lab. After that I was trusted more and allowed to teach a course in Protozoology. This was neat because I got to use what I had learned during my doctoral studies. The course included frequent trips to the swamps of Tinley Park to collect protozoa (lots of dirty water) and bring them back to the laboratory for study. I also taught the freshman Introductory Cell Biology course. In the early days, we lectured once a week and taught part of the laboratory course ourselves as the conventional wisdom in those days stated that real science took place only in the laboratory. In order to teach the laboratory, we wrote weekly lab exercises and copied them by Verifax machine. With this technology one produced a TYPED template on specialized forms (no Xerox then), attached the inked template to a drum and simply turned a handle on the machine, thus mass producing thousands of copies to distribute to the students I've co-taught Developmental Biology and most recently shared teaching responsibilities of Cell Biology. I've also had the privilege of serving the Department in various capacities including Associate Head and recently a brief term as Interim Department Head. During my research career, I've been associated with many wonderful and productive students and colleagues. We've studied cell differentiation in *Tetrahymena vorax:* given the right circumstances, these cells morph into large mouthed carnivorous cells called macrostomes. Although we have determined some of the molecular mechanisms of differentiation, the problem continues to intrigue the lab. We have also studied the fauna of the termite *Reticulitermes flavipes*. In those days, termites ordered from Mississippi arrived in 50 gallon garbage cans and had to be picked up at O'Hare airport. One night such a colony produced alates (winged mating forms) that escaped and flitted around the lab. Thank goodness we lived in cement buildings.

I've also had the privilege of working with Dr. Suzanne McCutcheon, a Research Assistant Professor. She is studying the properties of a unique contractile system in *Vorticella convallaria* that does not require ATP. Dr. McCutcheon has cloned and sequenced six genes coding for calcium-binding proteins involved in their contraction.

My position as a faculty member of the Department of Biological Sciences at UIC brought me back home with the Cubs, White Sox, Bulls, and the Bears. I can't imagine a better job than teaching, administration and playing with the "wee beasties" in the laboratory.



Accumulate learning by study, understand what you learn by questioning,

- Ming jiao, Jiufeng

Career spotlight : Geneticist

Geneticists are considered the leaders of the last frontier of biology. They are involved in unlocking the last few secrets of life. Unlike other physical scientists who are able to work in the environment they are studying the geneticist typically calls the laboratory home. There they are expected to juggle a number of abstract problems as they put together the puzzles of DNA and heredity. Long hours are typical, but many geneticists don't look at it is punishment, but a perk. They are closely tied to their work, and can spend years answering only one question about the genome. It is this dedication that classifies most in the profession. Genetics has application in several fields and more can be expected as technology catches up with research.

The major fields for geneticists are in medicine, agriculture and crime. Geneticists work at pharmaceutical companies to uncover the origins of disease, birth defects and the like, and then in turn develop ways to prevent or treat them. Geneticists that work in this field are involved in their work from beginning to end, although this could sometimes mean a lifetime of work, literally. Scientists now have a better understanding of DNA, and with this they can apply their knowledge to solving crimes. Geneticists have the opportunity to be laboratory detectives and use DNA sampling to insure that the right person is convicted of the crime. With medicine, agriculture and crime the three biggest draws of the profession most geneticists then find employment either in universities, the government or major pharmaceutical companies. These three employers are closely related though in how they use research, so geneticists expect to make many contacts within the industry. Aside from the employer and the field of study there are two types of geneticists: Laboratory Geneticist (This is the field that most geneticists choose to enter). Being a lab geneticist involves application of genetic technologies. Genetic Counselor is the second type and being a genetic counselor means working in the role of a nurse or consultant. Genetic Counselors work directly with parents that could be at risk for children with birth defects. It is also common to for counselors to consult with insurance and health care companies about new medical technologies and conditions.

Extensive study in the physical sciences is expected. A Bachelor of Science either in biology or chemistry is preferred, although any physical science will do as long as it is complemented with a minor in biology. There are few to no positions available with only a B.S. These jobs are typically lab assistant positions with little room for career expansion. A master's in genetics helps, but to have authority in research and development a Ph.D. or M.D. is required. Four to six years of school after completion of an undergraduate degree is the norm. Once out of school entry level positions are typically as a lab or research assistant, although the more advanced the degree the faster one will move through the ranks to direct and develop methods and technologies.

The Princeton Review 2007

Alumni Spotlight: What are they doing now?

Holly Falk-Krzesinski, Ph.D.
Director, Office for Research Development
Northwestern University h-falk@northwestern.edu
http://www.northwestern.edu/research/offices/orord.html

Dr. Holly Falk-Krzesinski received her B.S. in Biological Sciences with Honors and a Chemistry minor from UIC in 1992. She was awarded the Louis Pasteur award for research she conducted on gene regulation and cell development in *Bacillus subtilis* in the laboratory of Dr. Marion Hulett. While still at UIC, Dr. Falk-Krzesinski worked at Abbott Laboratories with a pharmaceutical group conducting research on HIV-1 proteinase, work that supported efforts that eventually resulted in the marketed AIDS antiviral products Norvir and Kaletra. After graduation, Dr. Falk-Krzesinski attended Loyola University Chicago, Stritch School of Medicine, where she received her Ph.D. in the Microbiology and Immunology Department for studies on the genetics, physiology, and biochemistry of central energy metabolism in *E. coli*. She returned to UIC as a postdoctoral fellow in the Department of Medicine, Section of Digestive and Liver Diseases studying host-microbial pathogen interactions in human intestinal cells in the laboratory of Dr. Gail Hecht. She went on then to earn a Certificate in Professional Achievement in Non-profit Management from the Kellogg School of Management at Northwestern University in 2005.

Since 1998 Dr. Falk-Krzesinski has been at Northwestern University. Currently, she is the Director of the Office for Research Development, reporting to the Vice President for Research. In this position, Dr. Falk-Krzesinski and her team support and advance faculty research and the Northwestern's collective research enterprise through strategic alignment of vision, priorities, capabilities, and opportunities to enable pursuit of large, multi and interdisciplinary research initiatives that garner national and international recognition. Dr. Falk-Krzesinski also serves as the Deputy Director for Strategic Initiatives at Northwestern's medical affiliate Children's Memorial Research Center strengthening ties between the institutions' research enterprises. Dr. Falk-Krzesinski also holds faculty appointments in the Department of Medicine, Division of Allergy-Immunology in the medical school and the Department of Biochemistry, Molecular Biology, and Cell Biology in the college of arts and sciences.

Prior to joining the Office for Research at Northwestern, Dr. Falk-Krzesinski was the Associate Director of the Interdepartmental Biological Sciences Doctoral Program and Assistant Chairperson for the Department of Biochemistry, Molecular Biology, and Cell Biology. While in those positions, Dr. Falk-Krzesinski completely re-vamped the graduate bioethics training curriculum to emphasize positive outcomes in the responsible conduct of research for trainees. Her curriculum was adopted in both of Northwestern's graduate level courses and is still used today. In addition, Dr. Falk-Krzesinski and colleagues at Northwestern successfully built one of the most comprehensive career and professional development training programs for Ph.D.-level trainees in the life, biomedical, and chemical sciences. Building on that success, she has now partnered with the Howard Hughes Medical Institute, Burroughs Welcome Fund, and Dr. Katherine Faber at Northwestern to develop and implement the *Navigating the Professoriate Program*, a new professional development program for early career women faculty in STEM disciplines (science, technology, engineering & math).

Undergraduate Advisors Corner

- BIOS 399 application forms are available in the department office. Applications must be signed by the research supervisor & returned to an advisor by the end of the first week of class. The Advisor will give you approval in the system, but you will be responsible for enrolling yourself in the course
- Walk-in hours are on Tuesdays only
- Bios 443 now by itself counts towards the lab requirement

Jason Cashmore (3266 SES)
Erin Vandermore (3276SES)
Monday, Wednesday, Thursday, and Friday
9:30-12p
1p-3:30p

Notes from Neuroscience

This Spring we graduated our second class of Neuroscience majors, 14 strong! (up from 4, last spring)

At this time it looks like the program is growing well and indeed, creating a demand on various lab courses.

- Tip to majors: contact advising (Dr Kelso) early and often to look into possible flexibility in your program as far as scheduling labs.

Stephen R. Kelso, Ph.D.
Associate Professor of Biological Sciences
PH: 312-996-2787

MAKE A GIFT TO BIOLOGY

We are committed on developing support for our Biology students. We have a number of scholarships to fund students and their research. We are focused on increasing the scholarship opportunities provided to them, and enhancing the classroom experience by acquiring up to date technology for our laboratories.

Making a gift is easy and tax-deductible, and it has an immediate impact on the experience on Biology students.

To make a gift, simply write a check payable to
The University of Illinois at Chicago
In the Memo section write :
Unrestricted Biology

Alumni News

New website for Alumni:

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

View the newsletter on-line at:

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

Keep In Touch Alumni Questionnaire

Please send me more information on:

- ☐ Alumni Gatherings
- ☐ Departmental needs for private support
- ☐ Other please specify:
- ☐ Upcoming Seminars
- ☐ Volunteer opportunities
- ☐ Contributing to an article to the newsletter

Name

Address

Email Address

Phone

Cut along the dotted line and please mail to UIC or
email us the information at ejvander@uic.edu so we can stay in touch with you!


LASAA Board with Dean Christopher Comer at the 2006 LAS Scholarship Dinner


LAS students learn about Careers in Law from LAS alumni at this LASAA sponsored event

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Graduate Departmental News

The Department of Biological Sciences offers graduate degrees in three program areas; Ecology and Evolution; Molecular, Cellular, and Developmental Biology; and Neurobiology. Our students also participate in two interdisciplinary doctoral training programs, LEAP (Landscape, Ecological and Anthropogenic Processes) and Neuroscience.

Biological Sciences Departmental News

- UIC Senior Wins Fulbright to Study Russian Émigré Doctors in Israel: Julia Geynisman a biological sciences major and Jewish Studies minor, has been named one of 10 students selected nationwide to receive a Fulbright Fellowship to conduct research in Israel beginning in October
- On April 10th, Thomas Lagen, Director of Finances for Biological Sciences, was awarded with the University's INSPIRE Award
- Beginning in August of 2007, Biological Sciences will host three female minority postdoctoral fellows. Support for the two-year postdoctoral fellowships comes from an NSF ADVANCE grant awarded to UIC in 2006 to promote and support women and minority faculty members in STEM fields. The recipients will work with faculty members in Ecology and Evolution.
- Mary Ashley Uses Oak DNA for Murder Investigation
- Professor Pete Okkema has been selected as a CETL award winner this year
- Constance Jeffrey has been awarded the Society for Bimolecular Sciences' (SBS) 2007 Small Grants Award for her project, "Novel Method of Transmembrane Protein Expression at High Levels Suitable for Drug Screening."
- Paul Malchow Appointed Associate Vice provost for Faculty Affairs

Biological Sciences Departmental Seminars

Ecology & Evolution Seminars

05-01-2007
James Harwood
University of Kentucky
Tracking the Role of Generalist Predators in Complex Food Webs: A Molecular Approach

Neurobiology Group

CURRENTLY, NO EVENTS ARE SCHEDULED

Neurobiology Journal Club

05-04-2007
Yoshi Baba

Molecular, Cellular, and Developmental Biology Seminars

5-8-07: Nadya Morozova
University of Illinois -Chicago
"TBA"

5-15-07: Keith Mostov
University of California-SF
"Morphogenesis of multicellular epithelial structures"

Graduate Student Seminars

Date	Student	Advisor
May 4, 2007	Ahlawat, Sarita Appelbe, Oliver	Morrison Schmidt
May 11, 2007	Boci, Teuta Daribayev,	Jeffery Dubreuil
May 18, 2007	DeFlorio, Reagan Ganesan, Subhashree	Stone Feathestone
May 25, 2007	Konior, Katarzyna Mathur, Vidhu	Buhse Liebman
June 1, 2007	Suchkov, Dmitry	Stone
June 8, 2007	Andrejic, Jelena	Segev
June 15, 2007	Touroutine, Denis	Richmond
June 22, 2007	Augustin, Hrvoje	Feathestone

Graduate Departmental Contacts and Information

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Neurobiology
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Contributors:

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Dr. Steven Kelso
Erin J Vandermore

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

WISE : Women in Science and Engineering Program

The goal of the UIC Women in Science and Engineering Program, WISE, is to increase the number of women students pursuing and graduating in science, technology, engineering and math (STEM) disciplines, and to promote the recruitment, retention and advancement of women who have chosen academic careers. Nationally, retention rates for women STEM students fall far behind those of their male counterparts, and women consistently make up less than 20% of tenured STEM faculty.

WISE supports women undergrad/graduate students and faculty in STEM by sponsoring activities that foster a positive educational and professional environment, and enable excellence in scholarship, teaching and service.

UIC WISE includes in its mandate the fields of biology, chemistry, earth and environmental science, math, physics, engineering, medicine - basic sciences, and technology.

WISE Resources provides for the support & advancement of students, including:

1.Mentoring of new students by experienced WISE students

2. Access to resources such as tutoring for those who want to improve their studying habits

3. Living/Learning community in the residence halls

4. WISE Travel Grants & Scholarship Opportunities

5. Student Organization for Women in STEM fields

6. And much more! Check out the WISE website at www.uicwise.org

University of Illinois at Chicago
Room 205D
Science Learning Center
845 W. Taylor St.
M/C 180
Chicago , IL 60607

Please email any questions or comments about the WISE Program to wiseuic@uic.edu

Colloquium

The Biology Colloquium is a class that dedicates itself to enlightening students to the many options available after graduation. Open for students in Biological Sciences or Biochemistry majors, the class is the most rewarding for pre-health professional students, biological science majors, neuroscience majors, and biochemistry majors. The class is divided into two parts, the large group seminar and the small group trip. The colloquium large group aspect features biweekly seminars given by professionals in the aforementioned areas of biology. They lecture about the professional facets of their respective field, what motivated them to pursue their career, and what steps they took to be in the position they are in today. The small group, which meets on weeks alternating with the large group seminar, is dedicated to exploring the "real" world of biology. The trips range from witnessing a brain surgery to observing the role a zoologist plays in habit design

William E. Michael
Class Coordinator BIOS 196 (R)

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