

Division Faculty

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Spring 2006

Jordan L. Cohen
Professor and Dean

Maureen D. Donovan
Associate Professor

Douglas R. Flanagan, Jr.
Professor

Lee E. Kirsch
Associate Professor

Vijay Kumar
Associate Professor

Lloyd E. Matheson, Jr.
Emeritus 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

Professor Lee Kirsch Teaches Course on Drug Stability in Bangkok, Thailand

Early in the Spring 2006 semester, Dr. Lee Kirsch traveled to Bangkok, Thailand to teach a course on Drug Stability at the International Pharmaceutical Technology program at Chulalongkorn University. This is a graduate curriculum in which students attend a series of short courses provided by visiting international scientists and educators. The sessions are all taught in English, and frequently students in the program spend time in instructors' laboratories as a part of their research training. Dr. Kirsch is currently hosting one student as a visiting scientist in his lab at UI.



Dr. Kirsch, Chulalongkorn faculty and International Pharmaceutical Technology students



Dr. Kirsch and Dr. Walaisiri Muangsiri (University of Iowa Ph.D., 2004) catch a cab

This is the third time in four years that Dr. Kirsch has participated as a visiting faculty member in the program. "I find these excursions to be very satisfying from an educational standpoint: the students are extremely motivated to extract the most out of me during my time with them," says Professor Kirsch. "I also especially enjoy my interactions and discussions with the Chulalongkorn faculty about common research interests and the state of pharmaceutical education and industry in Thailand and Southeast Asia. And, of course, the Thai people are truly wonderful hosts. I'm quite convinced that the very worst thing that can happen to them during my visit is my discomfort or displeasure."

During his visit, one of our alumni, Dr. Walaisiri Muangsiri (Ph.D., 2004) served as one of his hosts. After completing her doctoral studies, Dr. Muangsiri returned to Thailand to join the faculty of Chulalongkorn University.

WELCOME



Craig K. Svensson
Professor and Division Head

While reviewing applicants for our graduate program recently, I was once again reminded of the international impact of the Pharmaceutics program at the University of Iowa. Reading letters of recommendation from UI alumni who are currently faculty members at leading institutions in other countries attests to the far reaching effect of our educational programs. Currently, students enrolled in our program hail from Columbia, India, Jordan, Peoples Republic of China, Syria, Taiwan, Thailand and the United States. While many of these students will ultimately find employment in the United States, others will return to their home countries to use their education in academic or industrial positions. Two of our current students are supported by their home governments to obtain further training to enable them to return as faculty members. Those that remain in the United States not only meet critical workforce needs, but also add to the cultural diversity that enriches our nation.

Our university president, Dr. David Skorton, has indicated that increased internationalization is an important objective in what he has labeled as the "Year of Public Engagement." His encouragement of increased international exchange is embodied in Professor Lee Kirsch's continued involvement with Chulalonghorn University in Thailand (see p. 1) and our hosting of visiting students from Spain, Sweden and Thailand. As we have been regularly reminded by our alumni, increasing globalization is a reality all of our graduates must be prepared to embrace.

Division Participates in Development of National Institute for Pharmaceutical Technology and Education

The Division of Pharmaceutics, together with the Division of Pharmaceutical Service, has participated in the development of the National Institute for Pharmaceutical Technology and Education (NIPTE). NIPTE represents a consortium of 11 universities dedicated to addressing current challenges in pharmaceutical development and manufacturing through research and education. This goal will be achieved through strategic partnership with the Food and Drug Administration and the pharmaceutical industry.

Dr. Rolland Poust, Director of the Division of Pharmaceutical Service and Professor of Pharmaceutics at UI, has been appointed to the Board of Directors for NIPTE. Dr. Lee Kirsch, Associate Professor of Pharmaceutics, serves on the Executive Committee. Both have been engaged in the planning and development for NIPTE, including attendance at meetings held at various universities. The University of Iowa hosted the September meeting of NIPTE in Iowa City.

To learn more about NIPTE and its goals, visit the organization's website at <http://www.purdue.edu/dp/nipite/index.php>.

Vision Statement for NIPTE

"NIPTE will be the pre-eminent non-profit multi-university consortium for interdisciplinary research and education in pharmaceutical science, technology and engineering, with the goal of developing, manufacturing and delivering high quality pharmaceutical products faster, and at a significantly lower cost to the patient."

Congratulations to ...

Ammar Khawam, who earned 2nd place prize in the University of Iowa's 2005 International Student Essay Contest, "Coming to America."

Nagendra Chemuturi for his receipt of a best paper award at the PPDM/Eli Lilly Graduate Student Symposium at the 2005 AAPS Annual meeting.

UI Alumnus Dr. James W. McGinity (PhD, '72), professor of pharmaceutics at The University of Texas - Austin, for receipt of the 2005 AAPS Research Achievement Award in Pharmaceutical Technologies.

Dr. Aliasger Salem for renewal of an award from the University of Iowa/Mayo Lymphoma SPORE program (\$60,000) from 3/1/06 to 2/28/07 for a project entitled, "Polymeric Particles that Co-deliver CpG and Antigens for Immune Responses Against Lymphomas."

Dr. Craig Svensson for receipt of funding (\$20,000) for a pilot project from the Center for Alternatives to Animal Research entitled, "Skin Explants for Assessment of Cutaneous Reactions to Xenobiotics." Dr. Svensson has also been appointed as Associate Editor, *AAPS Journal*.

Drs. Maureen Donovan and Douglas Flanagan for receipt of industrial contracts.

Nagendra Chemuturi for successful defense of his dissertation entitled, "The Characterization of Biomolecular Processes Controlling Dopamine Transport Across the Nasal Mucosa". He is currently employed as a research scientist at Vertex Pharmaceuticals, Inc.

Recent Publications by Faculty

- Al-Maaieh A, Flanagan DR. New drug salt formation in biodegradable microspheres. *Int J Pharm* 303:153-159, 2005.
- Al-Huniti NH, Widness JA, Schmidt RL, Veng-Pedersen P. Pharmacodynamic analysis of changes in reticulocyte subtype distribution in phlebotomy-induced stress erythropoiesis. *J Pharmacokinet Pharmacodyn* 32: 359-76, 2005.
- Chemuturi NV, Hayden P, Klausner M, and Donovan MD. Comparison of human tracheal/bronchial epithelial cell cultures (EpiAirway) and bovine nasal respiratory explants for nasal drug transport studies. *J Pharm Sci* 94: 1976-1985, 2005.
- Donovan MD. Gender and Racial Differences in Pharmacologic Response. Effect of Route of Administration and Drug Delivery System on Pharmacokinetics. *J Womens Health* 14: 30-37, 2005
- Gupta N, Hoffman RP, Veng-Pedersen P. Pharmacokinetic/pharmacodynamic differentiation of pancreatic responsiveness in obese and lean children. *Biopharm Drug Dispos* 26: 287-94, 2005.
- Kandimalla K, Donovan MD. Localization and differential activity of P-glycoprotein in the bovine olfactory and nasal respiratory mucosae. *Pharm Res* 22:1121-1128, 2005.
- Khan FD, Roychowdhury S, Nemes R, Vyas PM, Woster PM, Svensson CK. Effect of pro-inflammatory cytokines on the toxicity of the arylhydroxylamine metabolites of sulfamethoxazole and dapsone in normal human keratinocytes. *Toxicology* 218:90-99, 2006.
- Khawam A, Flanagan DR. Role of isoconversional methods in varying activation energies of solid-state II. nonisothermal kinetic studies. *Thermochim Acta* 436:101-112, 2005.
- Himanshu N, Murry DJ, Kirsch L, Fleckenstein L. Development and validation of a high-performance liquid chromatography-mass spectroscopy assay for determination of artesunate and its metabolite dihydroartemisinin in human plasma. *J Chromatogr B* 816: 233-242, 2005.
- Neelakantan S, Veng-Pedersen P. Determination of drug absorption rate in time-variant disposition by direct deconvolution using beta clearance correction and end-constrained non-parametric regression. *Biopharm Drug Dispos* 26:353-70, 2005.
- Roychowdhury S, Svensson CK. Mechanisms of drug-induced delayed-type hypersensitivity reactions in the skin. *AAPS Journal* 7(4): Article 80, 2005. DOI: [10.1208/aapsj070480](https://doi.org/10.1208/aapsj070480).
- Wurster DE, Likitlersuang S, Chen Y. The influence of magnesium stearate on the Hiestand tableting indices and other related mechanical properties of maltodextrins. *Pharm Devel Tech* 10: 461-466, 2005.
- Wurster DE, Bandopadhyay R. The use of isoperibol calorimetry for the study of age-related changes in glucose uptake by erythrocytes. *J Therm Anal Cal* 79:737-740, 2005.

Graduate Student Profile: Kevin Freise

Kevin Freise joined the Division of Pharmaceutics as a graduate student in the Fall of 2005. A native of Genoa, Illinois, he attended the University of Illinois in Champaign-Urbana, Illinois. He received his bachelor's degree in Animal Science in 2001 and his Master's degree in Veterinary Medical Science in 2004. Following graduate school, Kevin joined the Animal Health division of Eli Lilly & Co. in Greenfield, IN. There he developed and validated laboratory models of clinical diseases and conditions, primarily in dogs, and then used these models to help determine what doses of experimental compounds to take into clinical trials. After working at Lilly for two years, Kevin decided to return to graduate school to work on his doctoral degree in pharmaceutics.

When asked what made him decide to pursue graduate studies in pharmaceutics, he answered, "to have greater leadership potential in the industry and to switch to human medicine." He expresses that Dr. Veng-Pedersen's research in the pharmacokinetic and pharmacodynamic modeling drew him into our Division's graduate program. Kevin is currently working on exploratory modeling of the changes of the life span of reticulocytes. He is a recipient of a University of Iowa Presidential Graduate Fellowship.

Joining Kevin in his move to Iowa is his wife, Hilary, who is an elementary school teacher. Kevin and Hilary live in North Liberty. Apart from course work, Kevin enjoys running, backpacking, and fishing wherever he can. He expresses his goal to someday lead multi-disciplinary teams in drug development.



Recent Presentations By Faculty

- Kumar V. "Cellulose and Modified Celluloses – Potential New Biomaterials for Tissue Engineering", Tissue Engineering Symposium, UniversitätsSpital (Kleiner Hörsaal Ost, B Höer), Zürich, Switzerland, October 26, 2005.
- Kirsch LE. "Adventures in Peptide Degradation Kinetics", North Carolina Discussion Group, Research Triangle Park, Durham, NC, June 6, 2005.
- Kirsch LE. "Depot Injection Systems: Current Uses and Issues" invited lecture at the Pharmaceutical Forum, London, England, November, 2005.
- Salem AK. "Co-delivery of antigen and adjuvants by particle bombardment of multi-compartment nanoparticles." Annual Meeting of the American Chemical Society, Washington, DC, August 31, 2005.
- Svensson CK. "How Do Systemically Administered Drugs Provoke Immune Reactions in the Skin?" Department of Pharmaceutical Sciences, School of Pharmacy, University of Pittsburgh, September 27, 2005.
- Veng-Pedersen P. "Target Mediated PK/PD of Recombinant Drugs Influencing Cellular Production and Transformations." NIH/NIBIB Workshop on Advanced Methods in Pharmacokinetic and Pharmacodynamic Systems Analysis. Marina del Ray, CA, June 2005.
- Wurster DE. "Compression Calorimetry" Purdue University (Guest of the Student A.A.P.S. Chapter), W. Lafayette, IN, September 27, 2005.
- Wurster DE. "Compression Calorimetry" Boehringer-Ingelheim Corporation, Ridgefield, CT, October 18, 2005.

Spring 2006 Division Guest Seminar Speakers

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| February 13 | C. Allan Guyman, Ph.D.; Associate Professor, Department of Chemical & Biochemical Engineering, The University of Iowa |
| March 6 | David S. Collins, Ph.D.; Head, Pharmaceutical Sciences and Research Development, Eli Lilly and Company |
| May 1 | Alexander V. Kabanov, Ph.D., Dr. Sc.; Parke-David Professor of Pharmaceutical Sciences, College of Pharmacy, University of Nebraska Medical Center |
| May 22 | Joseph A. Ware, Ph.D.; Senior Principal Scientist, Pharmacokinetics, Dynamics, and Metabolism, Pfizer Global Research and Development |

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

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