

Division Faculty

Volume 3, Issue 2

Fall 2006

Jordan L. Cohen
Professor and Dean

Maureen D. Donovan
Associate Professor

Jennifer Fiegel
Assistant Professor

Douglas R. Flanagan, Jr.
Professor

Lee E. Kirsch
Associate Professor

Vijay Kumar
Associate Professor

Rolland I. Poust
*Professor and Director,
Division of Pharmaceutical
Service*

Kevin G. Rice
*Professor and Head,
Division of Medicinal and
Natural Products Chemistry*

Aliasger K. Salem
Assistant Professor

Craig K. Svensson
*Lyle & Sharon Bighley
Professor in Pharmaceutical
Sciences and Division Head*

Peter Veng-Pedersen
Professor

Dale Eric Wurster
*Professor and Associate
Dean, Graduate College*

Division Welcomes New Faculty Member

In the Fall of 2005, together with the College of Engineering, we initiated a search for a new faculty member to be jointly appointed in Pharmaceuticals and the College of Engineering. After a national search that attracted an excellent pool of applicants, we are pleased to announce that Dr. Jennifer Fiegel has joined the Division as an Assistant Professor with a joint appointment in Chemical & Biochemical Engineering in the College of Engineering.

Dr. Fiegel began her collegiate studies at the University of Massachusetts. She was awarded a BS in Chemical Engineering in 1998, completing a senior thesis entitled, "Optimization of a Method to Measure Adsorption Isotherms at Low Pressures". During her undergraduate studies, she completed a National Science Foundation Research Fellowship at the University of Iowa in the College of Engineering in the summer of 1997.

After receiving her undergraduate degree, she entered the doctoral program in Chemical and Biomolecular Engineering at Johns Hopkins University. Working under Dr. Justin Hanes, she received her PhD in December 2003 for a dissertation entitled, "Poly(Ether-Anhydride) Dry Particle Aerosols". During her graduate studies, Dr. Fiegel was supported by a National Science Foundation Fellowship for Graduate Research.

After completing her doctoral work, Dr. Fiegel joined the laboratory of Dr. David Edwards in the Division of Engineering and Applied Sciences at Harvard University. While at Harvard, she worked on the development of drug delivery systems for the treatment of tuberculosis, as well as examining the interfacial rheological effects of surface active agents on lung mucous mimetics. Her work to date has led to two provisional patents and numerous papers.

Dr. Fiegel moved to Iowa City with her husband Brian and their son Elijah. When not engaged in science, she enjoys camping, photography and making wine.



Dr. Jennifer Fiegel

THANKS



Craig K. Svensson
Professor and Division Head

This newsletter represents my last opportunity to communicate to alumni and friends of the Division in my role as Division Head. It has been my pleasure to serve in this role for the last three years. During that time, I have been impressed with the strength of alumni support, as well as the far reaching impact of graduates of our program at Iowa. We have built on the strong tradition of Iowa Pharmaceuticals and added several promising new faculty members (Drs. Aliasger Salem and Jennifer Fiegel). The Division has also strengthened its ties with the College of Engineering, with several faculty holding secondary appointments in Chemical & Biochemical Engineering and/or Biomedical Engineering (Drs. Flanagan, Kirsch, Salem and Wurster). Thanks to the hard work of faculty in the Division, our publications, grant applications and funding have also increased during this period. I believe that Pharmaceuticals has great potential for further movement forward as we operate in an increasingly competitive academic environment.

It is with mixed emotions that on October 1st I assume the position of Dean of the College of Pharmacy, Nursing and Health Sciences at Purdue University. While leaving many fine colleagues and friends is always difficult, I am excited about the opportunity that lies ahead for me and my family. Fortunately, the pharmacy community is small enough that there will be many opportunities to interact with colleagues from Iowa in a variety of venues in the future.

John Lach Memorial Scholarship

The John Lach Memorial Scholarship was established in memory of Dr. John Lach, who demonstrated a deep commitment to graduate education during his tenure at The University of Iowa. The scholarship is intended to provide support to graduate students in Pharmaceuticals based upon academic achievement and financial need. After a review by faculty of eligible students, Janjira Intra and Xiaohong Shen were selected as the 2006-07 John Lach Memorial Scholarship recipients. Both students entered the doctoral program in the Fall of 2004. Ms. Intra is currently working on a dissertation project under the guidance of Dr. Aliasger Salem, while Mr. Shen is conducting his research under the direction of Dr. Dale Eric Wurster. Both students will receive a certificate in recognition of the award, as well as a \$750 scholarship.

Congratulations to ...

Janjira Intra, for her receipt of a 2006 PDA Journal of Science and Technology Graduate Fellowship.

Aiman Abbas, for his receipt of a Center for Biocatalysis and Bioprocessing Graduate Fellowship.

Joanne Reiland, for renewal of her AFPE Fellowship.

Dr. Aliasger Salem, for his selection as Teacher of the Year for 2006 and his receipt of a Young Investigator Travel Award for the National Academy of Engineering/Institute of Medicine Meeting on Vaccine Production. Along with Dr. Sarah Larsen of the Dept of Chemistry, he was awarded \$129,663 for a project entitled NER: Self-Assembly of Nanostructures in Functionalized, Hierarchical Zeolite Structures that was funded by the National Science Foundation.

Dr. Craig Svensson for his election as a Fellow in the American Association of Pharmaceutical Scientists and his selection as the 2006 Convocation Speaker for the Wayne State University Doctor of Pharmacy program.

The following students successfully defended their doctoral dissertation:

Rubi Banhopadhyay, dissertation entitled, "Elucidation of the number of interaction sites between metoclopramide hydrochloride and ephedrine hydrochloride on Veegum surface", advisor Dr. Wurster. Current position: Senior Scientist, Schering-Plough Research Institute, Kenilworth, NJ.

Madhushree Gokhale, dissertation entitled, "Kinetic and mechanistic studies of the reactions of weakly acidic aromatic amines and reducing monosaccharides in aqueous solutions", advisor Dr. Kirsch. Current position: Research Investigator, Bristol Myers Squibb, New Brunswick, NJ.

Neeraj Gupta, dissertation entitled, "Novel pharmacokinetic/pharmacodynamic investigation for identification of pre-diabetic subjects", advisor Dr. Veng-Pedersen. Current position: Senior Research Pharmacokineticist, Abbott Labs, Waukegan, IL.

Srividya Neelakantan, dissertation entitled, "Nonparametric estimation procedures and application to pharmacokinetic/pharmacodynamic analysis", advisor Dr. Veng-Pedersen. Current position: Manager in Clinical Pharmacology, Pfizer, Inc., Groton, CT.

In addition, *Payal Bhaiya* defended her Master's dissertation entitled, "Bioactivation, protein haptentation, and toxicity of sulfamethoxazole and dapsone in normal human dermal fibroblasts", advisor Dr. Svensson. Current position: Project Manager, Amneal Pharmaceuticals, Paterson, NJ.

Distinguished Friends and Alumni Teach Pharmaceutical Product Development Course

In general, pharmaceuticals graduate students plan to join the industrial scientist ranks upon completion of their degree requirements. However, most of their educational experience is rooted in classroom-taught fundamentals, laboratory-learned research techniques and focused discussions with faculty on the application of scientific theory to understanding their data and observations. Thus, the opportunity to take a peek at what awaits them at the next level is of great interest to students.

One approach to providing students a peek ahead is that used in the non-typical graduate course entitled *Pharmaceutical Product Development* (PHAR 46:225). The course is intended to introduce students to the current best practices in industrial pharmaceutical development. In addition to lectures by the course coordinator (Professor Lee Kirsch), introducing such concepts as quality by design (QBD) and statistical design of experiments (DOE), students are given the opportunity to apply QBD and DOE tools to product development projects in team-based settings using computer simulation software developed for the course.

For many students, the most useful part of the course is the visiting scientist seminar/workshop series in which a group of talented and successful friends and alumni of the Iowa program spend a day on campus in seminar and discussion sessions to interact directly with students. The guest faculty include on-campus experts from the Division of Pharmaceutical Service (PS) and visiting scientists from various companies: large and small, discovery- and generic-based. Last spring, Mark Feldick and Dr. Rolland Poust from PS presented overviews of current best quality assurance practices and

the drug registration process. Drs. Colin Rowlings, Marty Redmon (ArQule, Inc), Elaine Phillips (Verus Pharmaceuticals), Pavan Bhat (Mylan Pharmaceuticals), Ganesh Deshpande and Ron Brashear (both of Glaxo-SmithKline) presented seminars and led workshops on topics ranging from preclinic developability evaluations to device and delivery system design and quality assurance. The guest instructors covered the ins and outs of generic product development, oral modified release systems, quality system approaches and development strategies for insoluble drugs. Most visiting instructors presented an hour-long seminar that was open to the entire pharmaceuticals division followed by a couple of hours of discussion/Q&A/workshop session for students enrolled in the course.

The students greatly appreciated the opportunity to look ahead into their future careers and realize that some of what they've been learning may be pretty useful once they complete their degrees. One student commented, "Being able to interact with people who have transitioned from where I am at to where they are now, makes me realize that I still have a lot to learn. But knowing that they did it, and are successful, gives me some sense of confidence."

According to Professor Kirsch, "the visiting industrial scientist program is key not only for the students but for me, too. I spent a good portion of my professional career in the industry, but the practice of pharmaceutical development progresses and changes. These visiting scientists provide me with extremely valuable updates on what's hot and what's not. And that helps me in both my teaching and research."

2006-2007 Guillory Fellow: Matthew Rosebraugh

Matthew Rosebraugh has been selected as the 2006-07 *Keith Guillory Pharmaceuticals Graduate Fellow*. This award, which was developed by the generosity of Dr. Guillory, friends, and colleagues, provides a monthly stipend and covers tuition expenses for one year. The Division faculty selected Matthew from a competitive pool of applicants to our program for the Fall 2006 semester. Born in Winfield, Illinois, Matthew graduated from Wheaton-Warrenville South High School in Wheaton, Illinois. He received his BS in Pharmaceutical Sciences from Drake University in 2006. During his undergraduate studies, he participated in a summer undergraduate research experience in the School of Pharmacy at the University of Kansas in 2004 and in the School of Pharmacy at the University of Pittsburgh in 2005. Matthew also served as a Chemistry tutor and a member of the Drake University Conference on Undergraduate Research in the Sciences Committee.



Matthew Rosebraugh

2006-07 Lilly Graduate Fellow: Chen-Ming Lee

The Division is pleased to announce the 2006-07 recipient of a pre-doctoral graduate student fellowship supported by a grant from the Eli Lilly & Company Foundation. This fellowship program is designed to support students whose dissertation research is in the area of Physical & Applied Pharmaceutics. Providing both a living stipend and support for tuition, the fellowship allows students to focus fully on their dissertation research.

Under the direction of Dr. Lee Kirsch, project director for the grant, a committee of faculty in the Division selected Chen-Ming Lee as the 2006-07 recipient of the Lilly Foundation Graduate Fellowship. Chen-Ming is working on his dissertation under the advisement of Dr. Maureen Donovan. His research is focused on under-

standing the behavior of submicron particles moving through viscoelastic barriers. A native of Taiwan, he joined the Pharmaceutics program in the Spring of 2002. Prior to coming to the US, Chen-Ming earned his BS and MS in Chemical Engineering from the National Taiwan University. After completing his military service, he worked at the Pharmaceutical Industry Technology Development Center in Taiwan.



Division Welcomes New Graduate Students

We are pleased to welcome 8 new graduate students into our program this Fall. Their names, last degree earned and home town are listed below.

Eduardo Azevedo, MS in Pharmaceutical Sciences, Federal University of Rio Grande Do Norte; Natal, Brazil.

Bhavik Bhatt, BS in Pharmaceutical Sciences, Purdue University; Vadodara, India.

Robert Bhatt, MS in Anatomy and Cell Biology, University of Iowa; Iowa City, Iowa.

Nan Chen, MS in Chemistry, University of Iowa; Beijing, PR China.

Yogita Krishnamachari, MS in Industrial Pharmacy, St. Johns University; Mumbai, India.

Hong-Guann Lee, MS in Pharmaceutical Sciences, National Taiwan University; Taipei, Taiwan.

Matthew Rosebraugh, BS in Pharmaceutical Sciences, Drake University; Wheaton, Illinois.

Mohammad Saleh, BS in Pharmacy, University of Jordan; Amman, Jordan.

Visit our website at <http://pharmacy.uiowa.edu/pharmaceutics>

Please send comments, corrections, or contributions to: Josanna-Birtcher@uiowa.edu

Division of Pharmaceutics
College of Pharmacy
The Dale E. Wurster Center for
Pharmaceutical Technology
The University of Iowa
Iowa City, IA 52242

Non-Profit Organization
U.S. POSTAGE
PAID
Permit No. 45
Iowa City, IA