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Hope College

Biology Department Newsletter



The purpose of the Biology Newsletter is to facilitate communication within the Biology Department and between the Department and the Dean of the Natural Science Division, as well as the other departments within the division.

Lights, Camera, Action!



Once again, the media spotlight was focused on a member of the Biology Department when students from the Hope College Media Production class interviewed **Dr. Cronkite** about human cloning for a program that aired on Tuesday, November 27 on local Channel 6.



NEWS FROM CONFERENCE GOERS

Early November found Donald Cronkite at the annual meeting of the National Association of Biology Teachers held in Montreal, Quebec. He organized a symposium on forming high school/college partnerships based on his organization called "Forging A Link". Janet Haldeman, president-elect of the Four Year College Section of NABT, remarked that Forging A Link was the "quintessential partnership organization" for such partnerships.

Professor Cronkite and Jewel Reuter then conducted a four hour workshop on integrating technology into science education. They demonstrated video capture techniques for microscopy, the use of graphing calculators for gathering data, as well as some simple experiments to do with Paramecium. An enthusiastic collection of teachers from all over the U.S. and Canada attended the workshop. The only problem was that taxi drivers refused to carry their huge collection of equipment back to their hotel after the workshop. Eventually two slightly more friendly taxi drivers each took half of the material.

Following the conference in Montreal, Professor Cronkite participated in a science update seminar sponsored by the Math and Science Center at Grand Valley State University where he demonstrated a number of simple microscope exercises to high school and middle school teachers. He also visited Stevensville, Michigan where he worked with students at Lakeshore High School on some microbial ecology projects they were doing under the direction of two teachers, one of whom, Angelique Biehl, is an alumna of the Hope College Biology Department.

**Featuring a Fascinating Faculty Member
(Someday soon this will be you)**



Dr. Kazial is a Welcome Addition to the Bio Department

Dr. Karry Kazial is one of three Biology Department faculty members teaching in a term position this fall. She received a B.A. in Biology from Canisius College (Buffalo, NY) in 1993. Karry obtained a M.S. in Zoology in 1997 and a Ph.D. in Evolution, Ecology, and Organismal Biology from Ohio State University in 2000. She then was a post-doctoral researcher at Ohio State in 2000-2001.

Karry's research interests are behavioral ecology and communication of bats. For her Ph.D. research, (advisors: Mitch Masters and Jerry Downhower) she investigated the use of echolocation calls for communication in big brown bats. She examined the variability in echolocation calls related to individual, sex, age, and family affiliation. She then used playback experiments to investigate whether big brown bat females would respond differently to echolocation calls of males and females. In addition, she examined age differences in echolocation calls in bats born in captivity. In her post-doctoral work she began a study of the passive location of insects by bats via insect sounds. She is also interested in the function of insect defense sounds given in response to bats.

Karry has worked with colleagues on studies of variability in echolocation calls based on recording situation and training studies examining bats' abilities to detect and range targets. She has also been using a laptop recording system that enables her and her colleagues to record echolocation calls in the field.

Karry taught Biology 150, (Biological Unity and Diversity) this fall and will be teaching Biology 260 (Organismal Biology) and a laboratory section of Human Anatomy this spring. She is serving as a co-coordinator with Leah Chase on the spring seminar series.

Karry was born and raised in Amherst, NY (a suburb of Buffalo) where she met her husband, Todd, during the summer before she started undergraduate school. Todd is now pursuing his Masters Degree in exercise science at Western Michigan University. They have a black cat, Raven, who is one and a half years old. Karry enjoys soccer and has played since she was in elementary school. She likes to read science fiction/fantasy and mystery books and enjoys going to schools to let young students in on the wonders of bats!

Bio Department Concludes a Successful Semester of Seminars

Drs. Kathy Winnett-Murray and **Leah Chase-Waller** were the coordinators of the Biology Department's Fall Seminar Series, which concluded on Friday, December 7 in a joint Chemistry/Biology Department seminar.

Following is a list of the seminars offered this semester.

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| August 31 | Dr. Tom Bultman, Kevin Eckerle, Kerry Kazial, Kim Risley, Jewel Reuter, and Debbie Swarhout: "Meet the New Biology Faculty" |
| September 7 | Carrie Arnold ('01), Anthony Cappa ('02), and Suzie Geerlings ('00): "Hope Biology Majors in the REAL World" |
| September 14 | Dr. Robert Huber: Bowling Green State University, OH "Dynamic Interactions of Aggressive Behavior, Social Status and Amine Neurochemistry in Crayfish" |



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| September 28 | Ken Freestone: Macatawa Greenway Project " Ken Freestone and Kermit the Frog: We Like Bein' Green " |
| October 12 | Dr. Janet Andersen: Hope College Dept. of Mathematics " Interplay of Biology and Mathematics: Finding New Ways to treat AIDS " |
| October 19 | Dr. Ed Goldenberg: Wayne State University " Regulation of Sexual Dimorphism and Lability in <i>Spinacea oleracea</i> " |
| October 26 | Dr. Bart Williams: Van Andel Research Institute " Examination of the Wnt Signaling Pathway in Carcinogenesis " |
| November 9 | Heather Wesp ('98): Northern Arizona University ('01) " The Ontogeny of Escape Performance in Razorback Suckers and Rainbow Trout " |
| November 16 | Tom Cary ('89): West Michigan Environmental Action Council " Caring for Life: A Personal Search to Find Ways For Change " |
| November 30 | Dr. Dorothy Hanck: University of Chicago " We Have Met the Anemone and They Are Ours: Using Toxins to Understand How Ion Channels Work " |
| December 7 | William King III: Factor & Partners Joint Biology/Chemistry Seminar: " Intellectual Property: Who, What, When, Where, and Why? " |

LOOKING FORWARD

A Tentative Schedule of Seminars for the Semester Ahead

[See a schedule of upcoming seminars](#)



Publication Activity



Dr. Cronkite is the Senior Community Editor for a segment of the Brooks Cole Publishing web site called The Window, Community Perspectives. Dr. Cronkite and Jewel Reuter (Community Editor) are constructing a web site community resource of multimedia materials for teaching introductory biology to undergraduates.

Manuscripts Accepted:

Bultman, T.L. and G. Bell. Interaction Between Fungal Endophytes and Environmental Stressors Influences Plant Resistance to Insects. In Press. *Oikos*. **Cronkite, D.** Musings on a Psalm Fragment. *Perspectives*. November, 2001



Ecosystem Workshop for K-12 Teachers

Hope College Senior Sarita Hoekzema and **Dr. Kathy Winnett-Murray** presented a workshop on "Ecosystems in the Schoolyard and in the Classroom" to 60 K-12 teachers who are participating in a one year program sponsored by the National Science Foundation through a grant to Kellogg Biological

Station (KBS) Long-term Ecological Research Site. The workshop focused on inquiry-based investigations of ecosystem and community level interactions and took place on December 5, 2001 at KBS.



Sabbatical in the Semester Ahead

Dr. Barney will be on sabbatical following the end of the fall semester until August 22, 2002. He will be spending a good part of the Spring 2002 semester at the University of Florida and then plans to spend the remainder of his leave writing papers and doing library research.

Lunch with Jeanne Narum

On Tuesday, November 20, 2001, **Karry Kazial**, **Debbie Swarthout**, and **Leah Chase** attended a luncheon to which all Hope College pre-tenure faculty were invited. Jeanne Narum, Director of the Independent Colleges Office was the guest of honor. Several issues related to tenure and research were discussed, but Jeanne stressed the importance of setting specific research goals and working as a group to achieve those goals. Time was taken to discuss faculty goals as a group and all agreed to develop a pre-tenure support group that will meet monthly. One of the primary objectives of these meetings will be to provide each member impetus for completing their respective research projects as well as providing constructive feedback on grant proposals and manuscripts.



EVANS RECEIVES NSF AWARD



Dr. Timothy Evans has been awarded a grant from the National Science Foundation Systematics Program for the proposal titled, "Collaborative Research: Generic Relationships within subfamily Bromelioideae (*Bromeliaceae*)."

The three year award to Dr. Evans is for \$140,000 and will support his continuing work on the systematics of the *Bromeliaceae*. The award is coupled to a second award to Dr. Gregory Brown at the University of Wyoming. Together they will utilize morphological and DNA sequence data to examine phylogenetic relationships among members of the tropical plant family *Bromeliaceae* subfamily *Bromelioideae*. The research is the first attempt to develop hypotheses of phylogenetic relationships within the subfamily and will make it possible to advance current understanding of the evolutionary relationships within the group, which have historically been based on subjective, intuitively-based systems of classification. The work will make a significant contribution to biodiversity documentation for an ecologically important group of plants in one of the most endangered, yet biotically diverse biomes on earth, the Atlantic Forest Biome of Brazil.

Ecologically, tank-forming bromeliads, which include most members of *Bromelioideae*, are keystone species in biodiversity maintenance. They are an important resource for free-water in the canopy, and provide feeding sites, breeding sites, and habitat for many diverse organisms that represent all kingdoms of life. The results from this research will be important to biologists studying diversification, biogeography, and possible co-evolutionary patterns of any of the organisms that utilize bromeliad

tanks.

Students from Hope College, the University of Wyoming, and Federal University, Rio de Janeiro, will be involved in all aspects of the work, including collection of plants in the field, morphological analysis, DNA sequencing, and conducting phylogenetic analysis. The work is one step in a long-term research program in which Dr. Evans and Dr. Brown aim to extend a systematic revision of the entire subfamily.

