

News @ CHEM/BIOCHEM

Newsletter #9

University of Wisconsin-Milwaukee

Summer 2006

Annual Student Awards Day ~ May 4, 2006



Another successful year for the Department of Chemistry & Biochemistry's annual 'Awards Day'. This year our students presented a total of 44 posters representing all areas of study, including 5 undergraduate posters.



Our UWM Alumni judges (see page 4) had a difficult task in awarding the poster contest prizes this year. It was such a close race that they chose to award TWO fifth place prizes in the graduate division!

Continuing department tradition, the poster competition followed an opening address, given this year by another UWM alum (see page 3)! The annual Awards Ceremony completed the day's festivities.

Poster Session Awards - Undergraduate Level

1st Place: McFarland Award,
 John Conrad, "Kinetic Analysis of 4-Hydroxymandelate Synthase" (Moran)

2nd Place: McFarland Award,
 Andrew Cohen, "A Convenient Synthesis of Arylpropanoic Acids: Non-steroidal Anti-inflammatory Agents" (Hossain)



Poster Session Awards - Graduate Level

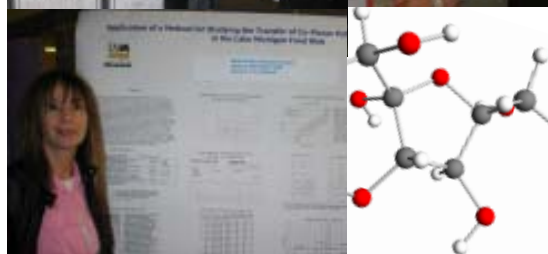
1st Place: Keith Hall Award for Excellence in Graduate Research
 Josh Kostera, "Piecing Together a Mechanism for the Multi-Heme Enzyme Hydroxylamine Oxidoreductase" (Pacheco)



2nd Place: Keulks Award for Graduate Research
 Octavio Furlong, "Using Monte Carlo to Study Atomic Friction" (Tysoe)



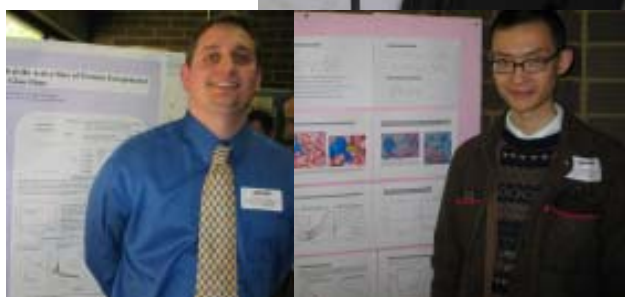
3rd Place: McFarland Award
 Beth Ruddy, "Application of a Method for Studying the Transfer of Co-planar Polychlorinated Biphenyls in the Lake Michigan Food Web" (Aldstadt)



4th Place: McFarland Award
 Jun Ma, "General Approach Towards The Total Synthesis of 9-Methoxy Substituted Indole Alkaloids Including Opioid Analgesic Indole Alkaloids Mitragynine and 7-Hydroxymitragynine" (Cook)



See page 4 for details on academic award winners!!



5th Place: McFarland Award
 Michael Du Prey, "Determination of Internal Electric Fields at the Active Sites of Proteins Encapsulated in Thin Glass Films" (Geissinger)

5th Place: McFarland Award
 Panqing He, "Evidence of the Importance of the C-terminus of (4-hydroxyphenyl) Pyruvate Dioxygenase to Ligand Binding" (Moran)



Notes from the Chair

Hello to all,

This will be my last "Letter from the Chair". Our Chair-designate is Professor Kristene Surerus and we are all very excited. Kristene's specialty is physical and biochemistry. She and Professors Moran and Reddy played major roles designing and pushing our Biochemistry major. Professor Surerus will lead us through major renovation of the Chemistry Building. It will take several years, so stay tuned. Dr. Roger Schneider's Awards Day seminar had nothing to do with remodelling!

If you see the UWM Report

or the Milwaukee paper, you will know that our upper administration is bringing us more research monies and also rethinking our current initiatives and disbursements. We applaud their successes and offer our full support. It will be exciting here at UWM!

Our newest faculty, Professor Chen, received one of the new RGI (Research Growth Initiative) grants. Joining him in recognition are Professors Moran and Cook. Awards were made by a panel of external reviewers.

Please welcome new Associate Professors Indig and Pacheco. We look forward to many years with these new colleagues.

Our former Associate Dean for Natural Science, Mark Harris, is now the Associate Dean of the Graduate School. Congratulations!

Otherwise, the days of midsummer are mostly peaceful. By the time you read this there will be new graduate students and new classes and we'll hardly recall these "dog days."

Good luck to all of you.

Alumni News

Dr. Mahendra Deshpande (1985, Cook) has started a contract R&D - Small Scale Manufacturing Lab. His Chicago-based company, OrgSyn Laboratory, Inc., makes GMP & non-GMP active pharmaceutical ingredients up to 1-2 kg. scale. See: orgsynlab.com.

Dr. Linda Hamaker (1995, Cook) has joined the Chemistry Department staff at Rice University. She recently accepted the newly created position of Chemistry Department Senior Administrator and will be focusing on the areas of Curriculum and Research, in addition to providing scientific and technical oversight for departmental operations.

Dr. Steven A. Chmielewski (1987, Bennett) has been appointed the Clinical Project Manager for the Human Inhaled Insulin Program at Eli Lilly Pharmaceutical Company.

DON'T FORGET to let us know what you've been up to. Visit our web site and fill-out our on-line contact form at:

www.chemistry.uwm.edu/alumni/

UWM: Research Powerhouse

Wisconsin's Governor Jim Doyle visited the Department this spring to announce that Bristol-Myers Squibb (BMS) has licensed a patented anti-anxiety compound developed by our very own Professor James Cook.

This is the first time an established company has licensed a patent from UWM research. Dr. Cook worked with the WiSys Research Foundation (a subsidiary of the Wisconsin Alumni Research Foundation - WARF) to license his patent to BMS.

During a press conference held here in our Chemistry Building, the governor stated "This represents a major step forward in Milwaukee's emergence as a research powerhouse. The agreement not only reflects Milwaukee's growing status as a research center, but also could bring significant new resources back to UWM to be reinvested in research."

Governor Doyle shakes hands with graduate research assistant Merle Johnson.

The licensed compound provides the same effect as some of the mostly widely used drugs for anxiety – benzodiazepines like Valium and Xanax – but is not habit-forming and doesn't have unwanted side effects like muscle weakness, drowsiness or amnesia. The Cook research group specializes in identifying regions in the brain that cause a drug's unwanted side effects - and then designing a new drug that does not affect those regions. Their work focuses on diseases such as Alzheimer's, schizophrenia, epilepsy and malaria. Additionally, the group is working on drugs for more effective control of alcoholism by the development of a compound that interacts with certain neurotransmitters in the brain to block the euphoric effects of alcohol.

in the news...

At the news conference Governor Doyle also awarded \$500,000 to help fund research through the Biomedical Technology Alliance (BTA), a consortium of universities in the Milwaukee area including UWM, Medical College of Wisconsin, Marquette University, Milwaukee School of Engineering and the University of Wisconsin-Parkside. The aim of the BTA is to bring "economic growth to the state's biomedical technology industry by creating commercial applications for the academic expertise in the region". The state money will be matched by consortium members and used for research.



Governor Doyle, Merle Johnson and Dr. James Cook look on as Chancellor Santiago speaks during the BTA press conference.

A BIG Thank You!

A BIG "Thanks!" to all of you who have contributed to the Department of Chemistry and Biochemistry. Funds from our Foundation accounts are used for department events, including our annual "Awards Day" poster competition - with scholarship prizes for the top posters.

The fund also supports our "Alumni Travel Award" program that assists graduate students with travel expenses to nationally recognized meetings to present posters.

DONATIONS (TO \$100)

Dr. Suheil Abdo, Dr. Richard Anderson, Dr. Mahendra Deshpande, Dr. Michael DiPierro, Dr. Gene Hiegel, Dr. Alexander Hill, Mr. Frederick Hinz, Ms. Sue Krezoski, Mr. James Krogh, Mr. Robert Lenga, Mr. Eric Pohl, Mr. Steven Socol, Dr. David Staats, Mr. Anthony Steber, Dr. Kristene Surerus and Dr. Benjamin Van Raalte.

DONATIONS (\$101 - \$250)

Ms. Margaret Cancro*, Dr. Steven Chmielewski, Dr. M. M. Hossain, Ms. Carol Koroghlanian, Mr. Michael McLaughlin*, Dr. Ralf Vanselow and Dr. Lin-Hua Zhang.

DONATIONS (\$251 - \$1000)

Mr. Michael Martin*.

* Includes funds matched by employer. Double your gift! Check with your company's Human Resources office about "matching gift" programs available through your employer.



2006 Awards Day Featured Speaker:

**Dr. Roger Schneider of
Rho Sigma Associates, Inc.
~UWM ALUMNUS~**

*Pyrotechnics, Explosives and
Propellants - A Glimpse into the Life
of an Energetic Materials Consultant*

This year's Awards Day was indeed an explosive one! Dr. Roger Schneider, UWM alumnus and explosives expert, delivered his keynote address with the visual aid of some great "indoor" fireworks.

Roger earned his Ph.D. degree in physical inorganic chemistry with minors in physics and mechanical engineering from UWM in 1982, with professors Ken Watters and Russell Howe as his research advisors. He also did a year of post doctoral research with Professor Keith Hall.

Several years earlier, upon his release from active duty in the US Navy in 1974, he co-founded Rho Sigma Associates (Whitefish Bay, WI), a scientific and engineering consulting firm, which will soon be celebrating the beginning of its 33rd year in business. During his years as a graduate student and postdoc, he continued his self-employment as a consultant and performed duties as a Naval Reserve officer. Roger primarily consults in energetic materials (pyrotechnics, explosives and propellants) and is an internationally recognized expert in pyrotechnics.



Dr. Schneider talks with Drs. Hill and Hossain about his 'explosive' presentation.

Using the chronology of his own career to date as a framework, Roger shared some of the truly fun and intellectually satisfying work in which he has been involved, and offered his thoughts on the pros and cons of technical consulting as a profession, stating that he "routinely draws upon his formal training in chemistry, physics, mechanical engineering, chemical process safety and risk management, and even human behavior" in addressing his clients' needs. The presentation was enjoyed by all in attendance - especially the pyrotechnic display!

CONGRATULATIONS!

to Professors Indig and Pacheco for their recent promotion to Associate Professor (with tenure)

Guilherme L. Indig
Biochemistry
Ph.D., University of Sao Paulo,
Brazil



My research interests lie in the broadly defined areas of photochemistry and photobiology. The main objective of my research program is the development of new modalities of cancer treatment based on selective targeting of neoplastic tissue with highly cytotoxic free radicals and electronically excited species. This work is multi-disciplinary and lies at the chemistry-biology interface. The overall research design borrows modern experimental techniques and theories from fields such as physical-organic photochemistry, biophysics, biochemistry, and cell biology. Current research focuses primarily on the concepts of mitochondrial targeting and enzyme-directed prodrug therapy.

A. Andy Pacheco
Bioorganic Chemistry
PhD, University of British Columbia



Biological inorganic chemistry is a fascinating and diverse discipline which, as the name implies, draws on aspects of both inorganic coordination chemistry and biochemistry. A unifying theme in my own research has always been a keen interest in reaction mechanisms at the molecular level, and I am especially interested in the reactions of metalloenzymes. Currently, I am concentrating my efforts on two bacterial enzymes: ammonia monooxygenase (AMO), which oxidizes ammonia to hydroxylamine, and hydroxylamine oxidoreductase (HAO), which subsequently oxidizes the hydroxylamine to nitrite. These reactions are part of the ecologically important process known as "nitrification", which is in turn part of the biological nitrogen cycle.

Alumni Spotlight



See page 3
for details on
another Alum
in the Spotlight!

Continuing with tradition, this year's Awards Day once again featured an all-star panel of Alumni Judges!

Melissa Singer Pressman (top, center) completed her Ph.D. work in Dr. Aldstadt's analytical group; Melissa's work focused on the development of novel techniques and methods for detecting trace hexavalent chromium in surface waters.

Melissa is currently working as a Senior Product Development Scientist at Genetic Testing Institute, Inc (GTI) in Waukesha, WI. GTI develops a variety of medical diagnostic assays for the HLA (transplantation), Blood Bank, and Coagulation Laboratories. At GTI, Melissa has been responsible for the development and approval of GTI's Antibody Monitoring System (AMS), a novel assay designed to detect donor-specific HLA alloantibodies in transplant recipients that may lead to early graft loss or chronic rejection. On a personal note, Melissa resides in Richfield with her husband, two daughters, four cats, and eleven fish.

Chris Johnson (top, left) graduated with his Ph.D. in Chemistry in the lab of Dr. Schwabacher. His primary area of study was Combinatorial Chemistry. Currently, Chris is teaching entry-level and organic chemistry at The University of Wisconsin-Sheboygan County. Previously, Chris taught Chemistry at UW-Washington County. Outside of teaching, Chris enjoys hiking, biking, remodeling his historic Victorian home and spending time with his 2 year old son, Liam.

Thomas Sorensen (top, right) graduated with his Ph.D in Physical Chemistry. He studied with Dr. England. Tom is currently teaching general and physical chemistry here in the Department. He also coordinates the assignment of the teaching assistants to laboratory and discussion sections.

Congrats! 2006 Academic Awards

Louise A. Arndt Fellowship	Christine Carlson
Trevisan-Fueger UWM Chemistry Award	John Frost
Charles B. Gates Award	Eiloush Elahi
Durward Layde Memorial Fellowship	Connie Burbey
George Sosnovsky Graduate Student Award	Octavio Furlong, Beth Ruddy
Outstanding Senior Award	Tom Lawton
Chemistry Emeritus Award, Outstanding Junior	Joshua Wiener
Outstanding Performance in Introductory Chemistry	Yuliya Lipkina
Outstanding Performance in Analytical Chemistry	Tom Lawton
Outstanding Performance in Biochemistry	Cristin Fergus, Jamie Held
Outstanding Performance in Inorganic Chemistry	Calvin Sprangers
Outstanding Performance in Organic Chemistry	Derek Weber
Vanselow Award in Physical Chemistry	John Brlas
Outstanding Teaching Assistant Award	Ruiyun Wang, Michael Du Prey, & Matt Dudley



News@ Chem/Biochem (formerly published as the 'UWM Chemist') is written and edited by Laura Hall. The Faculty Advisor is Dr. M. Mahmum Hossain. To share alumni news or to provide feedback to the editor, please email ljhall@uwm.edu. We'd love to hear from you!

Department of Chemistry & Biochemistry
3210 N. Cramer Street,
Milwaukee, WI 53211
414-229-4411 1-800-628-8258

www.uwm.edu/Dept/Chemistry