

Department of Biology Newsletter



December 2005

WORD FROM THE CHAIRMAN

The Biology Department continues to achieve prominence in many ways, with the most spectacular recent example being the election of our **DISTINGUISHED PROFESSOR JAMES BROWN** to the National Academy of Sciences (see p. 2). Much of the work that earned Jim this most prestigious honor was completed here at UNM, in close collaboration with his students. Additionally, we

“Our students and faculty continue to perform at a world-class level.”

are delighted to welcome aboard new, talented faculty members who will further enliven and diversify our research efforts.

With respect to our facilities, there have been several very positive developments. The extensive remodel of the old bookstore, now the CERIA building, is complete and now houses the Museum of Southwestern Biology

(MSB). **DRS. TERRY YATES, TIMOTHY LOWREY** and **MANUEL MOLLES JR.**, all Biology faculty members, deserve enormous credit for helping CERIA come to reality. Offices of the Sevilleita Long Term Ecological Research (LTER) and the LTER Network Office are now also found in CERIA.

There have been some remarkable changes in venerable Castetter Hall. The old microbiology teaching labs

on the second floor were replaced by newly refurbished faculty labs, thanks to renovation funds provided by a \$10.1M NIH Centers of Biomedical Research Excellence grant to fund a “Center for Evolutionary and Theoretical Immunology” (CETI). A brand-new microbiology teaching complex has been constructed to replace the woefully inadequate old teaching labs. Thanks to the



Sam Loker

passage this summer of the \$135M student-funded capital bond issue, other parts of the building also will soon be remodeled. Bond funds in the amount of \$7M will provide a state-of-the-art teaching complex for our introductory majors’ courses. Here, I would especially like to thank both our undergraduate and graduate students for helping to secure passage of the bond issue. Additional funds will be forthcoming from the bond issue to build a new addition to Castetter, likely on the west side, devoted to Genomic Research.

Our students and faculty continue to perform at a world-class level as you can see in the selection of articles and updates in this newsletter. Indeed, these are very exciting times—the Biology Department is on the verge of dramatically expanding our space and we have modernized many of our research facilities. I encourage you to drop by for a visit, or please write and update us as to your activities. We would love to hear what you are doing.

ERIC (SAM) LOKER
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For more information, please visit <http://biology.unm.edu>

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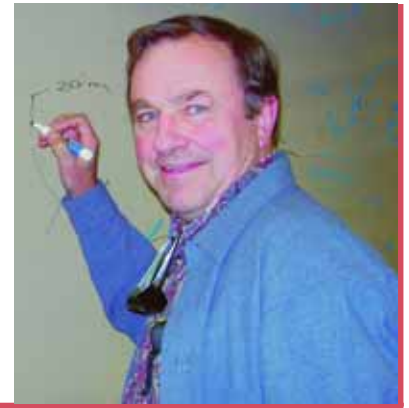
New microbiology teaching laboratory



The University of New Mexico

Elected to the National Academy of Sciences— Accolade for Distinguished Professor

Distinguished Professor James H. Brown was elected this year to the National Academy of Sciences (NAS), one of the highest honors that can be accorded to a scientist for his distinguished and continuing achievements in Ecology.



Growing up in the country sparked Dr. Brown's fascination with nature, an interest that was actively encouraged and reinforced periodically by teachers throughout his teen years. Dr. Brown earned degrees from Cornell University (B.S. '63) and University of Michigan (Ph.D. '67). His teaching and academic career began at the University of California, Los Angeles, and thereafter at the Universities of Utah and Arizona before joining the Biology faculty at UNM in 1987.

During the course of his impressive career, Dr. Brown has conducted simultaneously two major research programs. First, a long-term monitoring experiment started in 1977 in the Chihuahuan Desert near Portal, Arizona, examines the roles of seed-eating rodents and harvester ants in desert ecology. Second, his more

recent research has focused on biological metabolism and scaling, which stems from the idea that body size is an important axis of biodiversity. In order to understand how two disparate organisms such as mammals and microbes use the same molecules and pathways to sustain and reproduce themselves, Dr.

"It's an enormous honor and very gratifying to receive recognition from peers for your work."

Brown, in collaboration with **DR. GEOFFREY WEST** of the Santa Fe Institute, developed mathematical models that characterize the effects of body size and temperature on metabolic rate. These laws can be used to explore all levels of biological organization from molecules to ecosystems. The implications of this work have impacts in many diverse

fields, for example, predicting changes in the carbon cycle due to global warming, managing fisheries for productivity and sustainability, and modeling and measuring cancer tumor growth rates.

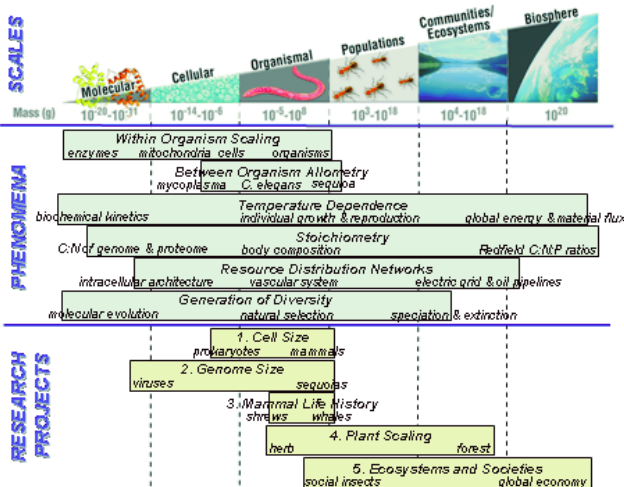
Dr. Brown is proud of his ecological research, but felt that it was probably the broader impact of the scaling

laws that earned him his election to the NAS. Reflecting on his recent appointment to the NAS, Dr. Brown said, "It is an enormous honor and very gratifying to receive recognition from peers for your work." Despite increasing demands on his time, he hopes that it will be easier to acquire funding for his projects as well as attracting good students and post-doctoral colleagues. In view of the recognition that the scaling work is receiving, he hopes that this shows how exciting interdisciplinary science can be and anticipates that more collaborations of this kind will occur and be used as a training ground for the next generation of scientists. His former students and colleagues, **MORGAN ERNEST**, **JAMES GILLOOLY** and **BRIAN ENQUIST**, who have gone on to high-flying careers, have certainly benefited from this

approach. While undertaking his research at UNM, he said that the department has been incredibly supportive in many ways, primarily in providing his group with high-caliber students.

Commenting on his future plans, "there is always much to be done, there are more questions to be answered with the scaling work, for instance, scaling the genome and how metabolism interfaces with the genome. Scaling may also provide critical insights into the different organizational levels of evolution," he said. Both he and Dr. West are planning to write a book, which draws together the scaling work.

Dr. Brown has received many awards, published more than 180 scientific papers, and co-authored seven books as well as other critical writings. He is active in teaching, particularly at the graduate level, and enjoys the challenge of conveying his passionate interest in biological diversity to students eager to unlock nature's secrets through original research. Throughout his career, he has strived to make the Biology Department a center for graduate training in biological complexity. "My science has always been driven by a curiosity about the diversity of life," he said.



An example of scaling relationships.

“Muscling up” on Flies—Dr. Richard Cripps, Associate Professor

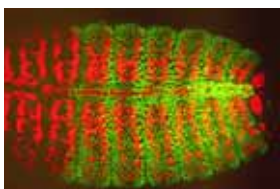
Development of an organism results from groups of cells making sequential cell-fate decisions, whereby a naïve cell is eventually locked into a particular function. The basic genetic mechanisms by which these decisions are made allow the formation of complex structures and organs within the body. Using the fruit fly, *Drosophila melanogaster*, Dr. Cripps’s research group focuses on the formation of heart and skeletal muscle. Interestingly, the genes which fashion the muscle cells in the fly are highly similar to those functioning in vertebrates, including humans.

The *Drosophila* dorsal vessel is the cardiac organ that pumps blood around the body, and consists of a linear muscular tube. Dr. Cripps’ group has identified the cells that form valves allowing blood to flow into the heart, and have shown that their formation depends upon a gene named *svp*, which is similar to one required for atrium formation in mammalian hearts. A special class of genes called Hox genes places the valves in the correct location in the dorsal vessel and are also known to impact heart development in humans. Dr. Cripps anticipates that uncovering this developmental process in the fruit fly will have broad relevance in higher animals. His current research is to understand more precisely how Hox genes directly affect expression of the *svp* gene by defining the genetic elements that switch *svp* on or off during heart formation.



L–R, back row: Kathryn Ryan, Jennifer Brower, Jennifer Elwell, Cheryl Sensibaugh, Phill Baker, Damian Trujillo, Phuong Nguyen, Richard Cripps. Front row: Ankita Shah, Jennifer Ikle, TyAnna Lovato

In the skeletal muscle lineage, there are three major fiber types present in the adult that perform unique functions within the animal, such as flying and walking. How these different muscle types arise from a uniform population of cells is still not known; however, understanding this process will help address how particular muscles of the human body used for rapid exercise differ from those used for sustained activity. Recently, Dr. Cripps’ group has shown that the adult muscles form only after a hormonal signal passes through the body, and that the muscle cells interpret this signal via a gene called *twist*. His group also has identified another muscle gene, *Mef2*, which is activated by this hormonal signal and is required for the formation of the adult muscles. Currently, the group is trying to identify additional hormone-induced genes that are required for the formation of the complex muscles of the adult fly.



Mature *Drosophila* embryo stained for the presence of *Mef2* (red) and a *Hox* gene (green). The dorsal vessel runs from right to left along the midline of the body.

Plant Life— Professor Diane Marshall

Dr. Marshall’s research includes the study of both basic and applied aspects of plant ecology. She is concerned with plant reproduction, primarily the success of plants as both seed parents and pollen parents. Using analysis of seed paternity, in most instances the question of whether pollen donors are able to sire many or few seeds can be determined. This work identifies the mechanisms by which some plants are more and less successful at siring seeds and asks whether sexual selection (competition among males for access to females or choice by females among mates) acts in plants. This research adds to our knowledge about the basic mechanisms of plant reproduction and has implications for plant breeding.

Most of Dr. Marshall’s graduate students study more applied aspects of plant ecology. **HEATHER SIMPSON** was funded recently by the U.S. Department of Agriculture to study the population biology of a weedy mustard, dyers woad. By understanding the life history and genetics of this species, we may gain clues to controlling the weed



L to R: Diane Marshall, Heather Simpson & Melanie Barnes

and to predicting which introduced species can become invasive. **MELANIE BARNES** is asking questions about restoration ecology using a particular plant, winter fat, as a model; she is interested in whether locally adapted plants must be used in attempts to return plant communities to healthy conditions and whether hybridization between local and introduced plants will have beneficial or detrimental effects. **JERUSHA REYNOLDS** is asking whether the fragmentation of populations into small groups of plants, which often occurs when humans change the habitat, affects the movement of pollen among plants and the structure of plant populations.

Dr. Marshall, recently awarded the Potter Chair (see p. 4), will use this fund for her research. It will provide money for travel, upgrading computers, and increasing the laboratory supply budget.

Quiet Heroes

There are many folks in our department who go quietly about their often very hectic daily routines without the recognition they deserve. Often these people are in the front lines, spending long hours each day with students, changing their students' lives with their teaching excellence. One such quiet hero singled out for appreciation and acknowledgment here is **BIOLOGY LECTURER JAMES SWAN**. For years Jim has taught the ever-in-demand anatomy and physiology courses (Biology 237 and 238) that have launched many a career in medicine, nursing or pharmacy. One would love to know how many of the health professionals around our state have been influenced directly by Jim's mastery of this subject material. Jim, thank you for quietly, efficiently and so competently representing our department to the public—your efforts have had a huge beneficial impact on our community!



Academic Success

PROFESSOR MARGARET WERNER-WASHBURNE was awarded the SACNAS (Society for Advancement of Chicanos and Native Americans in Science) Distinguished Scientist Award at their recent meeting in Denver, Colorado. In May 2004, she was honored with the Presidential Award for Excellence in Science, Math and Engineering Mentoring. Both of these awards recognize her scientific excellence and commitment to mentoring students as well as promoting the participation of minority groups under-represented in the scientific community. She also will deliver the **E.E. Just Lecture** at the American Society of Cell Biology's 45th Annual Meeting in San Francisco in December 2005. Her most recent honor was election to the rank of AAAS Fellow by her peers from the American Association for the Advancement of Science, the world's largest general scientific society.



Luis Haro, former president of SACNAS, and Maggie Werner-Washburne

DR. DONALD W. DUSZYNSKI, Professor and former chair of Biology, has been appointed as Director of the Museum of Southwestern Biology, taking over in July 2005 for **DR. MANUEL C. MOLLES, JR.**, who recently retired. Dr. Molles, now Emeritus Professor, will remain closely affiliated with Biology and is involved in several textbook writing projects. Congratulations to Manuel on his retirement and for the exemplary service rendered to the Biology Department and to MSB, and to Don, for his appointment as director and willingness to serve the department once again in a major leadership role.

DR. DAVID LIGON and **SANDY LIGON** have retired from the Biology Department. The Ligon, much respected and appreciated members of our department for many years, were honored in a ceremony held in December 2004. David, now Emeritus Professor, intends to remain active in the department pursuing his scholarly interests in avian biology. Sandy has left open the possibility that she may return to the department as needed to teach. We wish them the best for a happy and fulfilling retirement.

DR. ERIC S. LOKER, Regents' Professor and Chair of Biology, was invited by the World Health Organization to participate as an advisor for the meeting of the Scientific Working Group on Schistosomiasis, which was held in Geneva, Switzerland in November 2005.

DR. DIANE MARSHALL, Professor of Biology, recently was selected to occupy the Loren Potter Chair of Plant Ecology. This honor recognizes her significant contributions to the field of plant population biology. She was honored recently at a meeting of UNM's Board of Regents.

Thanks to the efforts of **DR. BRUCE T. MILNE**, Professor of Biology, an undergraduate minor degree in Sustainability Studies will be offered involving students and faculty from four colleges and 15 departments in experiential learning, research, and service activities. The program, meant to complement major degrees, will meet the demand for sustainability expertise. The proposed College of Arts & Sciences curriculum will include core courses in Biology, Architecture & Planning, American Studies, and Economics.

DR. ANDREAS WAGNER, Associate Professor of Biology, recently returned to the Biology Department after a year's sabbatical leave at the Institut des Hautes Études Scientifiques in Bures-sur-Yvette, France. Upon his return, Dr. Wagner presented us with a copy of his 2005 book, *Robustness and Evolvability in Living Systems*, the latest in the Princeton Studies in Complexity Series. Well done, Andreas!

Ulfar Bergthorsson

Ulfar Bergthorsson's career as a research scientist began in Reykjavik, Iceland, where he graduated with a B.Sc. in Biology from the University of Reykjavik in 1989. He moved to the U.S. and gained his Ph.D. in Evolutionary Biology from the University of Rochester in 1998. From New York he traveled to Utah for post-doctoral work in the Biology Department at the University of Utah to study genome evolution in enteric bacteria. His second post-doctoral fellowship was carried out with Distinguished Professor Jeffrey Palmer at the University of Indiana from 2001 to 2004.

This work focused on horizontal gene transfer (transfer of genes across mating boundaries) in plants. Dr. Bergthorsson was able to show that mitochondrial genes from distantly related flowering plants also undergo horizontal transfer. This work culminated in an influential publication in the *Proceedings of the National Academy of Sciences*, for which he was awarded the prestigious Stebbins Medal for Best Original Paper in Plant Evolutionary Biology in 2005 by the International Society of Plant Taxonomists.

Dr. Bergthorsson was appointed to the faculty in January 2005 as part of the NIH-funded CETI program.

Building on his post-graduate expertise in the role of gene duplication in evolution, he will use the nematode *Caenorhabditis elegans* as a model organism for the estimation of gene duplication frequencies using custom-built gene microarrays. One of Dr. Bergthorsson's departmental collaborators is **DR.**

VAISHALI KATJU, who recently won an NSF post-doctoral fellowship to study the evolutionary fate of duplicated genes. Assisting Dr. Bergthorsson in his research is **KELLY FITZPATRICK**, Senior Research Technician and a recent UNM Biology undergraduate, and **JAMES FARSLAW**, a



Biology honors student. Aside from his research, Dr. Bergthorsson also will be teaching Genetics and Experimental Evolution.

Charles Cunningham

Charles Cunningham originates from Glasgow, Scotland. He graduated with a B.Sc. (Hons) in Biochemistry from the University of Glasgow in 1981, and a Ph.D. in transplantation immunology from Aberdeen University in 1985. He continued his post-doctoral research in Aberdeen, focusing on maternal antibody responses during pregnancy. In 1988, he was appointed Scotgen Senior Research Fellow at the Department of Molecular & Cell Biology and worked extensively on genetically modified antibodies before being appointed to the faculty in 1992. During this period, Dr. Cunningham forged a close collaboration with Professor Chris Secombes of Aberdeen Zoology Department,

which resulted in seminal contributions to the field of fish immunology, in particular, salmonid cytokines and their receptors. To pursue his interest in marine immunology, he joined the Sars International Centre for Marine & Molecular Biology in Bergen, Norway in 1997 and led the Comparative Molecular Immunology group, where

"I look forward to being a member of such a vibrant department."

he expanded his research into oysters and agnathans (jawless fish) to investigate cytokines and hematopoietic transcription factors.

In 2004, Dr. Cunningham was appointed Visiting Scholar at the Hollings Marine Laboratory in Charleston, SC and Adjunct Research Associate Professor at the Department of

Biochemistry & Molecular Biology at the Medical University of South Carolina. Through collaborative research with the Marine Genomic groups in Charleston, Dr. Cunningham hopes to identify the genes and molecular pathways that underpin the immune system of the Eastern Oyster.

Dr. Cunningham joined the faculty in August 2005 as part of the NIH-funded CETI program. As well as continuing his research on oyster immunity, he will begin a program of research investigating the molecular responses of the human parasite *Schistosoma mansoni* to immunological and environmental stress. *S.*



mansoni is the causative agent of the debilitating human disease schistosomiasis, which affects more than 200 million people in the developing world. He also will be teaching Immunology in the spring 2006 semester. "I look forward to close and fruitful collaborations with my new colleagues and to being a member of such a vibrant department," said Dr. Cunningham.

Prairie Dogs Going Back to Their Roots

Mike T. Friggens

Established in 1989 by the UNM Biology Department, the Sevilleta Long Term Ecological Research Project (SevLTER) is an NSF-supported initiative aimed at understanding how physical and chemical constraints affect dynamics and stability in an arid land ecosystem. SevLTER research generally focuses on Chihuahuan desert grassland and short grass steppe ecosystems found in the northeastern region of the Sevilleta National Wildlife Refuge (NWR), 60 miles south of Albuquerque in central New Mexico. One area of SevLTER research examines the role of small mammals in the dynamics of these grassland ecosystems. While ongoing projects considering desert species such as kangaroo rats, pocket mice, wood rats, grasshopper mice and cactus mice are making significant contributions to the ecological literature, there is a keystone species that has been notably absent from this system: Gunnison's prairie dog (*Cynomys gunnisoni*).

This year, with funding from New Mexico Game & Fish Share with Wildlife and T&E, Inc., SevLTER researchers and Biology graduates **MIKE FRIGGENS**, Project Manager of the Sevilleta LTER Project, and **DR. ANA DAVIDSON** worked alongside U.S. Fish & Wildlife Service personnel and a multitude of volunteers to see Gunnison's prairie dogs return to the McKenzie Flats region of the Sevilleta NWR. This ambitious project not only sought to relocate about 300 individuals from rail yard land slated for development in downtown Santa Fe, but also established an experimental layout at Sevilleta conducive to examining the effects of Gunnison's prairie dogs on the pristine short grass steppe where these critters were known to be plentiful some 30 years ago before being exterminated.



On the move, female prairie dog with ear tag awaits release on the Sevilleta NWR. (Photo: Mike Friggens)

The relocation to McKenzie Flats was an arduous, summer-long affair involving 327 individuals. Mike and Ana will recapture the dogs in early spring 2006 to see how many survive their first winter on Sevilleta NWR. At present, the dogs are free and dramatically changing the landscape with their industrious digging and clipping as they prepare homes and build fat stores for hibernation. Given their status as keystone ecological engineers, there are high hopes that the new colony will maintain the grassland by preventing shrub encroachment.



Mike and Ana introduce a prairie dog into an artificial burrow at Sevilleta NWR. (Photo: Sharon Davidson)

"The effort was a tremendous learning experience."

Invaluable Vivian Kent, Graduate Program Coordinator



One of our most valued and long-serving staff members is Vivian Kent. Many of you, especially former graduate students, will remember Vivian well for the ever-constructive help in facilitating the progress of our students through their respective programs. She is the main liaison with the Office of Graduate Studies, Registrar's Office, Scheduling Office, and Arts & Sciences. Now in her 15th year of continuous service to the Biology Department (with 30 years at UNM), we applaud Vivian's huge impact on our instructional programs and in keeping the Main Office functioning efficiently with the help of **CAROL-ANN GRIFFIN**, **JACQUI HUDSON**, and a work-study employee.

For more information, visit <http://sev.lternet.edu>

Meet the Accounting Team

Tucked away in the basement is the accounting team, our financial guardians. **HEATHER PAULSEN** recently joined the department as head accountant, replacing **Pat Weinbrecht**, who served for two years in this capacity. Joining Heather is accountant **JAMES SANDOVAL**, who replaces **Lupe Atencio**, who now administers Dr. Maggie Werner-Washburne's IMSD program. **ANNE OZAKSUT** is the new part-time accounting clerk and **ERIC YOUNG** is the new work-study student from Alabama. We welcome the new staff members to Biology and thank them as well as our regular accounting support staff, **RENEE SANTILLANES** and **TOMMIE SUE NIELSEN**, for helping us to stay on top of an increasingly complex financial operation.



L to R: Renee Santiillanes, James Sandoval, Anne Ozaksut, Tommie Sue Nielsen, Heather Paulsen, and Eric Young.

Student Profile—TERESA MADRID

Teresa Madrid was born and raised in Santa Fe, NM. Initially she studied Criminology in California with the intention of a career in forensic science, however, the experience gained during an internship on an educational biology conservation program in Florida left her with a desire to pursue biological sciences. After transferring to UNM to major in Biology, Teresa was selected for the Initiative for Minority Student Development (IMSD) program, which offers students from minority groups the chance to engage in scientific research and ultimately progress to graduate studies. In addition to taking undergraduate classes, Teresa also works 10–15 hours per week in the laboratory under the supervision of her mentor, **DR. COEN ADEMA** from the Biology Department's Parasitology group. Her research project focuses on immune genes in the snail, *Biomphalaria glabrata*, in particular the increased response of Fibrinogen-related proteins (FREPs) following infection with schistosome parasites. Schistosomiasis is a pervasive parasitic disease that is endemic to parts of Africa, Central and South America and ranks second only to malaria in mortality, and requires a snail intermediate host to complete its life cycle. Since very little is known about invertebrate immunity, she has been actively involved in a scientific consortium whose aim is to sequence the snail genome. Despite Teresa's tough schedule, she enjoys the challenges of laboratory research, working and interacting with a dynamic group of scientists as well as the chance to be at the forefront of pioneering research here in the Biology Department.

Teresa's poster presentations of her research include the annual Biology research day, IMSD symposia and the SACNAS conference. Recently, on behalf of Biology Department **PROFESSOR AND CHAIR ERIC S. LOKER**, she addressed the UNM Board of Regents' Chair to solicit



"It's been a rewarding experience in a wonderful department."

the need for building renovations as well as an upgrade of the facilities in the Biology Department, all of which she felt were extremely vital in prospective student recruitment—"Students are discouraged by poor surroundings." Aesthetics are important!

Teresa will graduate in December 2006 with a B.S. in Biology and will advance her career prospects by attending graduate school. Her long-term goals are research, academia or teaching. "For committed students, the Biology Department and its involvement in IMSD have provided the support and encouragement to enable me to aim high and succeed in my endeavors. It's been a rewarding experience in a wonderful department," said Teresa.

Congratulations to Our Spring Graduates!

ANA D. DAVIDSON, Ph.D. (J.R. Gosz & J.H. Brown), The Comparative and Interactive Effects of Prairie Dogs and Banner-tailed Kangaroo Rats on Plants and Animals in the Northern Chihuahuan Desert.

KEITH GELUSO, Ph.D. (J.H. Brown), Influence of Substrate Moisture and Seed Distribution on Foraging Behaviors and Strategies of Granivorous Rodents.

SERGIO FLORES-RAMIREZ, Ph.D. (R.D. Miller), Evolutionary Patterns in the Cetacean—Major Histocompatibility Complex.

ETHAN P. WHITE, Ph.D. (J.H. Brown), Temporal Scaling of Diversity: A Detailed Analysis of the Species–Time–Relationship.

APRIL M. WRIGHT, M.S. (R.D. Miller), Characterization of a Unique MHC class I locus in the Marsupial, *Monodelphis domestica*.

We wish you the best in your future careers!



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UNM Biology Newsletter—Stay Connected

We hope you enjoy this Biology Newsletter. This publication will enable us to keep you up-to-date with the latest news from the Biology Department. Any feedback, contributions or ideas for stories can be e-mailed to Anne Rice (aerice@unm.edu). To ensure you receive future issues and stay connected, register or update your details through the UNM alumni directory at www.unmalumni.com via the *Online Community* feature.

There Are Many Ways to Say “Thank You”—Donating to the Biology Department

You can be part of the success of the Biology Department by supporting the Biology Department Chair’s Fund. This fund, through the generous support of alumni and friends, provides the resources needed to sustain students and faculty through scholarships, research funding, and other general needs the Chair can provide on an “as needed” basis. To find out more information on funds that are of interest to you, please visit our website at <http://biology.unm.edu>, where you also can make an online donation; or contact *Deborah Dobson, Associate Director of Development, 245 Ortega Hall, MSC 2120, 1 University of New Mexico, Albuquerque, NM 87131-0001*, tel. (505) 277-3194, e-mail: ddobson@unm.edu.

IN MEMORIAM

Dr. Lynn Hertel Remembered

We were all saddened in the spring of 2005 by the untimely death of Dr. Lynn Hertel, Research Scientist in the Biology Department. Already an R.N., Lynn earned B.S., Masters and Ph.D. degrees in our department, the latter conferred with distinction in 2004. Lynn distinguished herself with a productive research career, playing an instrumental role for two decades in maintaining the department’s research efforts in parasitology and comparative immunology. She was one of the world’s authorities on the biology of the snail-transmitted schistosome parasites that infect humans throughout much of the tropical regions of Africa, Asia and South America. Dr. Hertel also was the resident expert for many of the techniques employed by scientists in the Biology Department, and was in regular demand for advice and assistance. She was known for an utterly unflappable and nurturing demeanor, and for steady and persistent effort that paid off with surprising and novel scientific dividends. She was also a connoisseur of food and wine, an expert skier, diver and racquetball player, an avid gardener with a particular expertise in orchids, and a devoted wife and mother. A graduate student award has been created in Dr. Hertel’s memory. To make a donation to this fund, see the information above.

