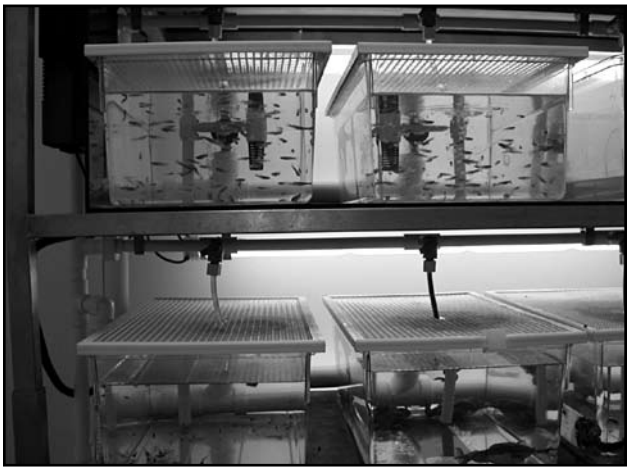
BIO-FEEDBACK
DEPARTMENT OF BIOLOGY

June, 2004 Newsletter Volume 4

Adult African Clawed Frogs



Tanks in one of Aquatic Holding Systems

South Fork Brook Trout on Display

(See Aquatic Learning Center on page 5)

FROM THE CHAIR

Karen Klyczek

Greetings! It has been another interesting year for the Biology Department. One of the most exciting pieces of news was the announcement that the Biology department may be moving into the Rodli Commons building once the new student center is built and food services are transferred there. The extensive remodeling of Rodli Commons will probably not begin until 2007-08, but we are already dreaming about the possibilities for new and more functional laboratory spaces. In the meantime, a laboratory modernization grant will result in the remodeling of underutilized lab spaces on the second floor of the Ag-Science building. The new space will include a cell imaging and analysis lab. Another lab mod grant funded the purchase of new compound and dissecting scopes for the Biol 100/150 labs (the old gray scopes are history!)

We have another new faculty member, Dr. Elaine Hardwick, a microbiologist who joined the department in Fall 2003. She is profiled in this newsletter, as is Dr. Timothy Lyden, who was hired in 2001 to teach our new Anatomy and Physiology course. These new faculty have brought energy and enthusiasm and more opportunities for undergraduate research. Once again we are sending a large contingent of students to NCUR in Indianapolis. Each year more students are looking for opportunities for research, internships, or other hands-on opportunities to enhance their undergraduate experience. If your place of business offers internships, or if you know of good opportunities, please share that information with us. Thanks, and keep in touch!

NEW FACULTY INTRODUCTION

DR. TIMOTHY LYDEN

Hi, let me introduce myself to you. I am Dr. Timothy Lyden and I joined the UW-RF Biology faculty in the summer of 2001. Unfortunately, I have been quite busy since then and so we never got around to telling you folks about me! Hopefully this little bio will fix that. As I said above, I came to River Falls in 2001 to accept a newly created Human Anatomy and Physiology position in the department. It had been decided in 2000 that the department needed a stronger focus on the biomedical aspect of our program to better serve the approximately 2/3 of our students who are pre-professional. In particular, it was determined that medical schools today really place a significant emphasis on a core of biology courses that include Anatomy and Physiology. Following an extensive and (I think) successful search, I was recruited to join the team here and add my background and experiences to the mix.

Dr. Lyden with some of the new A/P models acquired from a successful UW-RF Foundation Grant in 2002. These have greatly improved the introduction to human biology that our students receive.

I joined the department after working for 5 years at The Ohio State University Medical School where I held Senior Post-doc and then Research Scientist positions in the Division of Molecular Medicine and later at the newly formed Heart and Lung Institute. Before OSU, I spent 5 years at Wright State University Medical School in Dayton, Ohio as a Laboratory Facilitator and then Research Assistant Professor within the Immunology and Microbiology Department.

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Throughout most of these 10 years, my career was mainly focused on research related to both normal and abnormal development of the human placenta. I became interested in this area of research early in my graduate years at the University of Maine-Orono where I obtained a Bachelor's degree in Microbiology (1986) and then my Ph.D. in Biological Sciences (1992). During a research fellowship to the University of Liverpool in the UK (1989-90), I became extremely interested in the differentiation processes of placental development. This included a fascinating aspect which involves unique genetic elements called human endogenous retroviruses or hERV's. Although these are related to retroviruses like HIV-1, hERV's are actually part of our normal genomic make-up. Conservative estimates place the amount of our DNA that is retroviral in nature at about 0.5-1.5 percent! More interesting is the fact that these sequences produce proteins and do so preferentially in less differentiated cells. There is ample evidence now that some or many of these proteins then contribute to various cellular processes. Needless to say, I love the subject and after a relatively successful start to my career (23 publications, 55 abstract presentations and $4.5 million dollars in grants participation) sought to share that interest in human biology with students here at UW-RF.

Since arriving, I have managed to stay busy most of the time. In 2001-02, I mentored three students in research projects related to my interests in placenta and one of these presented a poster at the 2002 National Conference on Undergraduate Research in Whitewater, WI. In 2002-03, I mentored two more students and we presented two posters at NCUR 2003 in Salt Lake City, UT. This year, I have mentored four students and we are presenting four posters at NCUR 2004 in Indianapolis, IN. In addition to my laboratory work, I have also been busy building a strong program in human biology with the new Anatomy and Physiology courses (Bio 341-342) as the cornerstone. Although we started off with relatively little teaching material after several significant grants, some funding from CVTC and a donation from local hospitals (along with great deals from Ebay), we have built-up a reasonable program. Speaking of CVTC (Chippewa Valley Technical College), in 2002 I helped develop a new relationship with this sister institution here in River Falls to assist them training nursing students for their LPN and RN

NEW FACULTY INTRODUCTION

programs. This allows the students to avoid long trips to Eau Claire in the winter and provides the department and the human biology program with a considerable amount of funding (from rent of our space and equipment). Collectively, our Anatomy/Physiology program and the Nursing program service about 150-200 students a year. I also teach a non-majors Human Biology course that puts the total closer to 250 students a year in this area. In my spare time, I serve as the faculty advisor for a new student group called SURSCA which seeks to improve/enhance the RSCA (research, scholarly and creative activities) environment here on campus. This group was formed in 2002 and has mounted two extremely successful fall Evening Research Events that we call "An Evening of RSCA" . The second one had 35 presenters and about 75 people in attendance. SURSCA is also instrumental in encouraging students to attend national meetings like NCUR. So far we have had 28, 30 and 27 students attend each of the last three NCUR meetings. Please feel free to checkout our webpage at www.uwrf.edu/sursca.

OK, last of all, to assist my research and teaching of advanced "biotechnology" and biomedical-related subjects I have been working with a group from CAFES to develop a new campus-wide "Cellular Imaging and Analysis Center" which will be housed on the second floor of the Ag-Sci Building. In December, we wrote a successful laboratory-modification grant and work will begin this summer.

Well that about covers it, glad to finally get a few minutes to say "Hi", and thanks to all of you alumni who helped to build such a wonderful department during your time here. I hope to do the same.

DR. ELAINE O. HARDWICK

Greetings… Elaine O. Hardwick here…the newest addition to the UW-RF Department of Biology. I am a microbial ecologist by training with a research interest in bacterial population and community dynamics and characterization of the metabolic potential of environmental bacteria. I received my terminal degree from the Institute of Ecology, University of Georgia (Athens, GA) and have been teaching at the university level since 2000.

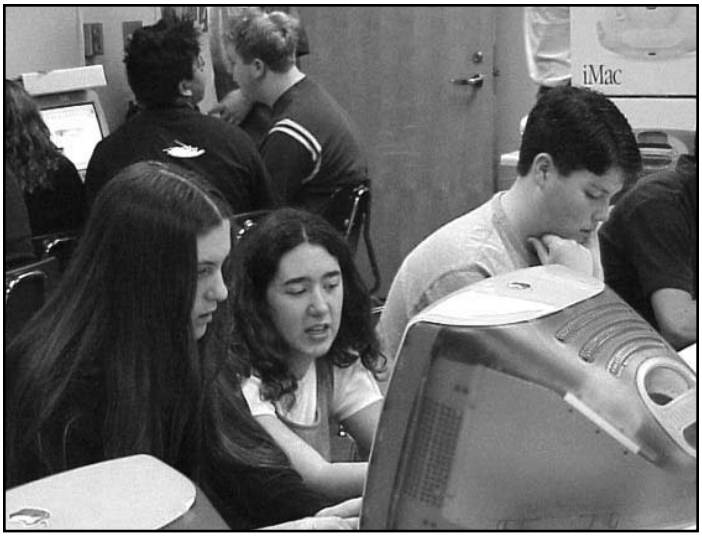
At the present time, I have several UW-RF undergraduates (Greg Walter, Jeni Ness, and Jessica Martin) completing molecular analyses of freshwater bacterial isolates that can utilize phenol (an industrially derived anthropogenic pollutant) as their sole carbon and energy source. Another undergraduate (Wes Normington) has completed a phylogenetic analysis of a soil bacterium he isolated for a non-ma-

Microbiology & Ecology Word Search

S	C	P	H	Y	L	O	G	E	N	Y	E
T	A	H	L	U	B	R	W	E	C	B	M
A	T	P	C	P	K	M	M	H	K	P	I
P	T	P	R	C	N	A	M	U	H	R	F
H	E	C	O	L	I	I	C	I	Y	O	R
Y	L	L	D	P	C	N	N	R	R	K	B
L	O	R	R	C	H	A	B	I	T	A	T
O	R	S	O	D	E	A	E	T	C	R	V
C	P	C	Y	I	T	B	K	T	A	Y	J
O	L	I	G	T	H	V	E	A	E	O	K
C	O	L	I	F	O	R	M	I	Y	E	O
C	M	N	V	F	I	H	G	T	Y	E	P
U	Q	C	B	A	E	U	H	J	M	M	E
S	W	E	T	O	Y	R	A	K	U	E	E

Bacteria Cocci Coliform *E. coli*
Eukaryote Habitat Human Niche
Phylogeny Prokaryote Rod *Staphylococcus*

CASE IT!



Case It! is a NSF-sponsored project to promote collaborative case-based learning in biology education worldwide, using molecular biology computer simulations and Internet conferencing. The project began in 1995 at a summer BioQUEST workshop, and has been supported since then by three grants from the CCLI program of NSF (we are currently in the first year of a 5-year grant to develop cases based on protein analysis). Biology staff currently involved with the project include Mark Bergland and Karen Klyczek; Kim Mogen and Douglas Johnson were part of the team for our previous grant. Mary Lundeberg of the College of Education, now chair of the Teacher Education department at Michigan State University, has supervised a number of biology education majors who have served under her direction as research assistants (e.g., Gretchen Meirhofer is shown below working with students from River Falls High School who are interacting with university students from UW-RF and the University of London).

Our primary focus is to develop cases based on genetic and infectious diseases of humans and domestic animals including HIV, West Nile, breast cancer, Alzheimer's, cystic fibrosis, Huntington's disease, and DMD, among others. To give students tools for case analysis, we create computer simulations to analyze any DNA or protein sequence using a variety of techniques (DNA gel electrophoresis, restriction enzyme digestion, Southern, Western and dot blotting, PCR, and ELISA). After analyzing sequences associated with the cases, students put together web-based posters and discuss results with their peers at UW-RF and other institutions, using an integrated web editor/conferencing system created by Marlys Nelson and her students at ITS.

High school and university educators from throughout the U.S. have downloaded Case It software, as have researchers and educators from a number of foreign countries including Mexico, France, Germany, England, Australia, Canada, Egypt, Argentina, Chile, China, Portugal, and Grenada. The software is free of charge for educational use, and we encourage any interested alumni to download it and give us your feedback (see http://www.uwrf.edu/caseit/caseit.html for details).

New Wildlife Ecotourism Graduate Certificate Program

UW-River Falls now has a formal agreement with Watchable Wildlife, Inc., to offer a graduate certificate in wildlife and nature tourism. Watchable Wildlife is a private organization that was originally established by natural resources agencies to promote nature tourism for the benefit of both wildlife and local communities, so that these communities can preserve rather than develop wildlife habitat. The certificate program is the first of its kind in the country.

As part of this effort, Kelly Cain and Mark Bergland are team-teaching the second course in the series, Wildlife and Visitor Management in Nature Tourism. Students in the class are developing nature tourism management plans for a wide variety of natural habitats from Wisconsin to Nicaragua. We are excited about being involved with this new program, as it is unique in the UW System and reflects a growing trend in the field of wildlife resource management. In addition, Kelly Cain is developing and teaching online courses that allow students in other parts of the country to receive training towards this graduate certificate. For more information, contact kelly.d.cain@uwrf.edu or mark.s.bergland@

New Aquatic Learning Center

Scott Ballantyne, John Wheeler, and John Ford

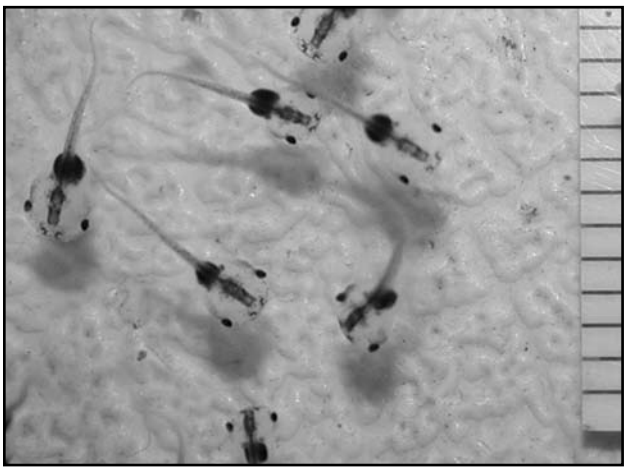
There have been a few more puddles on the fourth floor recently (we hope there are none on the third!). Thanks to a generous donation from the UW-RF Foundation, we are in the midst of creating an Aquatic Learning Center (or ALC for short). What is the ALC? Physically it consists of a set of systems of integrated aquatic tanks that recirculate purified water from common, temperature-controlled reservoirs. The ALC will function in part as an aquatic zoo, showcasing the various fish species present in our local "Kinni" as well as in a typical northern Wisconsin lake. The ALC also houses African clawed frogs, which are a premier model system for studies in animal development and gene regulation.

The ALC is more than just a display. It is a place for students and faculty to get their hands (and sometimes clothes) wet, to get involved, and to learn. Aquatic-based lab projects are now part of several biology courses including General Ecology, Ichthyology, Animal Cell Culture, and Molecular Biology. These projects explore unanswered questions and give students the opportunity to truly become scientists. Several students are also involved in independent aquatic-based research. For example, Amanda Slaughter and Jennifer Hermey are trying to understand why we tend to see an elevation in African clawed frog tadpole mortality during metamorphosis. Their research has resulted in the production of large numbers of embryos and tadpoles here at the Biology Department. Students in Animal Cell Culture and Ecology subsequently used these embryos and tadpoles for investigations and experiments.

From its inception the ALC has been a group effort. Three biology department members with diverse specialties (ecology, molecular biology, and ichthyology) worked together to prepare the initial proposal. The project has had its ups and downs – algal blooms, technical glitches, plumbing hassles, and logistical dilemmas – but we are hopeful that everything will work out in the end. As the ALC evolves we envision the possibility for many additional interactions both on and off campus. For example, we are excited about a future collaboration with the physics department in which a student will help create a customized digital water control monitoring system. We included an ALC-based lab in our MSE biotechnology workshop this past summer. These current and future educators used in vitro fertilization to generate frog embryos and experimented with various methods for freezing frog sperm. The response to the lab was positive and it seems likely that UWRF and the ALC will help enrich the science curriculum in many

South Fork Sculpins

Aquatic Holding System and Vertical Display Unit



African Clawed Tadpoles

ALUMNI NEWS

LOIS LUNDBERG LAEHN (1967) taught six years at Durand High School and farmed the family farm for 25 years. Lois was also a 4 –H youth agent, worked as ESS worker at Pepin County Human Services and is presently program assistant for Pepin County Senior Services. Lois and her husband Charles have 3 grown children and 4 grandchildren.

DANIEL P. NELSON (1972) resides in Stillwater, MN where he is a research chemist at Veterans Affairs Medical Center and assistant scientist at the University of Minnesota. Nelso136@tc.umn.edu

LOU WILLIAMSON (1974) resides in Amery, WI. After 25 years, he has returned to UW-River Falls in pursuit of his certification in education. He will be practice teaching at New Richmond and continue working on his master's degree while looking for a teaching position. He has enjoyed returning to the classroom and taking biology courses again. He claims, "there isn't a soul left from my first trip through the 4th floor halls of Ag-Sci."

OSMAN ADAM ELRASHEID (1977) worked in the camel breeding center as scientific officer dealing with invitro fertilization. He is also preparing a project for Camel Genetic map for one hump camel in Oman.

ANNETTE STROM (1989) resides in Duluth, MN. Annette won the Seagate Science Mentor of the Year 2003 award for her work with middle school science students.

LISA HANSON (1990) resides in Stillwater, MN. Lisa is a forensic scientist (Questioned document Examiner and Crime Scene Team Member) at the Bureau of Criminal apprehension, Minnesota State Crime Laboratory.

TAMMY GLABE PRATT (1993) resides in Rolla, MO. She has recently been promoted to Associate Director of Academic support programs which oversees Disability Support Services, Testing Center, and Academic and Learning Resources. She is also assisting the development of the Center for Educational Research and Teaching Innovation. She is using her Biology degree in an atypical application. The biology background has contributed significantly to her success in communicating and working with the scientists and engineers at the University of Missouri-Rolla. She has two children and her daughter Crystal has a passion for worms and anything that is found in dirt. The Pratt family enjoys camping, hiking, visiting nature centers, and exploring and absorbing the life of the outdoors. tpratt@umr.edu

ELIZABETH HAMPTON SAUSKER (1995) resides in Middletown, CT where she is a safety scientist within the Global Pharmacovigilance and Labeling Department for Bristol-Myers Squibb Company.

LANCE SVOBODA (1996) is chief resident at the University of Minnesota. Lance is a fourth year resident who earned his DDS from the University of Minnesota in 2000. His interests include maxillofacial trauma, contaminated bone grafts and implants. Lance recently completed a 2-month foreign rotation in Scotland focusing on head and neck oncology. Lance will graduate on June 19, 2004.

LEIGH (SEERY) HARRELL (1999) resides in Somerset, WI. Leigh has been working at 3M for two years in Drug Safety and Information as a Pharmacovigilance Specialist. laharrell@mmm.com

KARI WEBERT (1999) resides in Eau Claire, where she is attending Chippewa Valley Technical College to obtain an associate degree in medical Laboratory Technician. kwebert@student.cvtc.edu

MEGAN ELDER (1999) resides in Fridley, MN, where she is employed at St. Paul's Como Zoo as a primate Zookeeper working with several species of apes, monkeys, and lemurs. Also serves as Assistant Registrar responsible for primate and hoofstock animal records. She was recently promoted to lead orangutan husbandry trainer and primate enrichment program co-coordinator. Megan. elder@ci-stpaul.mn.us

JEAN HORAK (1999) resides in Tarpon Springs, FL where she is working as the quality control manager at a small nutritional supplement company. The company is starting to enter the pharmaceutical industry now as well. jeanhorak@hotmail.com

CARA SYTH (2000) resides in Sun Prairie, WI. Cara has finished her third year of medical school at the University of Wisconsin. She loves medicine and will be going into the field of OB/Gyn for her residency training. Although it isn't set in stone quite yet! carasyth@hotmail.com

JOE AILTS (2000) resides in Deer park, WI. Joe is currently working for NeuroScience, as technical support and a product development specialist. His company does Neurotransmitter and Hormone testing and research for many Health Care Practitioners around the world. joea@neuroscienceinc.com

ENA (SAGE) RASMUSSEN (2001) lives in Zimmerman, MN with her husband Eric. They had their first son Tristan James on April 8, 2003. Ena is currently teaching 7th grade Life Science in Plymouth. Enarasmussen@yahoo.com

JEANNE STOCKER (2001) resides in Rochester, MN . After graduation, Jeanne went into industry working as a lab analyst at 3M for two years, working in one of their technology centers doing analytical work in proteomics. In July, 2003, she went back to school in the graduate program at Mayo. Her focus is on molecular pharmacology and experimental therapeutics. Once she has earned her Ph.D., she would like to either work at a cancer center or become involved in academia. Jstocker23@yahoo.com

IAN PARZYCK (2002) resides in Victoria, MN where he is currently an A.P. Biology, Honors Chemistry, and Earth Science Teacher at Holy Family catholic High School in Victoria, MN. He is also assistant football, boys basketball, and track coach. parzychi@holyfamilycatholichs.org

DANELLE HAUGEN (2002) resides in Brooklyn Park, MN where she is working at Protein Design Labs, Inc. PDL manufacturers humanized antibodies for biopharmaceutical use. haugenhillshires@hotmail.com

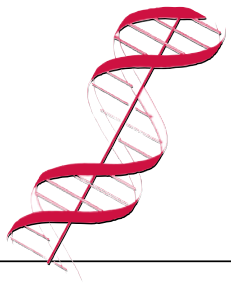
OUTSTANDING SCHOLARLY AND TEACHING RECOGNITION

Mark Bergland received the 2003 Outstanding Faculty Member of the Year Award, Science Division, College of Arts and Sciences, an award which is based on votes from graduating seniors and alumni. Dr. Bergland's nominations noted his enthusiasm and for making his subject exciting. One student stated, "Dr. Bergland has such an enthusiasm for biology that it's hard not to be enthusiastic as a student. As my freshman biology professor, his teaching and his class solidified my decision to major in biology." Another student remarked, "He pushed me to be a better teacher. Not just good, but great."

Mark also received the 2004 College of Arts and Sciences Scholarship award. This award was recently established to recognize scholarly activity in the social sciences, humanities, and mathematics/sciences. A new "Faculty Awards Wall" has been established in the lobby of the Fine Arts building to display these and other awards from the college. Dr. Bergland has over 30 professional publications, including articles, monographs and published computer software. He has also obtained numerous external grants, including four consecutive grants for 15 years of support, totaling $828,000 from the National Science Foundation. His nomination letter states: His consecutive grants "speaks to the innovative nature of his projects…he has numerous publications in high-quality science education and educational research journals. Through dozens of presentations and workshops, biology educators around the world have been exposed to the Case-It project. The impact of this project on science education worldwide has been well documented."

Need an Intern?

Do you have a place in your business for an intern? A student intern may be a great way for you to fill a workplace niche or try out a potential future employee. Our biology majors are eager to get biology-related work experiences of several kinds, whether in the field, lab, or in the clinic. Some students can work during the school year as well as in the summer. Students can earn between 3-6 credits for their work. Internships are easy to set up and can provide wonderful learning experiences for the student and benefit the employer as well. If you are interested or just want to know more, call or email Dr. Kim Mogen



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Please let us know what you've been up to. In the next newsletter we will share as much alumni information as you give us permission to do so. You can call us, email us, mail us, or just fill out the form on the web: www.uwrf.edu/biology/alumni-form.html. Don't forget to visit our departmental home page: http://www.uwrf.edu/biology/welcome.html.

BIOLOGY ALUMNI INFORMATION

Visit our departmental homepage: http://www.uwrf.edu/biology/

Name:_____

Address:_____

Phone:_____

Email:_____

Years attended UWRF:_____

May we share this information with your fellow biology alumni? Yes No

Employment or other news:_____

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May we share this information with your fellow biology alumni? Yes No

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