



## A Note From the Chair



Dear Friends,

This academic year has once again brought a host of activities to the department. Our faculty continue to be engaged in important research that brings recognition to them and the department. Our students are also making major contributions to the research and teaching missions of the department, and you'll see some of their stories in this issue. New faculty have arrived to assist us in our endeavors, and you'll meet them here. Faculty and students are busy with professional activities both on and off campus, constantly contributing to the level of excitement in our midst. The grants and awards they receive are a source of pride for all of us. I am always impressed by the breadth of activities of members of this department; it makes it a wonderful place to work.

**Dr. Jeffrey Doering,**  
**Professor/Chairperson**

Thank you all for responding to the special requests for help that I have made. I very much appreciate your dedicated service to students and the department as a whole. Best wishes for a productive and enjoyable rest of the semester.

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## The Rosi-Marshall Lab Rides the Waves (and Makes a Few Too)

If you happened to watch the NBC Nightly News or explore msnbc.com, you may have noticed a story about the controlled flooding of the Colorado River and the teams of scientists that were on hand to study the effects. In watching that story, you may have noticed a young woman filling a graduated cylinder, sporting a Loyola sweatshirt. And though you may not have heard Dr. Emma Rosi-Marshall say a word, her presence (and the presence of Graduate Student Holly Wellard, seen in the background, wearing dark sunglasses) speaks volumes about the type of pertinent research being done by her lab.

The presence of the Rosi-Marshall Lab at the flooding experiment comes off an addendum to the grant that has seen the lab attempting to reconstruct the food web of the endangered Humpback chub, (*cont. on p. 2*)



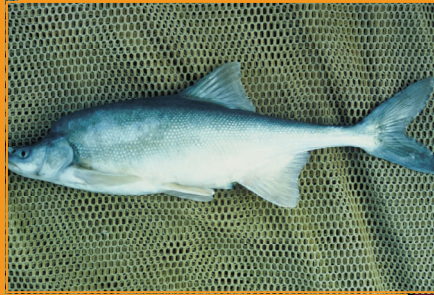
The Rosi-Marshall Lab has been working in the Grand Canyon on the Colorado River to help save the native fish the Humpback Chub.

(cont. from p.1) a fish native to the Colorado River. Dr. Rosi-Marshall and her team were there for the experiment attempting to gauge the effect the flooding would have on the distribution of food materials.

This project stands as the latest project by the lab to enter the realm of popular discourse. The Rosi-Marshall Lab, in conjunction with colleagues from University of Notre Dame and Indiana University published a paper, "Toxin in Transgenic Crop byproducts may affect headwater stream ecosystems", in the October 9, 2007 issue of PNAS. The paper has garnered a great deal of attention not only within the scientific community, but in articles and blogs on both sides of the GMO debate. The paper has even received international attention as its publication came only a month prior to the announcement by European Union Commissioner of the Environment that he planned to withhold approval for two Bt maize strains.

The research itself consisted of two primary procedures. The first involved side-stream litter traps to determine the extent to which unharvested crop byproduct had entered the stream channel. The second procedure involved feeding trials in the Loyola Artificial stream facility to determine the effects of Bt byproduct consumption would have upon caddisflies. Caddisflies are a moth-like aquatic insect that bears a great deal in common to the lepidopteran that Bt toxins target.

With ecological issues becoming increasingly prevalent in popular discourse, Loyola is proud to have scientists doing work that shifts the focus of debate and are bringing pertinent issues to the forefront. Click here to view the MSNBC story in the Colorado River Valley.



Photos: (from top right) 1. Holly Wellard with a Ph.D student from the University of Wyoming riding the white water rapids of the Colorado River. 2. Paul Hoppe hams for the camera while everyone else is hard at work. 3. The species in question: the Humpback Chub. (Below) 4. Paul standing before one of the more aesthetically pleasing laboratories the world has to offer.

### *Did you Know?*

*In 2007, Dr. Emma Rosi-Marshall was awarded a Edwin T. and Vivienne F. Sujack Award for Teaching Excellence in the College of Arts and Sciences. Two faculty members from CAS receive the award each year, with a cash reward given to the respective departments for teaching related use.*

*To learn about the Biology Dept.'s nominees for 2008, go to page 10.*



# Tales of a Workstudy

By: Daniel "Tiny" Mikos

A work study student's job can change from day to day. One day you could be cleaning up after a lab, the next you could be pouring Petri plates for a microbiology class, and then you could be delivering mail or collating handouts to students the day after that. While the jobs you perform can vary greatly, the skills you learn can be useful for the rest of your life. Most of the training you get is "on the job", everything from how to make a stock solution of sodium acetate, to using Microsoft Excel to form the chemical inventory list for all the laboratories in the biology department.

I am working for Chris Calderaro in the Biology department stockroom. He treats all his work-study students with respect, and understanding. My responsibilities with Chris, range from managing the departments chemical inventory to moving boxes and other items around the stockroom. Before I worked as a work study, the only professors I knew were the ones that I had in class, and I had rarely spoken to them outside of that environment. Now I interact with many of them almost every day.

One of my duties required that I help Dr. Lammers-Campbell to set up the General Biology laboratories. It had been a long time since I had last had to know the phyla of different species, or had to set up specimens for dissection. Being a transfer student and working on a biology major myself, it had been a long time since I had the opportunity to get back to the basics that most people forget after their first semester. It was a fun "relearning" experience.



Above Right: Many of Dan's duties have been centered around the stock room, stocking shelves and taking in deliveries.

Below: Dan takes a moment away from working on his beloved chemical inventory to strike a pose for the camera.



Working alongside professors and the staff opens your eyes to what happens behind the scenes; to see what it takes to run a classroom or laboratory. It takes hard work and a will to do what needs to be done so that others may learn and grow academically.

Working with the faculty allows you to make contacts and friends that you would not have been able to make just being a student.

I have made many friends working alongside the professors in the bio department like Dr. Schroeter, Dr. Pickett, and Dr. Holgado just to name a few. Working alongside some of these great scientists is a very exciting endeavor. I like how they respond with interesting tidbits that you would have to spend countless hours researching in a library whenever you ask about how something works. From explaining how a centrifuge operates to expanding on the importance of the sterile technique, these professors show that they are not only knowledgeable, but they genuinely enjoy what they do.

Working here has also had an impact on how I view the sciences. I now understand more about proper procedures and protocols, as well as, reasons why and how chemicals react the way that they do, which is important for any science major to know.

One major advantage to being a work-study student is that the schedule of work is more flexible than a "regular" job. This is important because most students have classes at different times, which means that they are not able to work a "normal shift". The supervisors know this and are willing to work with you to accommodate your already hectic schedule.

Whether it has been the job experience, the wonderful faculty, or the learning and relearning of material, my experience here as a work-study has been a wonderful preparation for the life I am embarking on, and I will cherish the valuable lessons that I have learned here for years to come.

## *A Few Proper Introductions:*

### **Gerald Buldak, Ph.D**



#### **So, could you tell us a bit about where you're from?**

Born and raised in the Southwest suburbs – the Joliet area. I did my Undergraduate at Illinois Wesleyan down in Bloomington. There I went and studied at the University of Illinois at Champaign. I worked with Gary Olsen down there. Collaborated between that Lab and Carl Woe's. At that time, we were working on the first Arcale Genome Project doing the *Methanococcus jannaschii*. I went on to the University of Illinois at Chicago where I studied under Sergei Mirkan for my PhD work in Molecular Genetics looking at DNA structure-function relationships. Particularly looking at sequences that are involved in various hereditary neurodegenerative disorders. They go under dramatic mutations. And from there I moved out to Maywood, and worked in Jodie Brewer's lab in the Department of Microbiology and Immunology. Working on B-cell to plasma cell differentiation mostly in mouse immune system but also working with a reductionist model system to dissect the function of one of the critical transcription (factors or vectors?) in that pathway. And I would like to continue that project, I've gotten Dr.

Brewer's blessing, so it's just a matter of getting the space.

#### **So, tell us a little about you, personally?**

I'm married. No kids. I have been married a little over three years.

In some capacity or another, a little less over the past few years, I have been a musician. I played classical trumpet all through college, picked up guitar when I was in grad school. I played acoustic. Mostly seventies stuff; Clapton unplugged, Harry Chapin, Gordon Lightfoot and stuff in that genre. Don't do much of either anymore. I am, of all things, a civil war re-enactor.

#### **Union or Confederate?**

Yes. I do both. There are die-hards on either side, but to me, it doesn't matter much. Come veterans day weekend, I'll be in the blue uniform most of the weekend. I still have enough of my lip left from my trumpet playing that during Veteran's Day or Memorial Day weekends are usually pretty busy going around. I usually play at Rose Hill Cemetery up here and several other places through the Chicagoland area. Outside of that, I'd probably say I'm pretty boring. Science, Music and history pretty much does it for me.

### **Catherine Putonti, Ph.D**



#### **Could you tell us a bit about where you are from?**

I came from Texas – Houston, to be exact. I was born in Dallas, then I moved to New Orleans, and then to Houston. I just moved in a little triangle. I did my undergraduate in computer science at Loyola University – New Orleans. Then I did my masters in Computer Sciences at University of Houston, my masters in Biology at the University of Houston and my PhD in Computer Sciences at the University of Houston. Not in that order though. It went Undergrad, Masters in CM, PhD in CM, Masters in Biology. And after that I was a research assistant professor at the University of Houston after I graduated.

#### **What was that brought you here to LUC?**

Coming from Houston, which is a very large city, we knew that we couldn't move down. Chicago, New York and LA to choose from. So, I came and I interviewed here and I liked everyone that was here, and thought that I could work here. So, when I was offered a position I took it. I know of a lot of places I would never want to work and this place wasn't on the list.

#### **Your working in the area of Bioinformatics. Could you explain what that is and what you do?**

Bioinformatics is the application of computers in the understanding of Biological data. So I specialize in sequence data: genomes, genes, pathogens. I'm very interested in bioterrorist agents, pathogens. I think they're very interesting. So, that is loosely what I do. My research has been based around developing diagnostic tests in order to detect the presence of pathogenic organisms in humans. I have a particular affinity towards viruses. I find them very interesting and extremely exciting. So, I do these massive computations where I can design signatures to recognize these particular pathogens. And they work very nicely, I'm happy to say. There might be a little luck involved there. But also that kind of drew me into looking at the interactions between pathogens and their hosts. So you can kind of monitor this at a sequence level and their a lot of different technologies you can use to kind of tease out information as to how they are interacting. So, that's mainly what I do.

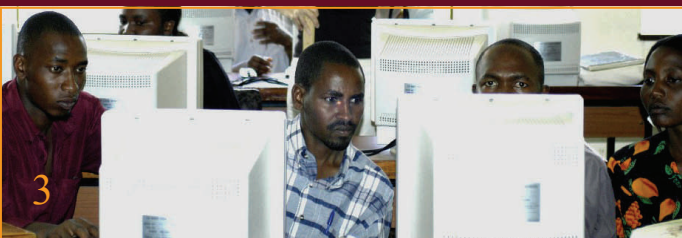
#### **That sounds like it takes up a good portion of your time. What do you do when you're not here?**

I like to listen to music and go to shows. Sleeping is really good too. One thing I'm enjoying about Chicago is that it seems that most bands that come through stay two nights. So I have two chances to go see them. People used to skip over Houston, I used to have to drive to Austin. I'm a huge Wilco fan. I've already seen them twice since I've been here. I like bands like Arcade Fire, and Architecture in Helsinki.

# Our Kenyan Connection:

## Dr. Williamson's Work with Catholic University of East Africa

By: Kim Williamson, Ph.D



To extend our work on malaria prevention and treatment, I received a grant from the Graduate school to travel to Kenya during the 2007 spring break to develop collaborative research and educational projects. Catholic University of East Africa (CUEA) was my generous host and while there I had the opportunity to meet faculty and students, and to give several lectures in the molecular biology course. The use of native plants in malaria treatment is a topic of great interest at CUEA because new effective anti-malarials are in critical need, as resistance has developed against most of the existing therapies and is the major factor in the increase in malaria cases during the last decade. A new Center for Biotechnology and Bioinformatics has been started at the University of Nairobi to isolate compounds from plants and plans were made to collaborate on development.

I also got to visit the “Chicago” of Africa, Kisumu which is located on the shore of Lake Victoria, a larger if not “greater” lake than Lake Michigan. Kisumu is also the location of the Kenya Medical Research Institute, a major anti-malarial clinical trials site. The research facilities, developed in collaboration with Case Western Reserve University and Walter Reed Medical Institute, are equivalent to any lab in the US and include an adjacent inpatient clinic. While I was there, they used polymerase chain reaction (PCR) to test their parasite strain for the presence of a gene I have been working on and hope to continue this work on patient isolates.

From Kisumu I traveled to Kakamega to visit Masinde Muliro University of Science and Technology, gave a seminar, and toured their new computer center. Higher education is still a luxury in Kenya, so there is a lot of competition for scholarships and students work hard. An A- average is the cutoff for entrance to a state university. Unlike the Research Institute, university resources are limited, especially current text books and molecular biology reagents. The students do have access to computer labs with internet connections and faculty each had their own computer. The Department of Biology's electronic projector was in high demand. Future arrangements for internet seminars or classes between Loyola University Chicago and Catholic University of East Africa would provide students and faculty opportunity to for further collaboration on areas of joint interest, such as malaria, economic development, and environmental issues.

On the last weekend of my trip, Dr. Williamson visited several rural villages near Mt. Kenya, a marked contrast from the Universities and Research Institutes. The steep terrain is beautiful, but the severe lack of resources means every thing is done by hand including making gravel. Even small tasks take hours and the difficulty and expense of taking a day to visit a health clinic made it clear why healthcare is so limited and the need for a malaria vaccine so great.

This coming April Dr. Williamson will be speaking more about Preventing Childhood Malaria: Strategies that work today and directions for the future” at the upcoming 2008 Loyola Symposium on the Human Rights of Children, April 16-18, at Water Tower Campus. The theme of the symposium is The Right to a Healthy Environment. For more information contact Eddie Bruyere at [ebuyere@luc.edu](mailto:ebuyere@luc.edu)

1) Drs. Kim and Peter Williamson (Class, '80) pet a black rhino in the Sweetwater Conservatory. 2) Catholic University of East Africa students using the Plasmodium Database. 3) A runner traveling off of the road near Mt. Kenya. 4) Outside of the Biology Classroom building at CUEA. *Photos courtesy of Kim Williamson.*

### Jerome Around the Globe

Animal Car Tech and the Biology Department’s resident globetrotter gives us a glimpse at his most recent Transatlantic excursion.

(Left) Through the porthole glass:  
Jerome stands beside an 18th century  
Spanish submarine.



(Above) Jerome and his lovely bride enjoying a romantic lunch at the marina in Monte Carlo.



(Above) Is that tower leaning, or didn't Jerome drink his V-8 this morning?  
Jerome at the leaning tower of Pisa.



(Left) Our hero posing on the deck of a vessel on the Adriatic Sea. In the background stands the scenic shores of the Republic of Croatia.

(Right) Outside the Colosseum , Piazza del Colosseo, Rome.



# Events In the Biology Department and Beyond

## **B.S./M.B.A. Dual Degree Information Session.**

**Thursday, March 27, 2008 3:30pm-5:00pm**

**Quinlan Life Sciences Center, Room 312—Lake Shore Campus**

With the life sciences playing an increasingly larger role in the contemporary economy in fields ranging from Biofuels to pharmaceuticals, employers have an increasing demand for individuals as savvy in the laboratory as in the boardroom.

To meet this expanding need, Loyola University Chicago has developed a program that allows accepted students to take up to three of the required M.B.A. courses in their senior year of study, allowing the student to complete both degrees in only five years.

At this information session, interested students will have the opportunity to have their questions answered by Ann Bezbatchesko, Academic Advisor for the Graduate School of Business, and Dr. Jeffrey Doering, Chairperson of the Biology Department.

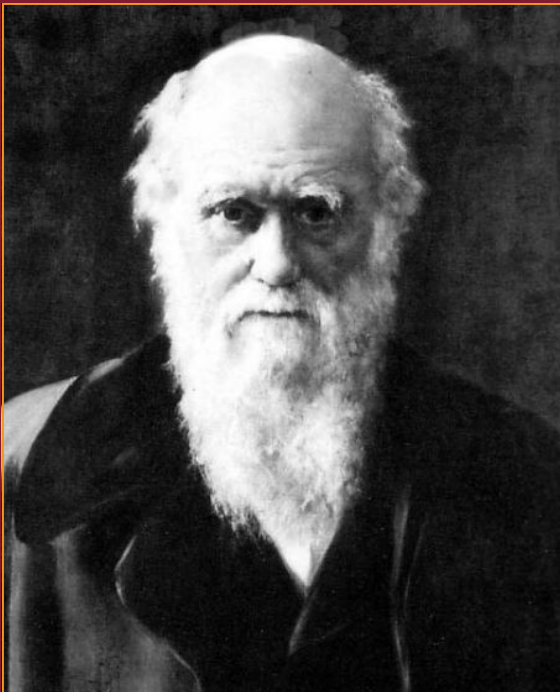


## **The Right to a Healthy Environment:**

**The 2008 Loyola Symposium on the Human Rights of Children**

**April 16-18, 2008, Water Tower Campus**

Presented by Loyola's Center for Human Rights of Children, this symposium is meant to educate on both the threats to a child's human rights, and the measures being taken and developed to address these threats. Dr. Kim Williamson of the Biology Department (see story on page 4) will be present on the topic "Preventing Childhood Malaria: Strategies that Work Today and Directions for the Future." This event is free for all Loyola Faculty, Staff or students. Others may attend for a small fee. For details on the symposium or to register, contact Eddie Bruyere at [ebru-yere@luc.edu](mailto:ebru-yere@luc.edu). For more information on the Center for Human Rights of Children please visit <http://www.luc.edu/ors/centersandinstitutes.shtml>.



## **Gender and Genetics: The Effect of Sex on Political Evaluation—Thursday, March 27, 2008 3:00pm-4:30pm**

**Simpson Multi-purpose Room**

Rebecca J. Hannagan (Ph.D., University of Nebraska, 2006) is an Assistant Professor of American Government and Politics and Biopolitics at Northern Illinois University. Dr. Hannagan has recently published several articles concerning gender and genetics. Her research and teaching focuses on the biological underpinnings of political behavior and is particularly focused on gendered group dynamics and leadership. For further information, contact Dr. Richard Matlan, Department of Political Science at [rmatlan@luc.edu](mailto:rmatlan@luc.edu).



Photos: (From Top) 1) REU students: 2007

2) Charles Darwin, 3) Undergraduate poster presentations—Fall 2007

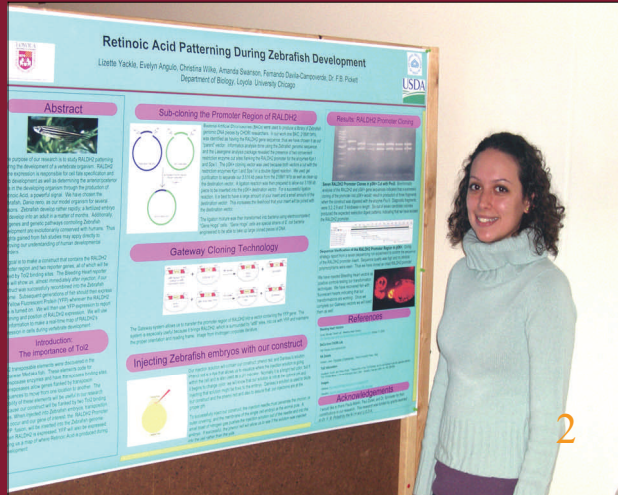
# Since We've Been Gone



I'm sure you have thought to yourself, "Biology Department Newsletter? I thought this went the way of the Woolly Mammoth and the BetaMax." Well, you thought wrong. We will admit that we have a bit of catching up to do. So, to help move that process along, here is a little photo gallery to give you just a peak at some things you might have missed.

PHOTOS (from Top)

- 1) The 2007 REU cohort lounging around with/on Albert Einstein in front of The National Academy of Sciences in Washington, DC.
- 2) Then Undergraduate student Lizette Yackle presenting her poster for Biol. 396. Lizette has since taken a staff position with the MAMS program. (Notice that Lizette coordinated her outfit to match her poster.)
- 3) Dr. Rosi-Marshall (center) with Dr. Judith Wittner (left), Chair of the Sujack Awards Committee, and Dr. Isiaah Crawford (right), Dean of the College of Arts and Sciences, after Dr. Rosi-Marshall Received her Sujack Award.
- 4) Jillian Pokelsek, Paul Hoppe, Jodi Morton and enjoying the rooftop air at the annual department Barbecue.
- 5) And 6) Holly Wellard and Paul Hoppe both were awarded Endowment Awards from the North American Benthological Society in 2007.







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**Preparing People to lead extraordinary**

## Submission Guidelines

The newsletter will be used to promote and be devoted to covering the activities, seminars and events; initiatives and developments; faculty, student and staff awards. Creative works by our Departmental members, announcements and profiles will be covered.

**The newsletter is circulated within the department and will be made available on the Internet via the Biology website. Our goal is to publish online on a bimonthly basis throughout the year.**

Authors/contributors should keep in mind that readers may not specialize in their particular area of work.

Articles vary in length between about 50 and 600 words.

We welcome photographs and images to accompany articles; please provide captions when submitting the photographs/images. Either hard copy or digital formats of the images are acceptable.

Articles may be submitted by any method; however, the preferred transmittal is electronic format via e-mail; [bnor-to1@luc.edu](mailto:bnor-to1@luc.edu)

The Department of Biology newsletter is prepared and edited by Audrey Berry, Pam Bradley, Brian Norton and Jeff Doering.

## Congratulations to:

Jillian Pokelsek on her successful thesis defense.

Mary Ann Glogowski, Barbara Haas and Bobbi Lammers on their promotions to Senior Lecturer.

Terry Grande on a major new NSF grant and to Kim Williamson on a major new NIH grant.

### 2008 Sujack Award Finalists:

Jutta Heller and Andrea Holgado.

### 2008 Summer Research Award Winners:

Stefan Kanzok

Louis Lucas

Catherine Putonti

### THANK YOU:

Erin Hayes, John Kelly, Roberta Lammers-Campbell, Robert Morgan, Bree Surges, and Kim Williamson for their participation in the Admissions Phona-thon.

Thanks to Pat Duffie, Barb Haas, Hunter O'Reilly, Mary Ann Glogowski, Bob Morgan and Emma Rosi-Marshall for participating in Admissions Open Houses.

