



## Our inaugural issue - opening doors to our past and to our future

### Notes from the Chair

With this inaugural issue of *biology notes* we are opening doors to our past and to our future. This and future issues are meant to keep our alumni abreast of happenings on campus and in the department, as well as items of general scientific note. Also, the intention of our newsletter is to feature successful alumni from time to time. Many of you have gained significant notoriety in your career. This all reflects positively on the individual and the program(s) of which he or she has been a part.

First let me mention some of the changes that have occurred in staffing over the last several years. Since my appointment as chair in 1986, there is virtually no aspect of our faculty that remains static. We have gone from a highly

senior staff to many new faces with great ideas for improving our offerings and programs. Byron Torke and I retain the greatest seniority in years of service at the present time. We were both hired with the intent of enhancing our aquatics program through the

excellent leadership of Tom McComish, who is now "semi" retired. He still is active on the Lake Michigan project on yellow perch with our newer colleagues Tom Lauer and Mark Pyron. Due to the success of this group, the university saw fit to recognize our program with the establishment of the Aquatic Biology and Fisheries Center.



Carl E. Warnes,  
Professor and Chair

This has led to more faculty members, greater grantsmanship, and better ties with state (IN Department of Natural Resources), federal (U.S. Fish and Wildlife

Service), and private (Lilly, Cynergy) sectors. On the other end of the scale, the department is currently conducting a search for a new tenure-line faculty member for our biotechnology program. This program was the brain child of the molecular faculty under the leadership of Carolyn Vann. We are presently finishing our second year of the program. Recruitment for the next class began in earnest spring term. Consider helping us with recruitment for the program by suggesting it to a perspective student!

Kem Badger has spearheaded our efforts to consolidate management and planning for natural areas owned by Ball State. The

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Ed.D. student  
Adam Hott and  
Biotechnology  
Certificate  
student  
Therry Winata  
isolate RNA  
from orchid  
tissue.

### Program expanded

The Ed.D. in science and Ed.D. in science education programs have expanded and grown. In 1999 we had six students in the two programs in biology and in 2000, it was expanded to also include chemistry, computer science, geology, mathematical sciences, natural resources and environmental management, physics and astronomy, and physiology and health science.

As of fall, 2002, the program has grown to 25 students with 11 of those in biology. We are always looking for good students, so please refer them to our web site, [www.bsu.edu/sciencedoc](http://www.bsu.edu/sciencedoc), and to the program director, Walter S. Smith, [wsmith@bsu.edu](mailto:wsmith@bsu.edu). ■

## Faculty Updates...

**Melissa Warden Mitchell** was one of four faculty to receive the 2002 School Science and Mathematics Association Award for Excellence in Integrating Science and Mathematics, an award based on our work with the Urban Semester and in particular, Family Fun Night which has become an annual event at T.C. Steele Elementary School in Indianapolis. ■



**Carolyn Vann** has led faculty in developing our new Biotechnology Certification Program in response to state and national needs.



Our new program, within the cell and molecular area, is completing its second year. It prepares students for careers as research associates capable of designing and performing state-of-the-art research projects in biotechnology. The one year program is for advanced undergraduates in biology or chemistry or for postbaccalaureates who may or may not be registered simultaneously in our graduate program. Presently, five faculty members are involved in the program, which includes a series of primarily laboratory-intensive courses and a student internship experience totaling 21-26 semester hours. Information about the program and application materials are available at the following Web site: [www.bsu.edu/web/biology/biotech](http://www.bsu.edu/web/biology/biotech). ■



In January 2002, **Walter S. Smith** received the Outstanding Mentor Award from the Association for the Education of Teachers of Science for his more than 30 years of mentoring science educators at the University of Kansas, University of Akron, and Ball State University. ■

**Jim Olesen** came to Ball State more than four years ago, after completing a NIH Training Fellowship at Vanderbilt University Medical Center. Since arriving, his main teaching responsibilities have been in cancer biology, molecular biology, honors biology and various courses associated with the recently instituted biotechnology program. As for research interests, Olesen's main focus has been on characterizing proteins and possible protein interactions that influence the regulation of cell cycle progression and programmed cell death. Of most interest are those mechanisms that control the way cells grow and divide and how, in the case of cancer, these cells lose the ability to regulate their growth properties. At a cellular level, it is thought that numerous mutations or other genetic events must take place for the progression of cancer to occur. Students in his research group are continuing to study the effects of abnormal expression of two genes, namely *TAL1* and *LMO1*, which code for transcription factors that are up-regulated in cases of T-cell acute lymphoblastic leukemia (T-ALL). These genes, not normally active in T-cells, are activated by translocation events and this results in cellular transformation. Additional research is currently being done to further characterize downstream targets of these oncoproteins and possible interactions that are influenced by these factors. In particular, they are looking at interactions of key apoptotic and cell cycle regulatory proteins such as bax, bcl-2, cyclin D1, p53, caspase-3, and caspase-8. Hopefully, in the end, this work will help advance our understanding of how abnormal expression of oncogenes influences many cellular processes. ■



## Notes from the Chair... Continued from page 1

department has control of the majority (four of six) of these properties containing approximately 400 acres in Delaware County. To recognize our leadership and responsibility in the area, the department has petitioned and successfully established a Field Station and Environmental Education Center (FSEEC) to oversee natural areas held by several units on campus. Our recent acquisition of land contiguous with Cooper property is the first property to fall under the realm of FSEEC for management and planning. The newest property, donated by William Skinner, joins our Cooper property on the north and west. Our hopes are to use this larger plot of land to promote environmental education.

A final comment on departmental activities has to do with our many hours planned to better serve the life science teachers educated and trained through our efforts and that of Teachers College. For approximately three years now, several faculty members led by Melissa (Warden) Mitchell have addressed the mandate of the Indiana legislature to increase the content within the subdisciplines, in particular the sciences, being offered to our K-12 teachers. Included in this mandate is an assessment system to document student classroom performance (teaching) in addition to grades (Performance Based Assessment or PBA). The incoming freshmen of fall, 2002 were under this revised major and PBA.

Send us materials on your whereabouts and activities for inclusion via our e-mail address on the back cover. If you have a catchy name for this newsletter let us know as well. ■

## Where Are They Now?

*Editor's note.* We would like to interview several of our alumni in upcoming editions of the **biology notes**. One of us will be e-mailing or calling you in the near future to see if you are willing to be featured. Here are responses from three of our recent graduates.

**Ivy Disher • Kelly Wilbur • Richard Dunn**

**Describe your present job. How long have you held this position?**



*Ivy Disher, B.A., 2000*

**ID:** I am an educator at Minnetrista. My primary responsibility is to assure the quality of our school tours. Our tours have integrated subject matter—but focus mostly on environmental science and history of East Central Indiana. I also write teachers packets (a form of curriculum) to help teachers connect their field trip with their classroom curriculum. I connect both the tours and packets to state standards. I have worked in this position for almost two years.

**KW:** I am an associate biologist in the diabetes department of the Discovery Division of Eli Lilly. My responsibilities include identifying and investigating potential genes responsible for various side effects and characteristics of efficacy and ultimately designing cell based assays to screen drug candidates for and against expression of such genes. I've been at Lilly since June of 2000. Ironically, I did not actually graduate with a B.S. until December of that same year.

**RD:** I'm a zookeeper at the Fort Worth Zoo in Texas. More specifically, I'm a bird keeper in a new interactive exhibit called "Texas Wild!" My duties range from animal husbandry, management, training, enrichment, and medicating to public demonstrations, interpretative, and education. I've been here for over two years.

**Was your position difficult to find?**

**ID:** I had worked as an interpreter (tour guide) for a couple of years at Minnetrista and began looking at full time employment when I graduated. They needed help in the education department. My prior experience with Minnetrista made for a nice match. Essentially, they found me. I didn't have to look too hard.

**KW:** At the time I was hired, there were a number of positions at Lilly. However most of these positions were fixed-term contracts. When I accepted my current full-time position, I had already been offered one of the contracted jobs, so I wouldn't say that a job here was difficult to find. However, I wouldn't have been able to locate or obtain my specific position without the referral of my Ball State mentor, Dr. Carolyn Vann. Although it is possible to obtain a position directly through a human resources department, I can't emphasize how much easier and faster you can do this through personal and professional introductions and contacts.

**RD:** I found the position online at the American Zoo and Aquarium Association's Web site. Positions, when available, are very competitive. You have to be willing to move around the country for a job. Often times, you can't pick a city to work, you go to where the positions are available.

**What skills made you competitive for this position?**

**ID:** My prior experience with informal learning through Minnetrista school tours and my education combined for the "ideal" candidate at Minnetrista. Most educators do not have museum type experience this early in their careers.

**KW:** The most valuable skills I had were not specific abilities. Rather, they were traits such as independence and maturity. In a professional, corporate, and industrial setting, employers like Eli Lilly are looking for individuals who can do their job effectively and efficiently without supervision. I feel that my independence and mental maturity were the defining characteristics that led to my employment. My experience in undergraduate independent research under Dr. Vann and my ability to discuss that research in interviews definitely showcased those characteristics.

**RD:** Having prior background experience in my field made me very competitive.



*Richard Dunn, B.S., 2000*

**RD:** I had a summer internship at a zoo between academic sessions. I also volunteered lots of my time to local zoos, raptor rehabbers, and Indiana Department of Natural Resources. I received a seasonal bird trainer position with the World Bird Sanctuary immediately upon graduating.

**What was one of the more valuable college experiences or courses you had in helping prepare you for the job?**

**ID:** Although this sounds trite, I enjoyed everything about college. I loved learning new things. That love of learning has perhaps made me most successful here. I constantly have to learn new things in order to present new programs to our customers. The Urban Semester experience (I worked with a teacher who taught all fifth grade science) helped me to see what a difference hands-on learning makes to students at all ability levels.



Kelly Wilbur, B.S., 2000

**KW:** As I said earlier, undergraduate research not only provided me some necessary basic skills for my current position, but also showed that I was mentally prepared to take on the responsibilities I fulfill today.

**RD:** Probably the most valuable experience I had while in school was being a member of The Wildlife Society. We participated in numerous field trips, did lots of volunteering for projects in the community and with Indiana Department of Natural Resources. The courses that helped me most were all the zoology classes. These classes included ornithology, mammalogy, ichthyology, entomology, and herpetology when offered.

**Are the expectations placed upon you in your work more strenuous than you anticipated?**

**ID:** There are times of stress with every job. The environment surrounding my work place helps to keep times of stress in check. Currently, my job is undergoing several changes—most of them are exciting.

**KW:** No doubt, there is a pressure to get answers. I was not initially prepared for that. As drugs are being developed, it is my job to create the assays to test them. There are

timelines and deadlines and if my tests are not ready when required, I need to have good reasons why. Sometimes this means working longer hours or weekends if there are technical problems with the assays while I am developing them.

**RD:** Not particularly, I prepared myself fairly well while going to school.

**What do you enjoy most about your present job?**

**ID:** I feel as if I am making valuable contributions to a variety of educational aspects in East Central Indiana. I also enjoy the opportunity to continue my own learning experiences.

**KW:** My job changes constantly. The assays I design change from project to project and each new assay introduces a whole new set of problems that I must troubleshoot and overcome. Some others might not enjoy these challenges, but I revel in them. It is much more exciting than doing the same thing day after day.

**RD:** Working with the animals is a definite plus, not sitting at a desk day in and out, and being able to educate the public.

**What advice can you offer to current biology majors desiring a career similar to yours?**

**ID:** Don't limit yourself to conventional science education places—like schools. Keep in mind that museums, science centers, and environmental centers are always looking for qualified people to interact with customers, do research, etc. Getting experience in your field while working toward your degree is a big help. It gets your name and reputation established in the professional world and makes you stand out among your peers.

**KW:** Don't do the minimum. Do as much as you can (fellowships, undergraduate research, grants, internships, fellowships, tutoring others, studying, associations, etc.). Build up your resume. When you get out of Ball State, you are essentially competing with your peers for positions out in the real world. Just having a degree will not cut it. I can't count the number of graduates I know who didn't go the extra mile at Ball State and now work at a drive-up window. Secondly, talk to your professors. Get to know them and their research. Find out where their past students are. This will help you judge what lab you want to work in. Look for opportunities to contribute and volunteer. There is a tremendous amount you can learn and experience you can gain from these people. Additionally, they will most likely be the key to finding a position after you graduate.

**RD:** Get as much experience as you possibly can while you're still in school. ■

## This Year in Wildlife

by Joseph Allen, President  
Ball State student chapter of The Wildlife Society

The Wildlife Society at Ball State University has been active this academic year. We have conducted our usual, biweekly meetings which included student and professional speakers who gave presentations on research and management issues. We conducted a bake sale and sold Tshirts to raise money for the chapter. In the fall, Soarin' Hawk (a raptor rehabilitation organization) participated in Ball State's UniverCity 2002. During the presentation, members from the organization displayed four hawks and discussed ecology and conservation issues related to raptors. Many students, faculty, and members of the public attended. The chapter responded to Soarin' Hawks participation at UniverCity by volunteering at their Fort Wayne rehabilitation center. Chapter members cleaned raptor enclosures and built an enclosure for a Bald Eagle. Members were rewarded for their volunteerism by getting to fly rehabilitated Great-horned Owls and Red-tailed Hawks. More recently the chapter heard good news regarding the Peregrine Falcons we released three

years ago. One of the birds was located in Iowa and was reported to have been successfully nesting for the past couple of years. This spring, we began volunteering at another rehabilitation facility, Great Cats of Indiana, a nonprofit refuge for large mammals. For one of our recent bi-weekly meetings we participated in an Internet video conference with two researchers from the University of Queensland, Australia, presenting their findings on nail-tailed wallaby and black-faced impala. Proposed future projects include building and selling bird houses and bat boxes. We also plan to help the Indiana Department of Natural Resources with their Osprey reintroduction project, scheduled to begin this summer. ■



**Our efforts to extend and improve the educational programs in biology are ongoing. If you would like to help, your financial gifts to the Ball State Foundation can be designated for the Department of Biology (General Fund account 901).**

**We also will be detailing some specific programs and dreams in an upcoming mailing. Donations may be made online at [www.bsu.edu/giving/](http://www.bsu.edu/giving/) or mailed to  
Ball State University Foundation  
P.O. Box 672  
Muncie, IN 47308**

We want to update our database of Biology graduates. Please update your information and return it to us, along with some news about yourself or other graduates via e-mail or return this form.

**Thank you very much.**

Name: \_\_\_\_\_ Grad Yr. \_\_\_\_ Degree \_\_\_\_\_

Home Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

E-mail : \_\_\_\_\_

Work title and address: \_\_\_\_\_

Future preferred mailing address: (circle one)

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## Alum Updates.....

- Steven Aquilani, 1998, recently received his Ph.D. from the University of Mississippi. He now teaches at Delaware County Community College in Philadelphia, PA.



*Kamal Islam, mentor and Cindy Basile, who received her master's degree in July, 2002.*

- Doug Hohman, 2000, is studying neotropical migrant birds for his master's degree at the University of Mississippi.

- Jodie Jawor M.S., 1998, is currently a Ph.D. candidate at Dayton University.

- Chad Hoefler, M.S., 2000, is a Ph.D. candidate at the University of Massachusetts.

- Tom Sproat Ed.D., 2000, is now Assistant Professor, Biological Sciences, Northern Kentucky University.

- Cynthia M. Basile, M.S., 2002, is a wildlife biologist with the Hoosier National Forest, based in Tell City, Indiana. ■

## Grad Updates.....

- Andy Duff and Rachel Henderson attended the 32nd North American Symposium on Bat Research in Burlington, Vermont in November. They conduct research on bats for the Lassen Network of National Parks in northern California under the direction of Tom Morrell.

- Liz Hasenmyer completed her second summer field season investigating the status and distribution of star-nosed moles in Indiana.

- Cheryl Fisher is investigating the differences in avian species abundance and diversity at natural and reclaimed wetlands in northern Indiana.

- Brian Allen is finishing up GIS data entry related to his investigation of the home range sizes and habitat use by turkey vultures.

- Kirk Roth is studying Cerulean Warblers at Big Oaks National Wildlife Refuge in southern Indiana under the direction of Kamal Islam. Kirk will embark on a second season of field work during spring of 2003. ■

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