



University at Buffalo  
The State University of New York

# The Department of Biochemistry

VOLUME 5

SUMMER 2010

## Letter from the Chair



As another academic year draws to a close, it's exciting and satisfying to look back at the accomplishments of our faculty and students. Our research portfolio remains strong despite what is almost certainly the most difficult funding environment ever experienced in U.S. biomedical sciences. Members of the department, together with their students and collaborators, published 35 original research articles over the past year, and two of our colleagues were awarded new research grants. Michael Buck organized an outstanding seminar program, featuring a great many exciting talks. Once again, these were presented both on the South Campus and the Downtown Campus, as our presence at the latter site becomes more prominent. Next year, Dr. Laura Feltri will join us as one of the inaugural recruits of the Hunter J. Kelly Research Institute. Dr. Feltri has an established and highly productive research program whose overall theme is understanding the developmental processes linking cellular differentiation and morphogenesis. She is particularly interested in studying mechanisms of cell-cell and cell-matrix interactions in development of the peripheral nervous system, and will therefore strengthen our connections to the Neuroscience Program. We are all very pleased to have a scientist of Dr. Feltri's caliber join us.

Last year, the department granted 3 Ph. D. degrees, whose recipients are now doing postdoctoral work at U. Mass Medical School, Virginia Commonwealth Univ. and Northeastern Univ. We wish these students every success in their new settings. Offsetting these "losses," the department's graduate program enrolled 9 new Ph. D. students from the 2009 IGPBS class, meaning that it will be a busy year for our qualifying exam and Graduate Affairs Committees! Dan Kosman, who has done an outstanding job as our Graduate Program Director for many years, has stepped down (or away) from this position, and will be replaced at the end of the year by Mark O'Brian. Dan has the appreciation of the entire department, not to mention several generations of graduate students, for the work he has put into making our program a strong one which remains highly responsive to student needs.

In other developments, our molecular interactions suite on the 6<sup>th</sup> floor of the BRB, overseen by Mark Sutton, has expanded its capabilities by acquiring a scanning calorimeter and the long sought after Bruker EPR Spectrometer (mentioned in last year's newsletter as a probable coming attraction).

Kosman on receiving the 2009 Stockton Kimball Award, and on the terrific talk he gave on biological iron at the annual Stockton Kimball Lecture in June. We also congratulate Gabriela Popescu on her promotion to Associate Professor with tenure, and Kevin Barnum, who received the SUNY Chancellor's Award for Academic Excellence. This is the second consecutive year in which one of our undergraduate majors has been so recognized, and is one indicator of the overall strength of our undergraduate major, ably directed by Gail Willsky.

I hope you will let us hear the latest news on your own career paths, and will pay us a visit the next time you are in Buffalo. Check out our newly refurbished office, courtesy of Beth, Jennifer and Carol!

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Ken Blumenthal  
Professor and Chair

The department congratulates Dan

## DEPARTMENTAL AWARDS & HONORS

### Undergraduate

John F. Moran Memorial Award 2010:  
**Kevin Barnum**  
Deborah, Christopher & Adam White Memorial Award 2010: **Kevin Barnum**  
2010 Outstanding Senior in Biochemistry: **Kevin Barnum**  
Elizabeth Olmsted Ross Award For Outstanding Undergraduate Poster 2010:  
**Quang Nguyen**  
2010 American Chemical Society Outstanding Senior: **Kevin Barnum**  
American Woman in Science Gender Institute Award:  
**Brittany Montross**



### Graduate

Elizabeth Olmsted Ross Award for Outstanding Oral Presentation 2010: **Thomas Hohle**  
Elizabeth Olmsted Ross Award for Outstanding Graduate Poster 2010: **William Lai**  
Biochemistry Dissertation Research Recognition Award 2010: **Sumant Puri**

### Medical Student

The Edward L. Curvish, M.D. Award for Excellence in Biochemistry 2008/2009: **Anuradha Godishala**  
The Edward L. Curvish, M.D. Award for Excellence in Biochemistry 2008/2009 Runner Up: **Joseph Armenia**

## Meet the Faculty: Murray Ettinger

By Jason Rizzo, MD/Ph.D. Student

What advice do you have for young researchers?

“Let your interests drive you. Talk to people. Go to meetings. You get a good idea where your own work stands at meetings, and they can give you a lot of good ideas.”

“The most enjoyable part of doing science, for me, is the thrill of discovery.”

Butler auditorium sits vacant on an August afternoon, awaiting a fresh wave of students to fill its seats in the upcoming fall semester. When a bevy of new faces finally greet this room and cycle through these seats once again, one surefire constant will remain – Dr. Murray Ettinger will be here to help them.

Forty-one years since his arrival in Buffalo, Dr. Ettinger has engrained himself as a staple of the biochemistry department and the UB medical school at-large. A productive researcher throughout his career at UB, Dr. Ettinger has also become a titan of biomedical education here, assisting in the training of thousands of undergraduate, graduate, and medical students.

Both time and experience have made the reach of Dr. Ettinger's influence nearly impossible to quantify, for which we should all be grateful. The combination of altruism, passion, and intelligence he possesses is something we can all learn from and should constantly strive towards.

Recently, I had the honor of sitting down with Dr. E. and taking time to dissect some of his experiences and examine his legacy here at UB. I share some of our insightful conversation with you below.

**Can you walk us through your career path in science, starting with your graduate work. How did you get here at UB?**

I was very lucky in the places that I went to and the people that I interacted with. My PhD was in a pharmacology department in a medical school at Drexel U in Philadelphia. I wanted to learn about how drugs work. I could see that I was not that interested in classic pharmacology, but was really more interested in chemical mechanism. Fortunately for me there was an organic chemist in that department, and I ended up doing work on enzyme kinetics. I also attended some night lectures about protein structure, a field that was really breaking wide open at the time, and right then I realized that the next thing I was going to study would involve something with proteins. I just thought that most drug receptors

were proteins and therefore from there I went on to a protein chemistry lab where I worked on physical methods and enzyme mechanisms.

I really liked physical biochemistry. After two years at Brookhaven, I had a second post-doc at Brandeis in physical biochemistry. A lot of post-docs now are 4-5 years at one institution. It was really good for me to get to go to two different places. At Brandeis I just learned a lot about various kinds of spectroscopic methods.

I came to UB in the fall of 1969 following my post-doc at Brandeis. We never thought we would be here that long, as we had just been moving every two years, but this place has just been great for us.

**As a young investigator, it seems as though you acquired a very diverse training. Was that something you strived for?**

It wasn't something I was conscious of, but it's been a tremendous asset throughout my career. I don't mean this in a boastful way, but it does make me adventurous. I have a very broad background in all kinds of biology, physical biochemistry, mechanisms of enzymes, physical chemistry and I'm glad that I have a diverse background.

“... I just think it is a riot that I get paid for what I do.”

There are not too many people that I have met in science that I would call geniuses. What really separates scientists is how they approach science. What you bring is your background. So if you have a diverse background, whether you want to or not, you are likely to keep an open mind. You are going to do something different than other people because of that diverse background. I did something that most of the rest of the lab was not doing, that the mentor was not necessarily an expert on, but they sensed what I wanted to do and that helped to move that lab in a new direction.

**How did you find balance between taking on more coursework to**

**broaden your background and spending time in the lab on your research?**

Maybe I am an optimist, but I was never too worried about it. I just felt weak about physical chemistry and math, and I just wanted to continue my studies. I saw it as an opportunity and that was a great thing for me. I love kinetics and thermodynamics. I let interest drive me all the time. I had a confidence in just following my interests.

**How has the department evolved since you got here in 1969? Now 41 years later!**

I came here as a physical biochemist. At that time our graduate program was large, for a different reason than it's large now. It was Roswell Park and UB departments joined together, comprising some 25-30 graduate students. They were really interested in somebody who could teach physical biochemistry to graduate students in the department and that was the teaching aspect of why I was hired.

There was mostly senior faculty in the department when I first arrived here. After I got here the department was getting better and better, there was a move for a lot of new hires. It was a great place to be. I didn't set out looking for collaborations, but because I was doing lots of spectral work, I was approached by Dr. Kosman about a newly forming bioinorganic group. It was a concept ahead of its time. There were 2 chemists and 2 biochemists, myself and Dr. Kosman. That group started just by talking to each other and then picked an enzyme to work on, a copper enzyme. Eventually, that whole project got me working on Cu-enzyme mechanisms and everything we tried just kept working. The department has certainly evolved a lot. And now, since Dr. Blumenthal arrived, the department has again gotten even better.

**How have your responsibilities as a scientist and educator evolved here during your time at UB?**

Initially, I hadn't thought much about teaching, but I did do a lot of teaching with medical students as a graduate student. It occurred to me then that I



## Meet the Faculty: Murray Ettinger (con't)

really enjoyed it and had a knack for it. After I started to teach for one year here at UB, Dr. Brownie asked me if I'd be willing to teach in a medical school course, and I've been teaching that every year since 1970. I really love it. I love to keep on learning and thinking of new ways to convey material. I always like to try new things. I worked a lot with Dr. Alan Saltzman to initiate a problem-based/case-based learning curriculum for the medical school.

Another thing about teaching that's easy to forget - it's like research or diagnosis. I like to talk to people and try to figure out what's suboptimal about the way they are studying or learning. I love getting to think on the fly of some analogy or comparison to help a student understand a concept. It's the satisfaction of seeing that person just get it. I get a lot of satisfaction in trying to

help people understand. I love to think and learn about new stuff. I have learned a lot from my experiences in listening to students.

**Tell us more about your role in the department.**

There is a lot of freedom in what I get to do here. Nobody tells me how to do anything, they just tell me what general topics to cover and the responsibility is up to me. I've ended up doing all sorts of things that I didn't necessarily seek - many service-wise. I was president of the faculty council. I was also acting chairman of the department twice, one 4 year stint and one 1 year stint.

**What have you found to be the most challenging part of your job - being a university professor, scientist, educator, etc.?**

I found it difficult to be the chairman, but mostly I just think it is a riot that I get paid for what I do. I love the teaching, I love the research, and I like some of the

administrative work I do.

I knew from being at Brookhaven that I wanted to be in an academic atmosphere. There is a certain kind of liveliness when people are talking to each other and collaborating and part of that is because there are teachers and students. I love the intellectual stimulation that comes from talking and working with graduate students about their work. They are always very passionate. In everything that I've done, graduate students have been key players. I am proud to say that I have trained some 19 PhD students in my lab.

**Having your foot in both science and medical education throughout your career here, how have the fields evolved?**

To me it is a very thrilling time to be in science. There is so much happening and so much more new understanding. How all of it connects to disease is also interesting to me. I didn't plan it

this way, but I see connections between my research and my teaching and it's often around disease.

**What advice do you have for young researchers?**

Let your interests drive you. Talk to people. Go to meetings. You get a good idea where your own work stands at meetings, and they can give you a lot of good ideas. You have to be open-minded to be a scientist. Also, you have to be able to take discouragement. Science doesn't always work. You have to be able to keep your wits about you. I always let interests drive me, but I do keep my goals in mind. Keep your mind on the big picture. I call it going for the jugular. Sometimes it pays to go for that big experiment at the end of a logical progression of experiments before doing all those experiments, just to see how it works out and to make sure what you are working on is worth the time and effort.

**NEWS: RESEARCH DAY**

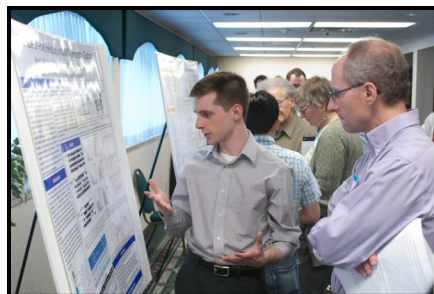
The 8<sup>th</sup> annual Biochemistry Research Day was held on April 30<sup>th</sup> at the Ramada Inn and Conference Center adjacent to the Amherst Campus. Between 75 and 100

of our colleagues - faculty, graduate and undergraduate students, and postdocs - attended the day long event which featured 13 platform talks by our senior graduate students as well as 19 poster presentations by undergrads and more junior graduate students. This year's Ross Awardees were: best undergraduate poster, Quang Nguyen (*Role of MMR in ROS-Induced Mutagenesis*; advisor, Mark Sutton); best graduate poster, Will Lai (*ArchAlign: A Next-Generation Alignment Algorithm to Detect Chromatin Architecture*; advisor, Michael Buck); and best platform presentation, Thomas Hohle (*Irr is an anti-repressor of Fur mediated repression of the irr gene in B. japonicum*; advisor, Mark O'Brian). They've earned everyone's congratulations for their outstanding work. This year's Ross lecture,

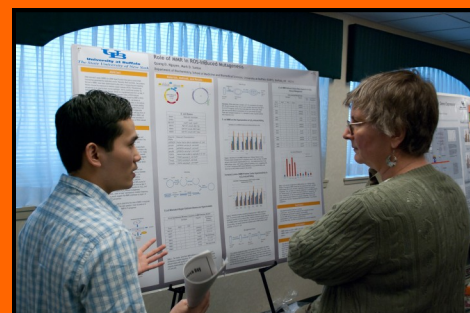


*Mammalian iron and oxygen homeostasis: How cells sense their environment*, was delivered by Dr. Richard Bruik, of UT Southwestern Medical Center in Dallas. Dr. Bruik is best known for his work on cellular oxygen homeostasis, including characterization of the HIF pathway and identification of small molecule agonists and antagonists of the hypoxic response. This work has drawn him into studies of iron homeostasis, an area of particular interest to several members of our department.

As usual, thanks are due to the Biochemistry Graduate Student Association, who or-



ganized this event and hosted Dr. Bruik, as well as to our office staff and Sat Sinha, who did his usual outstanding, and low-key, job as faculty coordinator of research day.

**Research Day 2010**

Department of Biochemistry  
 140 Farber Hall, 3435 Main Street  
 Building 26  
 Buffalo, NY 14214-3000  
 Tel: (716) 829-2727

Visit our new website:  
<http://medicine.buffalo.edu/biochemistry>

To receive future copies of this newsletter, pls. send your email info. to [cs86@buffalo.edu](mailto:cs86@buffalo.edu)

We appreciate the response of our readers who have taken the time to let us know that they enjoy keeping up with happenings in the department, and invite those of you who will be visiting Buffalo to stop by and see how things have changed since you were here. We are especially grateful to those alumni who have made contributions to the Department. These funds are of great value to the department, and help to support a wide range of activities including our Research Day, student travel to meetings, and even acquisition of new instrumentation.

#### NEWS: Advanced Degrees Awarded for 2009/2010

**Qianqian Zhu:** Ph.D. (Sept. 2009) Mentor: Marc Halfon, Postdoc, Duke Inst. For Genome Sciences & Policy

**Satadipta Chakraborty:** Ph.D. (Sept. 2009) Mentor: Dr. Kosman

**Cassandra Kussius:** Ph.D. (June 2010) Mentor: Dr. Popescu, PostDoc, Univ of Massachusetts Med School,

**Sumant Puri:** Ph.D. (June 2010) Mentor: Dr. O'Brian PostDoc, Northeastern Univ, Antimicrobial Discovery Center, Department of Biology

**Chen Yang:** Ph.D. (Sept. 2010) Mentor: Dr. Ponticelli, PostDoc, Virginia Commonwealth Univ., Dept. of Neurosurgery

**Jamie O'Connor:** MA (June 2010)

**Kristen Serio:** MA (June 2010)

**Marta Scott :** MA (Sept. 2009)

#### Congratulations to our 2010 Phi Beta Kappa Inductees:

Kevin Barnum, Senior

Russell Van Coevering, Senior

Brittany Montross, Senior

Mark Niec, Senior

Sanel Sadibasic, Senior

Felicia Cao, Junior

Karen Devispelaere, Junior

#### FACULTY ACHIEVEMENT:

**Gabriela Popescu** was named one of the recipients of the 2010 University at Buffalo's Exceptional Scholar Award for Young Investigators. Congratulations Gabriela!

**Rich Gronostajski** and his colleagues have received \$3.5 million from the Empire State Stem Cell Board to establish a Western New York Stem Cell Culture and Analysis Center.

**Dan Kosman** has been recognized as this year's winner of the *Stockton Kimball Award*, in recognition of his outstanding research program and long-time service to the School of Medicine. Dr. Kosman has also been named a "UB Distinguished Professor" Congratulations to Dan!

**Dan Kosman** has been named a "UB Distinguished Professor" in recognition of achieving "national or international prominence and a distinguished reputation within their field through significant contributions to the research/scholarly literature...."

#### STUDENT ACHIEVEMENT:

**Thomas Hohle** (faculty mentor Dr. Mark O'Brian) was the second place winner for the 2009 Erwin Neter Award which is presented annually at the Buffalo Conference on Microbial Pathogenesis. Congratulations Tom!

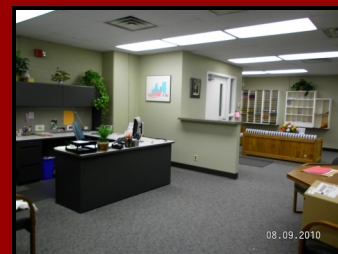
**Kevin J. Barnum** is the recipient of the 2010 SUNY Chancellor's Award for Student Excellence! This is the second year in a row that a Biochemistry student has won this prestigious award. **Hieu Quang Nguyen**, a biochemistry undergrad, won the 2009 SUNY Chancellor's Award for Student Excellence. Congratulations to both!

Special Thanks to Jason Rizzo, Carol Saraceno, Jennifer Hunt and Beth O'Brocta

#### OFFICE RENOVATIONS



During Construction



After

**CONGRATULATIONS!**