BIOLOGY

NIU Department of Biological Sciences

Northern Illinois University **Fifth Annual Newsletter** **Fall 2000**

From the Chair...

Professor J. Michael Parrish

1999-2000 has been another year of change here in the Department of Biological Sciences. We now offer both a graduate certificate and a master's degree with specialization in bioinformatics, the exciting new hybrid between computer science and molecular biology that utilizes information, such as that recently gleaned by the Human Genome Project, to make direct links between an organism's genetic code and the structure and function of specific molecules.

We have said goodbye to some familiar faces as well as welcomed in some exciting new ones. Paul Sørensen, a mainstay of our botany program since he came to NIU in 1970, has retired, although we will still be seeing him frequently as he is planning to continue curating our herbarium as an emeritus professor. Our new environmental biologist is Hans Beck, who comes to us from the New York Botanical Garden and brings extensive experience in conservation, ethnobotany, and systematic botany.

Also retiring were Plant Molecular Biology Center (PMBC) secretary Joyce Smith, animal care specialist Harlan Walley, and electron microscopist Dian Molsen. Jody Scaletta has come on board as animal care supervisor, and Chris Baker has been hired as a greenhouse worker.

A cooperative agreement between the university, the College of Liberal Arts and Sciences, the Graduate School, and the PMBC has resulted in our acquiring a state-of-the art Zeiss confocal microscope, which will be the focus of a revamped microscopy center. A search is underway for a microscopist to manage the facility, and a majority of the faculty members have immediate plans to use the new microscope in their research.

Other new educational programs include the introduction of new courses in forensics and bioinformatics and the department's first online course, which represents the first step in a new educational partnership between NIU and Chicago's Shedd Aquarium.

Our faculty members continue to publish widely, with over 60 papers published in journals as diverse as *Nature, Science, Biochemistry, Journal of Zoology, Journal of Virology*, and *Journal of Insect Physiology*. They have also brought in nearly $900,000 in new externally funded grants this year.

In short, the biological sciences continue to thrive at NIU. We're excited about the new academic year and meeting the challenge of continuing to provide a quality, cutting-edge educational experience in the biological sciences for our students. ♦

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In this issue...

Thank you to all who have contributed to the Telefund. Your donations go a long way towards enhancing our programs. Thanks in advance for your continued support!

Moon Rock on Display at NIU Library in October

Founders Memorial Library will unveil an exhibit in October that promises to be out of this world.

The exhibit, "Out of This World: NASA Past, Present and Future," examines space exploration and features an authentic moon rock, retrieved from the lunar surface during the Apollo 15 mission in 1971.

Located in the front lobby of the library, the free exhibit will be open during normal library hours from Oct. 2 to Oct. 31. The moon rock will be available for viewing, however, only from 9 a.m. to 4 p.m. weekdays from Oct. 3 to Oct. 19. A limited number of group and school tours can be arranged by contacting **Marcia Dick** at (815) 753-9853.

"The University Libraries are proud to host a major exhibit and learning experience devoted to one of the most heroic journeys in human history," said **Arthur P. Young**, dean of NIU's University Libraries. "Space exploration, scientific discovery and our place in the expanding universe will surely be the biggest story of the new millennium."

Barbara Johnson-Wint, a professor in NIU's Department of Biological Sciences, is organizing the exhibit and secured the loan of the lunar rock, which NASA considers to be priceless. The rock, however, is only one piece of the "Out of This World" exhibit.

"We want to reach out to NIU students and the general public to promote science and NASA," Johnson-Wint said. "And we have a wide range of exhibits designed to pique the public's curiosity."

At 7 feet tall and 20 feet long, the exhibit's 3-D panoramic display of Mars' landscape is also likely to catch some attention. The display is being shipped from the NASA Jet Propulsion Laboratory in Pasadena, California.

"The moon rock represents where NASA has been," Johnson-Wint said. "The surface of Mars represents where NASA is going. Mars is the next target in terms of manned space flight, and there has been discussion of a possible three-year round trip."

The exhibit also will include more than a dozen space-related posters created by faculty and students, with design assistance from **Charles Larry**, art librarian at NIU Libraries. Other exhibit items will include books on the NASA space program and space-program models of the space station, lunar lander, and shuttle. NIU's College of Engineering and Engineering Technology will exhibit a pneumatically powered robot, appropriately dubbed Pneumatica.

The award-winning walking robot—designed, built, and programmed by NIU students—is 2 feet wide, 4 feet long, and 3 feet high and weighs in at more than 300 pounds. It demonstrates the technology of developing extraterrestrial vehicles.

Johnson-Wint came up with the idea for the exhibit after several years of participation in a NASA program for university faculty. She researches the effect of load and force—including gravity—on the strength of human bones. Astronauts can lose bone density while in zero-gravity conditions for extended periods.

"Scientists figure that on a three-year Mars mission, an astronaut could lose as much as 30 percent of his or her bone mass in gravity-sensitive bones, which are from the waist down," Johnson-Wint said. "So the astronaut would be in extremely fragile shape upon return."

At NIU, Johnson-Wint discovered a number of other faculty members from various disciplines—including geology, engineering, geography, and physics—who were interested in or researching space-related topics. That led to the idea of bringing together NIU expertise to create the "Out of This World" exhibit. "I'm really impressed with how much people love what they're doing here," Johnson-Wint said. "They love the science." ♦

Retirements

by Professor Laszlo Hanzely

Professor Paul Sørensen, our plant taxonomist, retired during the summer of 2000. He came to NIU during the fall semester of 1970. His retirement from NIU is not "final," however, since he wishes to continue his work on prairie restoration in northern Illinois. He recently relocated to Faraday Hall, along with the department's herbarium.

Ms. Dian Molsen retired at the end of the summer session of 2000. Ms. Molsen started her employment at NIU during September of 1968. She received her M.S. degree in biological sciences in 1968 and, upon graduation, became the electron microscopy technician in charge of the department's electron microscopy facility. Dian is moving to Arizona to get away from the winters of northern Illinois.

Ms. Joyce Smith, our secretary in the department's Plant Molecular Biology Center, retired during the summer of 2000. She has been with the department since August of 1990. Her retirement plans are not finalized, but she plans on doing a lot of traveling. In the meantime, she is working as part-time extra help in the PMBC.

Mr. Harlan Walley, the "founding" caretaker of the department's animal facility, retired in December 1999 after 31 years at NIU. He plans to remain in Illinois, travel as much as possible, and keep up his interests in antiques and fishing. Harlan is still spotted around Montgomery Hall fairly often while he continues to organize and maintain the study collections in the department museum. ♦

B.S., M.S., and Ph.D. Degrees Earned in 1999–2000

Students who graduated with M.S. or Ph.D. degrees in biology August 1999, December 1999, May 2000

August 1999
Anna Kotsakis, M.S.
Jay Christopher Olaszek, M.S.
Marjorie Vanderwagen, M.S.
Richard Donald Shippy, M.S.
Theodore R. Chauvin, M.S.
Peter Matthew Knysz, M.S.

December 1999
James Glenn Botts, M.S.
Kevin Lee Cook, M.S.
Melinda Lee Eddy, M.S.
Karen Jean Larson, M.S.
Chad Thomas Pearion, M.S.
Dayle Ellyn Saar, Ph.D.

May 2000
Jennifer Helen Cline, M.S.
Heidi Marie Kein, M.S.
Julie Ann Larson, M.S. - *Spec. in human anatomy*
Tonya Denise Bittner, Ph.D.
William Bryan Milstead, Ph.D.

Students who graduated with B.S. degrees in biology August 1999

Steven Todd Anderson
Karla Renee Bass
Jaimeen Dinesh Brahmbhatt
Jay P. Caballero
Erik Wayne Courter
Laura Ashely Grable
Lori Ruth Janus
Catherine Lynn McMahon
Phillip Michael Palella
Ryan E. Piktel
Michelle Marie Rohlfing
Elizabeth Joy Schwab
Elizabeth Ann Tazelaar
Robert Byron Thiry
Laura Wachowski
Kelli Diane Wroga

Students who graduated with B.S. degrees in biology December 1999

Samuel Arlington Barnes
Debra Ann Callender
Shelby Ryan Childress
Tabia L. Crawford
Amy Christine Darley
Shital Rashmi Desai
Kimberly Jean Furst
Daniel Carl Hirschfeld
Heather Melissa Holich
Carolynn Anne Hunter
Chesley M. Leslin
Megan Kendra Liedtke
Jason C. Long
Kristin Kay Ludwig
Christopher Jude Mazur
William Ernest McCarthy
James Daniel Messer
Dimitrios Nick Nikiforos
David Allen Palucki
Ryan Russell Pommier
Lasharee Mernita Roberts
Natasha Renee Scott
Charles Joseph Shank
Bradley Duane Smith
Joel Parnell Strange
Mariette Marie Sweeney
Aimee Sue Van

Students who graduated with B.S. degrees in biology May 2000

Sharl William Abraham
Tracy Lynn Allred
Doreen Anderson
Robert Allan Aruiza
Robin Kristina Babcox
James Joseph Bielecki
Scarlet Chasity Brady
Linda J. Bruce
Karen Pamela Burnell
Jennifer Anne Cain *
Sara Christine Cavanagh
Gina Lynn Cox
Jason Ralph Crescenzo
Kertrell Lee Deal
Mary Genevieve Dykas *
Laurie Lynn Fesnak
Sharin Marguerite Gabl
Lindsay Ann Gross
Mary Samir Haddadin
James Wallace Haigh
Kristen E. Hainey
Laura Lyn Jedlicka
Lisa Michele Johnson
Nicole C. Jones
Colleen Janel Koehl
Jennifer Jenay Kopp
Thomas Kovac
Karen Love
Susan Amanda Martinka
Mindy Lynn Mathenia
Jillian L. Norman
George E. Oller
Pamela Lynn Olson
Patricia Ann Omeara
Rhykka Leanne Panozzo *
Kristie Marie Pienta-Selby
Antonette Kristine Pozzi
Leann Alison Pushee
Amit Riman
James Dominic Roppa
Rebecca Ann Sandow
Foram Shah
Nikita B. Shah
Amber Lynn Steinhauser
Patrick George Stephen
Robert Delion Stockley *
Kavitha Narendra Tindivanam
Candelario Torres
Kari Lyn Vandenelzen
Gretchen Anne Weber
Courtney Wehrheim
Brian Kent Wettstein
Daniel James Wojtczak
Amy Nicole Zynda
** with department honors* ♦

Alumni /Graduate Student News

Hank VanWinkle *(Blackstone's lab)* recently presented an article, "The effects of hermit crabs on hydractiniid hydroids," to P.S.Z.N: *Marine Ecology*, which was accepted for publication on Sept. 1, 1999, and will be printed in Vol. 21, 2000.

Heidi Kein *(Gasser's lab)* is working at Pharmacia as a biochemist in St. Louis, Missouri. "Basically, I develop kinase assays and screen potential compounds for two projects. These projects involve the creation of a drug that will battle the pain and inflammation associated with rheumatoid arthritis. One of my projects just went to 'product alert,' which means it will be tested in man this fall."

Hilary E. Reno *(B. King's lab)* completed her dissertation, titled "An ecological, molecular, and biochemical comparison of *Aedes triseriatus* (Say), the vector of LaCrosse virus, with its sibling species, *Aedes hendersoni* Cockerell," at the University of Illinois at Urbana-Champaign and is now studying for her boards in order to complete her M.D. there.

Sharin Gabl *(Vary's lab)* is now in a physician's assistant graduate program.

M. Kunnimalaiyaan ("Kunni," *postdoc, Vary's lab*) presented a paper entitled "Characterization of a replicon from plasmid pB400 of Bacillus megaterium QM B1551" at the ASM General Meeting in Los Angeles.

Rushad Daruwala *(Meganathan's lab, Ph.D. 1997)* has been appointed as a research microbiologist at Abbott Laboratories.

Chockalingam Palaniappan *(Meganathan's lab, Ph. D. 1995, postdoc at the University of Rochester Medical School)* was hired in 1998 by Amersham/Pharmacia research institute in New Jersey to work on nucleic acid enzymes from hyper-thermophiles, and was recently promoted to manager.

Kurt Januszyk received a Student Travel Award for the 47th Annual Meeting of the Radiation Research Society in Albuquerque, New Mexico.

Mike Palm *(Johnson-Wint lab)* was awarded a student travel stipend by the American Society for Gravitational and Space Biology to help defray travel costs in order to present a poster at their 15th annual meeting in Seattle, Washington last fall.

Cathering Ventling *(Hill's lab)*, has been awarded a 2 year Carter G. Woodson Fellowship from the University. The fellowship program provides academic and financial support to minority teachers/scholars wishing to pursue full-time doctoral studies at NIU.♦

Hans T. Beck Joins Faculty

The newest member of the Department of Biological Sciences, with expertise in environmental conservation and population and organismal biology (B.S. in geography and biology, University of Colorado, Boulder) and plant systematics and ethnobotany (Ph.D., City University of New York Graduate School), is **Professor Hans T. Beck**. Prior to his arrival at NIU, Prof. Beck was assistant curator at the New York Botanical Garden's Institute of Economic Botany. While there he directed NYBG's plant natural products program, with funding from the National Cancer Institute, Merck Research Laboratories, and Pfizer Inc. In addition to his systematic research on the vine genus *Paullinia* (Sapindaceae) and the economic botany of the caffeine stimulant plant guaraná (*P. cupana*), he carried out a five-year ethnobotanical collaborative research program in northwestern Ecuador with the Awá Indigenous Federation. The goal of this ongoing research is to document the high biodiversity of the pluvial rain forest and to assist the Awá people with resource management and conservation strategies. In the future, Professor Beck will advance his biodiversity research by linking field-based investigations with digital satellite imagery analysis and GIS technology. "My goal is to bring landscape-level quantitative analysis to the field, so that this powerful data set can be used by the local stakeholders of conservation — the indigenous communities and conservation officers." Professor Beck joins the ecology and evolution section, and he will be teaching environmental biology and conservation biology this year. ♦

Daniel Olson Receives Award

Professor Daniel Olson, director of the anatomy lab, was awarded the university's SPS (Supportive Professional Staff) Presidential Award for Excellence. He was honored at a reception in April, and was given a $1,000 appreciation award and a plaque for his outstanding contribution to the university.

Professor Jon Miller, coordinator of teacher certification in the Department of Biological Sciences, nominated Olson for being an "outstanding teacher with high professional standards. He is knowledgeable, creative and receptive. As a result of his excellence in teaching, students graduating from the master's program specializing in human anatomical sciences at NIU are highly regarded and well prepared to pursue their career goals," says Miller.

Olson also works with the human anatomy programs at several community colleges, teaching and "prospecting" cadavers for use in demonstrations to students. He has served as a reviewer for William C. Brown Publishing Company, published a book, and co-authored several manuscripts.

Professor Chris Hubbard and Olson run a donor program to supply cadavers for the anatomy classes, which saves the department $2,000 a year. Hubbard reported that Olson's teaching evaluations are consistently at the top of the quality range.

Graduate student **Angie Dimmig** said of Olson, "This past year is when Professor Olson went above and beyond for the benefit of NIU students. From May to August 1999, he served as interim coordinator (of teacher certification). He volunteered…to make sure students got placed this fall in schools." ♦

Faculty News

Professor Chris Hubbard participated in the Learning Technology Showcase on March 21, 2000, at the Holmes Student Center, an exhibit that allowed faculty members to showcase their use of technology in the classroom. Hubbard's contribution, entitled "Online Programs for Instruction in the Anatomical Sciences," featured a computer learning program on the surface anatomy of the human body, which teaches students how to find and identify various internal structures on a live person. "Using a variety of different media—short movies, pictures, and pop-up text—the program shows the student how to find easily palpated bony landmarks and to then use these landmarks to locate and identify various soft tissue structures like muscles, nerves and tendons," said Hubbard.

Professor T. Daniel Griffiths was recently elected president of the Faculty Senate and executive secretary of the University Council, and says, "I received both congratulations and condolences. It did not take long to realize why I received condolences. Even before I officially took office, I was made aware of a problem in one college where a dean did not follow an important bylaw. Fortunately I was able find a resolution to this problem, but it made me aware that I need to know the university Constitution and Bylaws backwards and forwards. I was also faced with the problem that the long-term administrative aide, Pat Sauter, had retired and we needed a replacement fast. Fortunately we were able to hire Donna Mathesius, who had been in the history department. She is doing a superb job, which makes my life a lot easier. Actually, I enjoy this position since it allows me to interact with faculty, staff, students, and administrators. I have especially liked being able to discuss issues with our new president, John G. Peters. I have found him to be very open and willing to listen. He also has a clear understanding of the importance of shared governance, and I think this university was very fortunate to be able to hire him. In my dealings with faculty, staff, students, and administrators I find that, although there are some differences of opinion, there is also willingness to work together to make this university a better place." ♦

Bioinformatics comes to NIU

by Professor Mitrick Johns

The department has created a new master's degree with specialization in bioinformatics, the blending of biology with computer science. The new two-year specialization was approved by the IBHE over the summer, and the first students are already enrolled. Also approved was a shorter course of study leading to a certificate of graduate study in bioinformatics.

Bioinformatics was created to cope with the vast flood of DNA sequence information generated by the Human Genome Project as well as genome projects from other organisms. Raw DNA sequences are nothing but very long arrays of A, C, G, and T. Without the aid of computers even the simple question of which DNA sequences are genes cannot be easily answered. And once genes are identified, we need to know what those genes do and how they interact. Right now we don't know the function of at least one-third of the genes that have been discovered. Bioinformatics can help answer these questions by carefully comparing small sections of genes from many different organisms. Analyzing the patterns of gene expression in different tissues and diseases also helps identify the genes.

Our programming was developed in response to the needs of the biotechnology industry. Many new companies are hoping to exploit the Human Genome Project for new disease treatments. Right now very few people are trained in both biology and computer science. As the first such programming in the state of Illinois, we hope to get our students in on the ground floor in this new field. To speed our efforts, the NIU Graduate School has purchased a new dual processor computer dedicated to the bioinformatics area.

Students in bioinformatics are expected to become fluent in the C and Perl computer languages as well as the Unix operating system. Courses in biochemistry, molecular biology, and biostatistics will round out their biology knowledge base. The bioinformatics students will gain practical experience in the field through internships in local industrial labs and independent study projects.

Professor Peter Jablonski is spearheading the bioinformatics program at NIU. Dr. Jablonski has recently been an invited participant in a national project to sequence and annotate the genes of *Halobacterium*, the first halophile genome that has been sequenced. The halophiles are Archaea bacteria that live in very high salt concentrations. This work has recently been published in the *Proceedings of the National Academy of Sciences*.

More information about the bioinformatics programming can be found under the "Bioinformatics" link on the department's home page: **www.bios.niu.edu**.♦

Shedd, NIU offer online course on Amazon River

NIU and the **Shedd Aquarium** together are offering an online biology course taught by **Michael Parrish,** renowned paleontologist and chair of NIU's Department of Biological Sciences, and showcasing the aquarium's popular new Amazon exhibit, "Amazon Rising: Seasons of the River."

The fall online course will examine the tropical fishes, reptiles, and amphibians of Africa and South America by utilizing the Shedd's newest permanent exhibit.

"We're really excited to be working with the Shedd," Parrish said. "The tropics have the most complex and colorful terrestrial and freshwater ecosystems in the world. And the Amazon exhibit serves as the perfect complement to the course, which will offer students an experience that can't be had in either a traditional or completely virtual classroom."

While the biology course lectures and tests will be delivered via the Web, students will visit the Shedd on two occasions for tours of "Amazon Rising." The popular exhibit highlights the rise and fall of the Amazon River and the flooding forests. Parrish and Shedd curators will lead students on the tour of the South American ecosystem, which includes piranhas, birds, sloths, insects, snakes, catfish, stingrays, and caimans. Shedd experts also will participate in several online discussions with students.

"Students will learn the stories behind the animals and will gain insights into their behaviors, habitat requirements, and care," said Cheryl Mell, the aquarium's director of education.

"This is our first ever online course at the Shedd," Mell added. "We thought this would be a great pairing of Northern's resources in biology and online technology with our considerable collection of animals and artifacts."

NIU offers a variety of online courses, but the unique partnership with the Shedd represents a first for the university.

"We're in effect taking the university into the city and tapping the resources of a major museum," said Denise Stauder of NIU's Division of Continuing Education.

The biology course is offered for credit at both the undergraduate and graduate levels, with registration open through Labor Day. A non-credit section also is being offered at a reduced cost.

The course (Bios 493E/600E) begins Sept. 4 and will run through Dec. 11. During that time, students will attend lectures by logging onto the course site at their convenience from their personal computers. For more information on registration, tuition, and required textbooks, call (815) 753-5200 or visit the Web at **www.online.niu.edu** ♦

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Honors Convocation

- **Dean's Award** - Jilma H. Ellison
- **Harvey A. Feyerherm Award** - Jilma H. Ellison
- **Phi Sigma Outstanding Undergraduate Research Award** - Jilma H. Ellison, Nancy A. Kochis , Rhykka L. Panozzo
- **George Terwilliger Award** - Matthew F. Bonnan, Christopher H. Kodani
- **Charles E. Montgomery Award** - Julie A. Larson
- **Sidney A. Mittler Award** - Tonya D. Bittner
- **Phi Beta Kappa Association's J. Robert Hainds Award for Academic Excellence** - Jennifer L. Imm
- **NIU Outstanding Woman Student Award** Jennifer A. Cain, Mary G. Dykas, and Courtney E. Wehrheim
- **2000-2001 Dissertation Completion Award** - Michael Palm
- **Amanda Mangold Scholarship Award** - Jeffrey C. Tanzi
- **Clara Abbott Scholarship Award -** Jilma H. Ellison and Sharin M. Gabl
- **David Layman Scholarship Award -** Edward J. Allen and Anthony A. Brown
- **University Fellowship -** Rebecca Sitenga
- **Abbott Laboratory Scholar Award -** Amy J. Cohn and Jennifer L. Imm
- **Nat'l Football Foundation and College Hall of Fame Coach Eddie Robinson Scholar Athlete Award -** Patrick G. Stephen
- **Harry Jerome Scholar Athlete Award -** Patrick G. Stephen

Interesting Hobbies — Multi-Talented Faculty!

Between teaching, preparing labs, and doing their own research, one would think members of the biology faculty would have little time left for outside interests and hobbies, but such is not the case with our multi-talented, widely diversified professors in the Department of Biological Sciences at NIU. Interesting hobbies outside the sciences abound here, from musical talents, to photography, to carpentry and blacksmithing.

For example, did you know that our own **Michael Parrish,** chair of the department and faculty member in the ecology and evolution area, besides being a well-known researcher and educator in his field of paleontology, is also a music critic for the *Chicago Tribune*?

There are several other faculty members in the department with the music bug. **Tom Sims** plays the French horn and performs with the Kishwaukee Symphony Orchestra, currently as principal horn. He has played horn since junior high school. When he was a postdoc, he played in the UCLA Molecular Biology Chamber Orchestra. When Sims came to Northern, he was able to take lessons through the Community Music School. Last fall, while on sabbatical leave at Harvard, he was able to play in a semi-professional orchestra in the Boston area, the Hingham Symphony Orchestra. All of the other horn players were graduate students at the New England Conservatory of Music, so he learned a lot. Tom also plays in the DeKalb Municipal Band, and in a brass quintet called the Kishwaukee Brass.

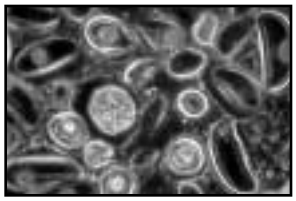
Pat Vary has played second violin in the Kishwaukee Symphony Orchestra for the past 10 years. She is also a member of *Bread and Roses,* a women's chorus in DeKalb, as well as co-director and founder of the children's choir at Unitarian Universalist Society of Geneva. She sings in the church choir, which she also directed for eight years. **Jerrold Zar** has played trumpet in the Kishwaukee Symphony Orchestra since 1984. **Rick Johns** plays the guitar, and **Scott Grayburn** grows orchids, plays guitar, and writes his own music. Some of Scott's songs are available in mp3 format and can be downloaded at: **www.httpcity.com/wsgrayburn.**

Chris Hubbard started blacksmithing as a hobby about six years ago. He's always been interested in it because of its historical implications and his interest in history. From the earliest times in Europe and this country, every town had a blacksmith who could repair or make virtually everything that was constructed of iron. However, the old-time village blacksmith essentially went out of business in the 1930s because he could no longer compete with machine-made items. The blacksmith tools from this era were initially considered junk and were destroyed or melted down for the war effort during WWII. Then in the 1970s there was a renewed interest in artistic blacksmithing. Now these tools command a premium price and of course are considered antiques. Still they work quite well although many (such as good quality anvils) are difficult to find. Hubbard does artistic blacksmithing along traditional lines. This would include making hardware for period furniture that he builds, ornate bases for tables made from antique floor grates, or 18th century kitchen hardware. Often he receives commissions from people who want a custom item made to fit something they already have or wish to add to their house. Chris has always liked working with his hands, so this hobby is a nice diversion from the sedentary academic life.

Jozef Bujarski enjoys carpentry and book translation in his spare time. He has been interested in carpentry for a long time, maybe because St. Joseph, his namesake, was a carpenter. He enjoys home improvement projects, like building window panels, installing moldings, finishing basement stairs, and making tables. This fall he is planning to build a deck in his backyard.

Bujarski also translates scientific and popular books from English to Polish. His major achievement is the translation of a 400-page book by Matt Riddley, entitled "Red Queen, Sex and Evolution of Human Nature." He is currently considering translating another book by the same author called "Genome," and has future plans to try poetry translation.

Ron Toth has always had an interest in photography. One of his favorite subject matters is the pattern of light and shadow as seen at night, and he has been photographing "night scenes" locally for the past 10 years. "I usually go by and ask first, if I plan to photograph a house or someone's property. I have met some really interesting people as a result of my interest in night photography." Ron also has an enormous collection of plant and microbial and cellular plant slides, which is an art form in itself. He has had some of his slides blown up and printed as posters. He participated in an exhibit of local artists, where he showed some of his work, at the Illinois Design Center and Gallery in Rockford last fall. Several of his black and white photographs can sometimes be seen gracing the walls of the main office in Montgomery.



Hank Vanwinkle enjoys the "art" of brewing beer from scratch (non-extract brewing). He is currently brewing a batch of "steam beer," like San Francisco's Anchor Steam. ♦

We'd like to hear from you! E-mail us at the addresses listed below:

- **Hans Beck**
  Conservation Biology; Plant Sytematics; Ethnobotany; Natural Products Chemistry.
  hbeck@niu.edu
- **Neil Blackstone**
  Evolutionary Biology of Marine Invertebrates. neilb@niu.edu
- **Jozef Bujarski**
  Plant Molecular Biology; Molecular Virology. jbujarski@niu.edu
- **Sonya Conway**
  Endocrinology; Neuro-Endocrine Control Systems. sonya@niu.edu
- **Thomas Conway**
  Immunology; Histocompatibility Antigens; Monoclonal Antibodies.
  tconway@niu.edu
- **Melvin Duvall**
  Molecular Phylogenetics and Evolution. mel-duvall@niu.edu
- **Kenneth Gasser**
  Cell Physiology. kgasser@niu.edu
- **Daniel Griffiths**
  Radiation Biology; DNA Repair; Physiology; Cellular and Molecular Biology; Cytogenetics.
  tgriffiths@niu.edu
- **Richard Hahin**
  Nerve and Muscle Physiology; Biophysics. hahin@niu.edu
- **Laszlo Hanzely**
  Developmental Biology.
  lhanzely@niu.edu
- **Stuart Hill**
  Pathogenic Microbiology.
  sahill@niu.edu
- **Gabriel Holbrook**
  Plant Physiology; Plant Biochemistry.
  gholbrook@niu.edu
- **Christopher Hubbard**
  Endocrine Cell Signaling and the Effects of Growth Factors on Cell Growth and Metabolism.
  chubbard@niu.edu
- **Michael Hudspeth**
  Molecular Biology; Organelles; Mycology; Fungal Plant Pathogens. mykes@niu.edu
- **Peter Jablonski**
  Microbial Physiology and Molecular Biology of Archaebacteria.
  pjablonski@niu.edu
- **Mitrick Johns**
  Plant and Animal Molecular Genetics.
  rjohns@niu.edu
- **Barbara Johnson-Wint**
  Development; Matrix Modelling and Remodelling; Gravitational Biology. barbara-johnson-wint@niu.edu
- **Bethia King**
  Behavioral Ecology; Evolution; Entomology. bking@niu.edu
- **Richard King**
  Evolutionary Ecology; Herpetology. rbking@niu.edu
- **David Lotshaw**
  Cell Physiology, Ion Channels and Signal Transduction. dlotshaw@niu.edu
- **R. Meganathan**
  Microbiology; Microbial Physiology; Biochemistry; Genetics and Molecular Biology. rmeganatan@niu.edu
- **Peter Meserve**
  Population and Community Ecology; Biogeography; Biology of Birds and Mammals. pmeserve@niu.edu
- **Jon Miller**
  Cellular Physiology; Invertebrate Immunology. jsmiller@niu.edu
- **John Mitchell**
  Cell Physiology; Molecular Biology.
  jmitchell@niu.edu
- **Virginia Naples**
  Anatomy; Functional Morphology; Mammalogy; Forensic Anatomy; Vertebrate Paleontology.
  vnaples@niu.edu
- **Michael Parrish**
  Vertebrate Paleontology; Functional Morphology; Systematics; Paleoecology.
  mparrish@niu.edu
- **Neil Polans**
  Genetics; Mapping and Evolution of Complex Traits; Plant Systematics.
  npolans@niu.edu
- **Thomas Sims**
  Self-incompatibility in Petunia; Molecular Biology. tsims@niu.edu
- **Joel Stafstrom**
  Plant Development; Cellular/Molecular Biology.
  stafstrom@niu.edu
- **Ronald Toth**
  General Botany; Economic Botany; Creation/Evolution Debate.
  t80rxt1@wpo.cso.niu.edu
- **Patricia Vary**
  Microbial Genetics; Molecular Biology; DNA Replication.
  pvary@niu.edu
- **Carl von Ende**
  Population and Community Ecology; Aquatic Ecology; Plant Ecology. cvonende@niu.edu
- **Linda Yasui**
  Radiation Biology; DNA Damage and Repair in Chromatin.
  lyasui@niu.edu
- **Jerrold Zar**
  Physiological Ecology; Biostatistics; Environmental Biology.
  jhzar@niu.edu

Emeritus and Adjunct Faculty

- **Jack Bennett** Population and Behavior Genetics
- **Anne Berg** *(temp. assoc. prof.)* Epidemiology of Epilepsy
- **W. Elwood Briles** Avian Immunogenetics
- **Mason Fenwick** Algology; Applied Botany
- **Elon W. Frampton** Microbiology (Bacteriology); Molecular Biology; Virology
- **James Grosklags** Mycology and Medical Mycology
- **Arnold Hampel** Molecular and Cellular Biology; Biochemistry
- **Kenneth Harmet** Plant Physiology
- **Darrel Lynch** Microbiology (Bacteriology)
- **Wayne McIlrath** Plant Physiology
- **Lowell Nicolaus** Ethology (Animal Behavior)
- **K. V. Prahlad** Embryology; Endocrinology
- **Robert W. Pearson** Environmental Biology; General Biology
- **Charles Rohde** Entomology
- **O. A. Schjeide** Cell Biology (Growth and Differentiation); Animal Ultrastructure
- **Paul Sørensen** Plant Taxonomy; Systematics; Ecology; Conservation
- **Marvin Starzyk** Aquatic/Pathogenic Microbiology; Microbial Ecology
- **Robert Wittrup** Anatomy and Physiology

Grants Awarded Fiscal Year 2000

Berg, A.	Multicenter Study of Epilepsy Surgery *Yale University*	$ 46,777
Berg, A.	Risk and Predictors of Intractable Epilepsy in Children *U.S. Dept. of Health and Human Services*	$ 318,008
Bujarski, J.	Genetic Recombination in Brome Mosaic Virus: The Role of Intergenic Region in Junction Site Selection *National Science Foundation*	$ 8,000
Bujarski, J.	Genetic Recombination in Brome Mosaic Virus: The Role of Intergenic Region in Junction Site Selection *National Science Foundation*	$ 110,000
Duvall, M.	Seeking the Phylogenetic Root of Monocots: A Study of Paleoherb Genomes *National Science Foundation*	$ 131,900
King, R.	Hibernation, Seasonal Activity, Movements Patterns, and Foraging Behavior of Adult Lake Erie Water Snakes *U.S. Fish and Wildlife Service*	$ 42,500
Mitchell, J.	Origins and Compartmentalization of Antizyme Proteins *U.S. Dept. of Health and Human Services*	$ 144,000
Stafstrom, J.	Mutational Analysis of Arabidopsis DRG genes *U.S. Dept. of Health and Human Services*	$ 144,000
Vary, P.	Characterization of a Novel Plasmid Replicon of QMB 1551 *U.S. Dept. of Health and Human Services*	$ 98,350
	TOTAL	**$ 1,043,535**

Matthew Bonnan wins recognition

NIU biology graduate student **Matt Bonnan** of Roselle has been a dinosaur devotee since the tender age of 5. By junior high, he had decided to become a paleontologist. By eighth grade, he had launched a traveling dinosaur presentation that, to this day, is sought after in suburban schools.

Now the 26-year-old Bonnan, who expects to complete his Ph.D. in biological sciences next spring, is fast making a name for himself in the world of dinosaur research.

At its October conference in Denver, the Society for Vertebrate Paleontology awarded Bonnan with the Romer Prize, a first-place award for outstanding student research presentation. Competing against students from such institutions as Johns Hopkins University, University of Chicago, UC-Berkeley, and the University of Bristol (England), Bonnan wowed scholars with a miniature dinosaur reconstruction and his theory explaining why the giant long-necked sauropod dinosaurs had unique U-shaped hands on their forelimbs. "The hand in these dinosaurs is very strange," Bonnan explained. "The thumb and little finger almost touch each other, so I started to wonder why they were shaped like that."

Bonnan theorizes that the radius bone, which is strongly associated with the thumb, shifted internally in the forelimbs of the sauropods to support their immense weight, which reached 30 to 40 tons. Bonnan believes this shifting of the bone caused the U-shape of the hand. "In all other dinosaurs and all other back-boned animals, including humans, the radius bone begins on the outside of the upper arm bone and crosses over to the inside, allowing you to put your hands palm down," Bonnan said. "In these dinosaurs, however, the radius and ulna bones don't cross each other."

"I think he made an extremely convincing case," said **J. Michael Parrish**, chair of NIU's biological sciences department and Bonnan's adviser. It was the work of Parrish, a noted dinosaur expert, that drew Bonnan to NIU. "Matt's one of these people who has been fascinated with dinosaurs since he was a child," Parrish said. "He loves what he's doing and it really comes across."

The Romer Prize was the second accolade this year for the NIU student. In March, the North Central Geological Society of America awarded Bonnan its prize for outstanding student presentation, this one on sauropods' hind feet.

As he has done since eighth grade, Bonnan continues to make presentations on dinosaurs in suburban schools. He brings along props, including dinosaur fossil casts and an alligator skull, which he compares to the skull of a T-Rex. Students also can take home dinosaur drawings inked by Bonnan.

"The whole point of the school presentations is that, from deep down in my heart, I believe in educating children about science," Bonnan said. "Dinosaurs are an excellent vehicle to accomplish that goal." ♦

Alumni Update

Would you please tell us what you and your fellow alumni have been doing (e.g., marriages, children, or other accomplishments).We would also like to know about any degrees received before or after your stint at NIU.

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BUSINESS

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Please use my gift of $ _____
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- ❑ Plant Molecular Biology Center
- ❑ Sidney Mittler Memorial Fund (annual award to outstanding genetics graduate student)
- ❑ Harvey A. Feyerherm Endowment Fund (annual award to outstanding preprofessional junior-level student)
- ❑ Charles E. Montgomery Endowment Fund (annual award to outstanding undergraduate teacher-certification student)
- ❑ George L. Terwilliger Endowment Fund (annual award to outstanding graduate student for service to the department in teaching and research)

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Facility Improvements

by Professor Richard Becker

The past year was an active period with regard to upgrades, as well as addition of capabilities to Department of Biological Sciences infrastructure. The final phase of a two-year endeavor to renovate the Montgomery 403 **growth chamber facility** nears completion as of this writing. Initiation of this project began in 1999 with demolition of four original-construction walk-in and reach-in chambers. Funding for acquisition and installation of five new chambers was obtained through a progressive joint partnership of the NIU Physical Plant, Graduate School, Plant Molecular Biology Center, and Department of Biological Sciences. The new chambers are computer-controlled, providing for precision regulation of environmental conditions such as light cycle, temperature, and humidity. Additionally, the facility provides containment capability for plant transgenic and plant virus experimental protocols.

A much-needed upgrade of the **biology student computing lab (BSCL)** was implemented this past December. Workstations in the BSCL had reached the end of their upgrade cycle and were replaced with Pentium-class, Windows 98 systems. Additionally, the lab was expanded to 24 stations. The new lab is already in full use, serving our traditional biostatistics course as well as our newer bio-computing and bioinformatics courses.

Within the "bowels" of the Montgomery Hall basement resides the department's **electron microscope facility**. Several rooms house transmission and scanning electron microscopes where the nature of the cell and its processes are explored. An unusual end-of-year funding opportunity allowed for the acquisition of a new tool to aid our researchers in cellular exploration – a confocal microscope. Unlike typical microscopy, which utilizes standard visible light, or electron microscopy, which employs an electron beam in visualization of specimens, the confocal scope utilizes a laser light source. A defining feature of confocal microscopy arises from its ability to produce blur-free, crisp images of thick specimens at various depths, which in turn allows for various multi-dimensional cellular re-constructions. ♦