

**Chemistry Alumni Newsletter
University of North Dakota
Winter 2005
Volume III Number 1**

Current Faculty

Analytical: David Pierce, Alena Kubatova, Julia Zhao
Chemical Ed: Julie Abrahamson, Tom Ballantine
Inorganic: Harmon Abrahamson, Ewan Delbridge, Lothar Stahl
Organic: Anamitro Banerjee, Alexei Novikov, Irina Smoliakova
Physical: Mark Hoffmann, Jenya Kozliak, Kathryn Thomasson
Adjunct: Eric Murphy, LeRoy Pazdernik, Matthew Picklo

Jeff Warwick 2005 Alumni Lecturer



Jeffrey O. Warwick is currently Principal Scientist of Analytical Methods Development at Boston Scientific Corp. Jeff was born and raised in North Branch, Minnesota. After graduating from North Branch High School he enrolled at Winona State University intending to major in Chemical Engineering. Finding the chemistry to be "far more interesting" he became a chemistry major and graduated with a B.S. in Chemistry in May 1986. That fall he came to UND as a graduate student in Analytical Chemistry and joined the research group of Dr. Duane Bartak. He received his M.S. in Analytical Chemistry from UND in 1989 with his thesis work being "Electrochemical Kinetic and Mechanistic Study of the Reductive Cleavage of Dinaphthyl Ethers". He then began his professional career at Fort Dodge Laboratories in Fort Dodge, Iowa working as an analytical chemist in veterinary pharmaceutical development.

In 1991 he began a long association with Cargill, Inc. in Wayzata, MN. Beginning as a Method Development Chemist, he was promoted to Group Leader of

Chromatography in 1996 and in 1997 became Analytical Processing and Development Supervisor.

In 2000 he moved to Cargill Dow, Inc. as Bioanalytical Manager and then Senior Analytical Chemist (2001) working with both method development research and production facilities.

He recently, 2005, returned to the area of pharmaceuticals in his current position at Boston Scientific as Principal Scientist, Analytical Methods Development. His specific current work is with drug eluting polymer stents.

Jeff lives in Waconia, MN and has two sons, ages 16 and 20. In addition to chemistry, he also enjoys hunting and fishing.

How NatureWorks™ at Cargill Dow

Jeff gave a wonderful seminar to the department for our Homecoming celebration. He shared his experiences at Cargill Dow about lactide polymers, and he excited all about the potential and biodegradability of these versatile polymers. He brought lots of samples to share so everyone was able to touch and handle a large variety of packaging (e.g., salad plates, plastic forks, packaging foam, water bottles, candy wrappers), a T-shirt, baby wipes, and even a down-like comforter. With the prices of oil increasing, polylactide may truly be taking off in the future.

**Introducing New Faculty Member
Alena Kubatova**



Dr. Kubatova has received here M.S (1994) and Ph.D. (1997) from the Charles University, Prague, Czech Republic. Later, she worked as a postdoctoral associate for the University of Antwerp, Belgium (1998–2000), and then for three years at Energy and Environmental Research Center

(EERC), UND. From 2003 to 2005 she was a research scientist at the EERC, while also working on projects for the School of Medicine and Health Sciences at UND. She also initiated her work with the department of Chemistry as an adjunct professor.

Dr. Kubatova's research interests involve environmental and toxicological analytical chemistry employing extraction techniques such as hot pressurized water extraction and supercritical extraction with carbon dioxide, gas chromatography, high-performance liquid chromatography (HPLC) using various types of detectors with main interest in a mass spectrometric detection (MS).

Dr. Kubatova's main focus area is linked to the understanding atmospheric chemistry processes, i.e., characterization of the polar organic fraction of atmospheric aerosols. Her aim is to achieve comprehensive characterization of different types of carbon within the particulate matter, and correlate those data to the toxicological characterization.

Another area of Dr. Kubatova's interest is characterization of bioactive molecules particularly antioxidants in plant matrices. She is mainly interested in two aspects involving antioxidant chemistry: (1) Development of extraction methods to eliminate losses of antioxidants during the processing, and (2) studies determining and evaluating antioxidant activity from different plants, which may have potential as a dietary supplements.

Mark Hoffmann and Julia Zhao Visit China to Set Up Collaborative Agreements

Dr. Mark Hoffmann and Dr. Julia Zhao were invited to speak at a number of universities in China in September 2005. They visited eight institutions in six cities in China. Among the ranked Comprehensive Universities were Peking University (number one), Fudan University (number three) and Jilin University (number eight). Ranked Educational Universities included East China Normal University (number two) and Shaanxi Normal University (number eight). During the trip, Dr. Hoffmann and Dr. Zhao presented a total of 14 lectures. Dr. Zhao presented her lecture on Bionanotechnology at: East China Normal University, Fudan University, Shaanxi Normal University, Hunan University, Jilin University, and Jilin Normal University. Dr. Hoffmann presented his lecture on multireference perturbation theory at Hunan

University, Jilin University, and Peking University. Dr. Hoffmann has also presented a lecture on the UND graduate program at East China Normal University, Fudan University, Shaanxi Normal University, Jilin University, and Jilin Normal University. The lectures of the two professors were warmly received. Lecture halls were filled with students and faculty. Chinese students learned about the education programs and research institutions of UND, and they expressed interests of becoming graduate research students at UND. This would promote the growth of UND by recruiting some of the most qualified students from the most prestigious universities of China. Through this trip, several collaborative research relations were initiated between the UND Chemistry department and the Chinese universities.



Dr. Hoffmann giving a lecture in East China Normal University, Shanghai.



Drs. Hoffmann & Zhao with Professors in East China University. Left to right: Prof. Liu (Chair of Chemistry), Prof Fang (Former Provost), Cathy Hacking, Dr. Hoffmann, Prof. Jin (former Dean), Dr. Zhao, and Dr. Wang.



Prof. Jin in Jilin University presented a gift to Dr. Hoffmann after his lecture.

Graduate Student Yuhui Jin Wins the NDWRRI Fellowship



Yuhui Jin receives the 2006 Graduate Research Fellowship Award from North Dakota Water Resources Research Institute (NDWRRI). NDWRRI promotes the education and training of water resources research professionals through its fellowship program. The purpose of this fellowship is to support competitive graduate students with their dissertation in this field. Yuhui is a second year graduate student in analytical chemistry. His current research project is the determination of bacteria in water using nanoparticles. Bacteria can grow or re-grow in distribution systems of drinking water. In fact, potable water is a major source of some bacteria colonization. Given the low infectious dose of pathogenic bacteria, the presence of even a single bacterium in potable water may pose a serious health risk. Therefore, sensitive and rapid detection of bacteria in water is critical. Yuhui will utilize fluorescent nanoparticles as intensive markers to sensitively identify target bacteria in water. The project will be supervised by Dr. Julia Zhao at Chemistry and Dr. Min Wu in the Medical School at UND.

UND Chemistry Awards

Prior to the Alumni lecture, the Chemistry Department presented its annual awards to students. This year the Dr. Roland G. Severson Award for Graduate Research went to Alexander Azenkeng. The Coon-Severson award for graduate teaching excellence went to Kristopher Keuseman. The Dr. Walter H. Moran Scholarship went to two undergraduates: Amy Mortiz and Jessica Wood. The Dr. Harold W. Haugen Scholarship was won by Colin Canham. The Dr. C. A. Wardner Scholarship went to Theodore Knutson, and the Ben G. Gustafson scholarship was won by Diane Johnson.

Alumni News

Daniel J. Swartling Wins TTU Teaching Award.



"Dr. Dan", as he is affectionately known, has the unique ability to motivate and challenge while simultaneously earning the respect and admiration of his students.

"As chairperson of the Chemistry Department," says Scott Northrup, "I've had an opportunity over many years to observe his performance and I have been very impressed with the level or rigor he brings to the discipline and the demands he places on students, and yet at the same time, he elicits their utmost admiration."

Jeff Boles, associate professor of Chemistry, agrees, saying, "His students continually recognize the depth of his care for them no matter the circumstance. For example, even though Dan is a vigorous instructor who maintains integrity in the classroom, his teaching evaluations have always been some of the best in our department."

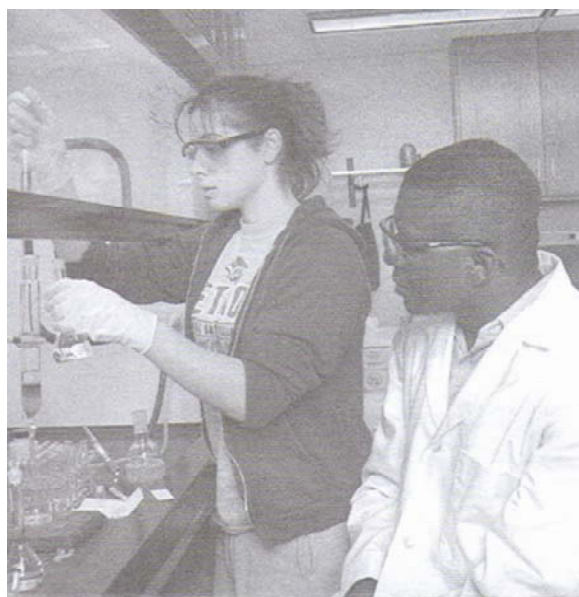
Dr. Swartling earns the respect and admiration of students by a combination of teaching with unconventional methods, presenting exciting chemical demonstrations in a ways that teaches difficult material as simply as possible, and offering an "open door policy" that makes him universally approachable to students.

"Dr. Dan helped me, taught me and counseled me in so many ways during my time at Tennessee Tech, and he continues to do so now that I am a teacher," says former student Staci D. Smith. "He has still been available by e-mail or by phone anytime I've needed him."

Another way Dr. Swartling goes “above and beyond” is by occasionally teaching a medicinal chemistry course needed by many Health sciences Pre-professional majors but not offered in the Chemistry Department’s regular rotation, Boles says, “even though personal sacrifice is a component each time.”

Dr. Swartling has been a TTU faculty member since 1994, and he earned his doctorate in organic chemistry from the University of North Dakota.

Felix Ngassa's research and student is featured in Grand Valley State Academic Excellence brochure. Theothora Melista spent the summer prior to her senior year working with Professor Felix Ngassa on a laboratory research project involving modifying nucleosides. The research team is part of Grand Valley's Student Summer Scholars Program allowing faculty and students to work together in graduate level research projects over the summer.



Theothora has a double major at Grand Valley in chemistry and criminal justice and is looking forward to a career in forensic science after graduation. "The research we are doing is cutting-edge and new for organic chemistry," said Melistas. "You won't find this type of research in text books, so it is very exciting." The team is striving towards getting their research published after completion of the project.

Chemistry Alumni Newsletter
c/o Kathryn Thomasson, Editor
UND Department of Chemistry
PO Box 9024
Grand Forks, ND 58202-9024

30205-2320

Return Service Requested

