Department of Medicinal Chemistry
2010 Annual Report
## Table of Contents

- From the Department Head ................................................................. 2
- Mission Statement ............................................................................... 3
- Teaching and Service ........................................................................... 3
- 2010 Graduate Courses ........................................................................ 3
- 2010 Professional Courses ................................................................. 4
- Progress and Transitions ..................................................................... 4
- Institute for Therapeutics Discovery and Development ....................... 4
- Faculty Recognition ............................................................................ 4
- Editorial Activities ................................................................................ 5
- Research Highlights ............................................................................. 5
- Symposia ................................................................................................ 6
- Seminars ............................................................................................... 6
- MIKI Meeting 2010 ............................................................................... 7
- Student Recognition ............................................................................... 8
- Research Grants — Fiscal Year 2010 ..................................................... 8
- Commencement ..................................................................................... 8
- New & Continuing Members ............................................................... 9
- Faculty .................................................................................................. 9
- Adjunct Faculty .................................................................................... 10
- Research Staff ..................................................................................... 10
- Administrative Staff ............................................................................ 10
- Graduate Students ............................................................................... 11
- Postdocs and Fellows .......................................................................... 12
- Summer Scholars ................................................................................. 13
- Ways to Give ....................................................................................... 13
- Faculty Publications 2010 .................................................................. 13
In 2010, the Department continued its pattern of growth and excellence. One of the highlights of the academic year was the 32nd National Medicinal Chemistry Symposium that took place in June and was attended by 360 scientists. The event was hosted by the Department and organized by Professor Carston (Rick) Wagner as the general chair.

The University of Minnesota College of Pharmacy was evaluated in 2010 by the Accreditation Council for Pharmacy Education (ACPE) and received a full six years of accreditation.

We currently have 45 graduate students in the Department, as well as 50 research associates and postdocs. Ten first-year graduate students joined our program in the fall.

Last year I wrote you about the search for the Philip S. Portoghese Endowed Chair in Neuroscience. I am very happy to report that we were able to recruit Professor Carrie Haskell-Luevano, currently a professor in the Department of Pharmacodynamics in the College of Pharmacy at the University of Florida. She will start her new position July 2011.

Again several of our faculty received Teaching Awards in the professional pharmacy program: David Ferguson, Patrick Hanna, and Elizabeth Amin. Professor Rory Remmel received a 2010 Award for Outstanding Contributions to Postbaccalaureate, Graduate and Professional Education. He was also selected by the Council of Graduate Students (COGS) to receive the first annual COGS Outstanding Faculty Award.

This year we celebrated Professor Yusuf Abul-Hajj on the occasion of his 70th birthday with a symposium honoring his contributions to the Department, College, University, and the scientific community. The Department of Chemistry honored Professor Thomas Hoye on the occasion of his 60th birthday with a symposium for his long-time service at the University of Minnesota. Professor Rodney Johnson was selected as Distinguished Professor under the Pharmacy Scholars program. Professor Portoghese was named a 2010 American Chemical Society Fellow. Professor Marilyn Speedie, Dean of the College of Pharmacy, was the recipient of the Grand Council of Kappa Epsilon Fraternity’s 2010 Career Achievement Award. She also was the recipient of the Distinguished Pharmacist Award, sponsored by the University of Minnesota Pharmacy Alumni Society (PAS).

Professor Robert Vince was awarded the 2010 Imbach Townsend Award from the International Society for Nucleosides, Nucleotides and Nucleic Acids. He also received an Honorary Doctorate of Science Degree From SUNY at Buffalo, his alma mater. In addition, the American Association of Colleges of Pharmacy recognized him for his landmark discovery of the Carbovir class of compounds for HIV/AIDS treatment.

Professor Wagner was named to a new Endowed Chair in Medicinal Chemistry.

Three doctoral students affiliated with the Department, Sonia Das, Kathryn Nelson, and Ajay S. Yekkiral, obtained Doctoral Dissertation Fellowships from the University of Minnesota Graduate School. David Hermanson won a Fellowship from the American Foundation for Pharmaceutical Education (AFPE). Aaron Teitelbaum won the 2010 College of Graduate Students (COGS) Leadership Award. We are very proud of the hard work and dedication for which they were recognized.

This years Taito Soine Lecture was delivered by Chris M. Ireland, Professor in the Department of Medicinal Chemistry and Dean of the University of Utah College of Pharmacy. The Ole Gisvold Lecture for 2010 was presented by Dennis C. Liotta, Professor of Chemistry at Emory University. The Institute for Therapeutics Discovery and Development (ITDD) hired Dr. Juan Leal to become the Director of the Pharmacology and Biomarkers Core.

Gunda I. Georg, Professor and Department Head
Department of Medicinal Chemistry
The mission of the Department of Medicinal Chemistry is to educate and train scientists of the highest caliber, to provide future pharmacy practitioners with the basis for understanding the relationships between molecular structure and drug action, and to achieve and perpetuate excellence in medicinal chemistry through chemical and biological research for the improvement of human health.

During 2010, Medicinal Chemistry faculty members offered professional and graduate courses and were recognized for quality teaching and dedication to students. Several faculty members received teaching awards in the professional pharmacy program in 2010.

- Patrick Hanna: Professor of the Spring Semester honors from the class of 2011;
- David Ferguson: Professor of the Fall Semester and Professor of the Year honors from the class of 2013; and
- Elizabeth Amin: Professor of the Semester honors for both spring and fall semesters from the class of 2012.

Rory Remmel received a 2010 Award for Outstanding Contributions to Postbaccalaureate, Graduate and Professional Education. This award recognizes Professor Remmel as a member of a very distinguished group of faculty who exemplify the University's commitment to quality education. This award also signals his pending induction into the Academy of Distinguished Teachers.

Professor Remmel was also selected by the Council of Graduate Students (COGS) as recipient of the first annual COGS Outstanding Faculty Award. This award, organized by graduate students, recognizes faculty members for their exceptional contributions to graduate education.

Faculty also gave of their time to numerous committees, representing service to the Department, the University, the College of Pharmacy, national and professional organizations, and government agencies. Additionally, faculty served as reviewers for professional journals and as grant reviewers for governmental panels.

- Principles of Biomolecular Simulation (MEDC 5185)
- The New Drug Development Process (MEDC 5200)
- Research and Development Process of Pharmaceutical Products (MEDC 5202)
- Introduction to Drug Design (MEDC 5245)
- Advanced Methods in Quantitative Drug Analysis (MEDC 5494)
- Vistas in Medicinal Chemistry Research (MEDC 5495)
- General Principles of Medicinal Chemistry (MEDC 5700)
- General Principles of Medicinal Chemistry (MEDC 5710)
- Medicinal Chemistry Seminar (MEDC 8100)
- Chemical Aspects of Drug Metabolism and Bioactivation (MEDC 8600)
- Advanced Concepts in Drug Design (MEDC 8700)
- Design of Peptidomimetics (MEDC 8760)
- Medicinal Chemistry Laboratory Techniques (MEDC 8800)
- Research in Medicinal Chemistry (MEDC 8900)
In 2010, the Department was home to 45 graduate students and 50 postdoctoral fellows. Ten first-year graduate students joined the program in the fall. (New grads E. Kurbanov, N. Bleeker, T. Andrews, J. Kyzer, B. Zhou, R. Shah, M. Olson, clockwise from upper left.)

The Institute for Therapeutics Discovery and Development (ITDD) continues its research projects in the area of drug discovery and development, and provided services to the scientific community of the University of Minnesota and beyond. In 2010, development continued on a new promising anti-cancer agent, Minnelide®, designed by Institute researchers in collaboration with other University departments. The drug candidate has entered an advanced pre-clinical development stage and is expected to go to clinical trial in 2012. ITDD continued its activities as a designated Center for Chemical Diversity within the NCI Chemical Biology Consortium. The goal of the Center is to perform translational research in medicinal chemistry for the NCI.

The Institute also continued its various scientific collaborations with other academic and industrial institutions. Together with the University’s Biotechnology Institute, the University of Arizona and Valley Fever Solution LLC, ITDD was awarded a million dollar NIH grant for advanced clinical development of nikkomycin, an anti-fungal drug for valley fever disease.

Professor Rodney Johnson was selected as Distinguished Professor under the Pharmacy Scholars program. The principal criteria for the award are the duration and significance of the person’s contributions to the development of his/her discipline and the impact of the person’s scholarly endeavors on a national and international level.

Professor Portoghese, the long-term Editor-in-Chief of the ACS Journal of Medicinal Chemistry, was named a 2010 American Chemical Society Fellow. The fellows program began in 2009 to recognize and honor ACS members for their outstanding achievements in and contributions to the science, the profession, and service to the society.
Professor Remmel was co-author on a highlighted paper in the Journal of Pharmacology and Experimental Therapeutics titled: “CYP2C9*1B promoter polymorphisms, in linkage with CYP2C19*2, affect phenytoin autoinduction of clearance and maintenance dose.”

Dr. Robert Vince, Professor of Medicinal Chemistry and Director of the Center for Drug Design, was awarded the 2010 Imbach Townsend Award from the International Society for Nucleosides, Nucleotides and Nucleic Acids. The award is based upon his fundamental contributions to nucleic acids chemistry and to science in its broadest sense.

In addition, Dr. Vince was inducted into the Minnesota Inventors Hall of Fame on June 11, joining 61 other distinguished inventors inducted into the Hall of Fame since its founding in 1976. He is honored for his many achievements in drug development, including 23 patents on antitumor and antiviral agents, more than 120 publications, and most notably the development of “carbovir,” carbocyclic drugs used in Ziagen, the leading anti-HIV drug in the world, and development of the first acyclonucleoside family of drugs that lead to the development of Acyclovir, the standard treatment for herpes.

Carston (Rick) Wagner, Ph.D., Professor and Director of the Chemical Biology Initiative, is the first to hold the Endowed Chair in Medicinal Chemistry. The chair was established to support an outstanding faculty member who conducts chemical biology or medicinal chemistry research. The endowment will provide stable funding that will allow the chair to expand into new areas and pursue innovative ideas. Wagner’s research focuses on developing new approaches to drug design and delivery, understanding environmental arylamine carcinogen activation, and engineering protein nanostructures. Specifically, he has been interested in the targeted delivery of antiviral and anticancer nucleotides to virally infected or cancerous tissues. Wagner joined the Department of Medicinal Chemistry faculty in 1991 and became the Director of the Chemical Biology Initiative in 2003. He is also Associate Director of the University of Minnesota Nanobiotechnology Initiative, Director of the Chemistry and Biology Graduate Training Program, member of the Masonic Cancer Center and a founding editor of the journal Molecular Pharmaceutics.

In sad news, Professor Emeritus Frank E. Digangi died March 2 at the age of 92 in Darien, Connecticut. Dr. Digangi came to the University in 1942 as a doctoral student in pharmaceutical chemistry. In 1948 he joined the College of Pharmacy faculty as an assistant professor in pharmaceutical chemistry. From 1969 to 1976, he served as assistant dean of students and in 1978 became the college’s associate dean for administration until his retirement in 1985. DiGangi received numerous awards and distinctions during his career, including the Lawrence C. and Delores M. Weaver Medal and the Harold R. Popp Award, which is sponsored by the Minnesota Pharmacists Association and recognizes one pharmacist annually for their outstanding service to the profession of pharmacy. In addition to his family, one of his greatest pleasures was the more than 2,000 pharmacy students he taught, counseled, and advised. The family requests that memorial donations be made to the Frank E. DiGangi Scholarship Fund, University of Minnesota Foundation, 200 Oak St. S.E., Suite 500, Minneapolis, MN, 55455 or you can donate online at http://ecommunication.umn.edu/t/159517/12718646/67949/0/.

Professor Philip S. Portoghese is the Editor-in-Chief of the Journal of Medicinal Chemistry. Professors Yusuf J. Abul-Hajj and Steven S. Hecht are serving as senior editors of that journal. Professor Carston R. Wagner is Associate Editor of Molecular Pharmaceutics. Professor W. Thomas Shier is the Editor of Toxins Review.

In 2010, the faculty produced 89 publications. In addition, the Department was represented at numerous conferences through oral and poster presentations.
This year, the Taito Soine Lecture was delivered by Chris M. Ireland, Professor in the Department of Medicinal Chemistry, and now Dean of the University of Utah College of Pharmacy. He spoke about his landmark work on marine natural product antitumor agents.

The Ole Gisvold Lecture for 2010 was presented by Dennis C. Liotta, Professor of Chemistry at Emory University. Dr. Liotta, a pioneer in the development of HIV/AIDS drug discovery, presented his most recent studies on the development of new therapies for the treatment of inflammation and cancer.

The 32nd National Medicinal Chemistry Symposium was hosted by the Department and organized by Professor Carston (Rick) Wagner as the general chair. The symposium, held June 6 through 10, was attended by 360 scientists including many alumni of the Department. Professors Philip Portoghese and Gunda Georg served as honorary chairs, Professor Yusuf Abul-Hajj and Dr. David Rotella from Pfizer were program co-chairs. They organized a superb program, consisting of seven sessions covering a diverse range of topics such as neurodegeneration, diabetes, apoptosis, natural products, drug metabolism, process chemistry, and fragment-based drug discovery. The session on diabetes drug discovery was particularly interesting because it featured several first time disclosures of clinical candidates.

A half-day symposium celebrating the 70th birthday of Professor Yusuf Abul-Hajj brought together his colleagues and students for a series of lectures. The June 23 presentations included:

- Dr. Mark Cushman, Department of Medicinal Chemistry and Molecular Pharmacology, Purdue University. From the hood to the hospital: How an indenoisoquinoline accident turned into an anticancer drug;
- Dr. Kuo-Hsuing Lee, Department of Medicinal Chemistry, Eshelman School of Pharmacy, University of North Carolina. Medicinal chemistry-based discovery and development of plant-derived antitumor and anti-HIV clinical trial candidates; and
- Dr. Richard B. Silverman, Department of Chemistry in the Weinberg College of Arts and Sciences, Northwestern University. Protein Aggregation and the Development of Amyotrophic Lateral Sclerosis Therapeutics.

In addition, the Yusuf J. Abul-Hajj Fellowship in Medicinal Chemistry was created to benefit graduate students and honor Dr. Abul-Hajj’s long service to the Department of Medicinal Chemistry.

The Department of Medicinal Chemistry (MC) and Institute for Therapeutics Discovery and Development (ITDD) offered many seminars in 2010.

- Dr. Alexy Benyumov, Assistant Professor, Pulmonary and Critical Care, University of Minnesota. Zebrafish models for drug discovery, February 5 (ITDD).
- Dr. William Scott, Research Professor, Chemistry and Chemical Biology, Indiana University Purdue. Distributed drug delivery D3: Linking basic research and education to find drug leads, February 12 (ITDD).
- Dr. Scott H. Kaufmann, Professor, Medicine and Pharmacology, Mayo Clinic. Topoisomerase I and the response to DNA damage, February 23 (MC).
- Dr. Susan M. Keenan, Assistant Professor, School of Biological Sciences, University of Northern Colorado. Flaviviruses: Steps toward the identification of antivirals, March 2 (MC).
Dr. Peter Senter, Seattle Genetics. Potent anticancer drug conjugates for cancer therapy: From the lab to the clinic, March 9 (MC).

Dr. Efie Kokkoli, Associate Professor, Chemical Engineering and Materials Science, University of Minnesota. Biomimetic peptide-amphiphiles for receptor-targeted therapeutics, March 30 (MC).

Dr. Thomas E. Cheatham, III, Associate Professor, Medicinal Chemistry, University of Utah. Promise and perils in using simulation to guide the design of novel RNA binding ligands, April 13 (MC).

Dr. Karl K. Rozman, Professor, Pharmacology, Toxicology and Therapeutics, University of Kansas Medical Center. 2, 3, 7, 8-Tetrachlorophenothiazine: A potential drug, April 16 (ITDD).

Dr. Dennis C. Liotta, Professor, Organic Chemistry, Emory University. Gisvold Lecture: New therapies for treating inflammation and cancer, April 20 (MC).

Dr. Felicia A. Etzkorn, Professor, Chemistry, Virginia Tech. Pin 1 inhibitors, kinases and regulation of the cell cycle, April 27 (MC).

Dr. Mitra Kaushik, Merck. The integral role of drug metabolism sciences in drug research: From bench top to bedside, May 4 (MC).

Dr. Ramani Ramchandran, Associate Professor, Pediatrics and Cell Biology, Medical College of Wisconsin. Dusp5 – a valued drug target identified by serendipity!, September 22 (ITDD).

Dr. Rheem A. Totah, Assistant Professor, Medicinal Chemistry, University of Washington. Cerivastatin failure re-visited: Importance of CYP2C8 polymorphisms in Cerivastatin disposition, September 28 (MC).

Dr. Chris M. Ireland, Dean, Medicinal Chemistry, University of Utah. Soine Lecture: Marine natural product antitumor agents, October 5 (MC).

Dr. Greg Roth, Associate Professor, Sanford-Burnham Medical Research Institute. Inhibition of antigen receptor mediated NF-κB activation: Discovery of a pathway specific chemical probe, October 8 (ITDD).

Dr. Harold Kohn, Professor, Medicinal Chemistry and Natural Products, University of North Carolina, Chapel Hill. Vimpat*: a first-class antiepileptic agent, October 19 (MC).

Dr. Kenneth M. Merz, Jr., Professor, Chemistry, University of Florida. Predicting protein-ligand binding free energies: How good do we have to be? October 26 (MC).

John Macor, Director, Bristol-Myers Squibb. Heterocyles as bioisosteres in drug discovery leading to the discovery of BMS-708163, a potential treatment for Alzheimer’s disease, November 16 (MC).

MIKI Meeting 2010

Held annually since 1963, the MIKI “meeting in miniature” is the oldest and most successful regional meeting in medicinal chemistry. The 48th Annual MIKI meeting was hosted by the University of Illinois at Chicago, April 9 through 11, 2010. The MIKI keynote speaker was Professor Thomas Hudlicky from the Department of Chemistry, Brooks University, St. Catherin’s, Ontario, Canada. Dr. John Katzenellenbogen from the Department of Chemistry, University of Illinois at Chicago, Urbana-Champaign delivered the 2010 Webster-Sibilsky Lectureship. Two hundred and two students and faculty from Minnesota, Illinois, Kansas, and Iowa attended the meeting.
Three doctoral students affiliated with the Department obtained Doctoral Dissertation Fellowships from the University Graduate School in 2010. Sonia Das, working with Professor Xing, Ajay Yekkirala, working with Professor Portoghese, and Kathryn Nelson, working with Professor Aldrich in the Center for Drug Design were all recipients of this competitive University-wide award.

David Hermanson, who works in Dr. Xing's group, won a Fellowship from the American Foundation for Pharmaceutical Education (AFPE).

Aaron M. Teitelbaum received the 2010 College of Graduate Students (COGS) Leadership Award. His advisor is Dr. Remmel.

We are very proud of these students and the hard work and dedication for which they were recognized.

**Research Grants Fiscal Year 2010**

Awards to the Department of Medicinal Chemistry and Institute for Therapeutics Discovery & Development from the National Institutes of Health and other sources totaled $4.8 million for fiscal year 2010.

**Commencement**

**University of Minnesota**

- Theresa Aliwarga ......................... M.S., August 2010 .......... Advisor: Remmel
  - Study of Phenytoin in Epilepsy Patients and Expression of Oxysterol 71±-Hydroxylase (hCYP7B1) in E.coli

- Erin Michaelson-Richie .................. Ph.D., February 2010 ...... Advisor: Tretyakova
  - DNA-Protein Cross-Linking by Bifunctional DNA Alkylating Agents

- Sanaa K. Bardaweel .................... Ph.D., December 2010..... Advisor: Wagner
  - Defining the Catalytic and Kinetic Mechanism and Natural Function of the Highly Conserved Acyl-AMP Hydrolase, HINT1

- Yan Jia (Chemistry) ...................... Ph.D., May 2010 .......... Advisor: Wagner
  - Development of Eukaryotic Initiation Factor 4E (eIF4E) Antagonists as Potential Anticancer Therapeutics

- Erick K. Leggans (Chemistry) .......... Ph.D., September 2010 ..... Advisor: Fecik
  - Design and Synthesis of Polyketide-Based Labels for Polyketide Synthase Thioesterase and Ketoreductase Domains

- Qing Li (Chemistry) ..................... Ph.D., October 2010 ...... Advisor: Wagner
  - Chemically Self-Assembled Antibody Nanorings (CSANs): Design and Characterization of an Anti-CD3 IgM Biomimetic

- Upthala Seneviratne (Chemistry) .... Ph.D., July 2010 .......... Advisor: Tretyakova
  - Exocyclic Deoxyadenosine Adducts: From Environmental Carcinogens to Antiviral Drugs

- Jin Zhou ..................................... Ph.D., September 2010 ..... Advisor: Remmel
  - Exploration on Atypical Kinetics of UGT1A1 and UGT1A4

- Xin Zhou ..................................... Ph.D., May 2010 .......... Advisor: Wagner
  - I. Probing the Catalytic Potential of Tyrosine 190 of the Hamster Arylamine N-Acetyltransferase 2 (NAT2) and Implication of Protein Intracellular Stability; II. Catalytic and Kinetic Mechanisms of Human Histidine Triad Nucleotide Binding Protein 1 (Hint1)

**University of Kansas**

- Xingxian (Wayne) Gu .................... Ph.D., 2010 ............... Advisor: Georg
  - Synthesis and Evaluation of Novel Iminosugars as Potential Male Contraceptive Agents; and the Chemistry of 2,3-dihydropyridin-4-(1H)-ones and Related Enaminones in Multicomponent Reactions

- Micah Niphakis ............................. Ph.D., 2010 ............... Advisor: Georg
  - Phenanthropperidone Alkaloids: Methodology Development, Synthesis, and Biological Evaluation
New & Continuing Members

Faculty, staff, and students, Department of Medicinal Chemistry, Fall 2010

Faculty

Gunda I. Georg ....................... Department Head & Professor; Director, Institute for Therapeutics Discovery & Development (ITDD); Robert Vince Endowed Chair & McKnight Chair

Rodney L. Johnson ..................... Associate Department Head & Distinguished Professor

Carston R. Wagner ..................... Director of Graduate Studies & Professor, Endowed Chair in Medicinal Chemistry

Yusuf J. Abul-Hajj ..................... Professor

Elizabeth A. Amin ....................... Assistant Professor

Peter I. Dosa ......................... Research Assistant Professor, Assistant Program Director, ITDD

Earl W. Dunham ....................... Associate Professor

Robert A. Fecik ....................... Associate Professor

David M. Ferguson ..................... Professor

Barry C. Finzel ......................... Professor

Vadim J. Gurvich ....................... Research Assistant Professor; Associate Director, ITDD; Director, ITDD Chemical Process Development

Patrick E. Hanna ...................... Morse-Alumni Distinguished Teaching Professor

Daniel A. Harki ....................... Assistant Professor

Derek J. Hook ......................... Research Professor; Director, ITDD High Throughput Screening

Juan Leal ......................... Director, ITDD Pharmacology and Biomarkers

Herbert T. Nagasawa .................. Professor Emeritus

Philip S. Portoghese ................ Distinguished Professor

Rory P. Remmel ....................... Distinguished Teaching Professor

W. Thomas Shier ....................... Professor

Marilyn K. Speedie .................... Dean, College of Pharmacy; Professor

E. John Staba ......................... Professor Emeritus

Natalia Y. Tretyakova ................ Associate Professor

Robert Vince ......................... Professor; Director, Center for Drug Design (CDD)

Michael A. Walters ................ Research Associate Professor; Director, ITDD Lead & Probe Discovery

Chengguo Xing .................... Associate Professor
Adjunct Faculty
Courtney C. Aldrich ............... Research Associate Professor, CDD
Mark D. Distefano .................. Professor, Department of Chemistry
Stephen S. Hecht ...................... Professor, Wallin Chair in Cancer Prevention
Thomas R. Hoy ......................... Professor, Department of Chemistry
Krzysztof W. Pankiewicz ............. Research Professor; Associate Director, CDD
Lisa A. Peterson ....................... Professor, Environmental Health Sciences

Research Staff
Eyup Akgun .................................. Research Associate, Portoghese Lab
Ramappa Chakrasali ...................... Research Associate, Georg Lab
Ting-Lan Chiu .......................... Research Associate, Amin Lab
Rawle Francis .......................... Research Associate, Georg Lab
Joe Hexum .................................. Junior Scientist, Harki Lab
Sudhakar Jakkaraj ...................... Research Associate, Georg Lab
Sinthuha Kanagarajah .................. Junior Scientist, Gurvich Lab
Vishweshwer Rao Katta ............... Research Associate, Georg Lab
Jae Chul Lee ................................ Research Associate, Wagner Lab
Lev Lis .................................. Research Associate, Gurvich Lab
Mary Lunzer .......................... Scientist, Portoghese Lab
Brock Matter .......................... Scientist, Tretyakova Lab
Srilakshmi Neelam ...................... Research Associate, Georg Lab
Angela Perkins-Harki .................. Research Associate, Harki Lab
Michael Powers ...................... Scientist, Portoghese Lab
Aravind Ragipindi ....................... Research Assistant, Finzel Lab
Subhashree Rangarajan ................ Research Associate, Walters Lab
Rondedrick Sinville ..................... Assistant Scientist, Hook Lab
Mary Smart .......................... Laboratory Manager, Gurvich Lab
Jonathan Solberg ...................... Assistant Scientist, Hook Lab
Chris Stenland ...................... Research Associate, Gurvich Lab
Jessica Strasser ...................... Assistant Scientist, Walters Lab
Shameem Sultana Syeda ............... Research Associate, Georg Lab
Defeng Tian .......................... Research Associate, Hook Lab
Timothy Ward ...................... Research Associate, Georg Lab

Administrative Staff
Caitlin Boley ................................ Office Assistant
Mary Crosson ....................... Executive Office & Administrative Specialist
Sandy Dewing ........................ Associate Administrator, Journal of Medicinal Chemistry
Andrea Knickerbocker ................... Administrative Coordinator
Joyce Reha .......................... Executive Secretary
Sarah Johnson Sexton .................. Executive Office & Administrative Specialist
Marilee Tuite ....................... Executive Office & Administrative Specialist, Journal of Medicinal Chemistry
Sara Wajeeh ....................... Executive Office & Administrative Specialist
Graduate Students

Theresa Aliwarga .......................... Advisor: Remmel
Timothy Andrews ........................ Advisor: Harki
Sanaa Bardaveel .......................... Advisor: Wagner
Adam Benoit ............................. Advisor: Ferguson
Nicholas Bleeker .......................... Advisor: Xing
Ran Dai ................................. Advisor: Finzel
Sonia Das ............................... Advisor: Xing
Trinh (Amy) Doan .......................... Advisor: Georg
Curtis Engelhart .......................... Advisor: Aldrich
William Fiers ............................. Advisor: Fecik
Kari Gabrielse Schuett ...................... Advisor: Wagner
Amit Gangar .............................. Advisor: Wagner
Bryant Gay ............................... Advisor: Georg
Xingxian (Wayne) Gu (KU) ............ Advisor: Georg
David Hermanson .......................... Advisor: Xing
Kwon Ho (John) Hong ...................... Advisor: Georg
Yan Jia (Chem) ........................... Advisor: Wagner
Annapurna Kamineni ....................... Advisor: Shier
Yong Wook Kim (Chem) .................. Advisor: Georg
Srikanth Kotapati .......................... Advisor: Tretyakova
Elbek Kurbanov ........................... Advisor: Amin
Jillian Kyzer .............................. Advisor: Georg
Rahul Lad ................................. Advisor: Georg
Erick Leggans (Chem) ..................... Advisor: Fecik
Qing Li (Chem) ............................ Advisor: Wagner
Shui Li ................................... Advisor: Wagner
Wei Li (Chem) ............................. Advisor: Georg
Yang Li ................................... Advisor: Fecik
Li-Kai Liu ................................. Advisor: Finzel
Erin Michaelson-Richie .................... Advisor: Tretyakova
Xun Ming ................................. Advisor: Tretyakova
Kathryn M. Nelson ......................... Advisor: Aldrich
Micah Niphakis (KU) ..................... Advisor: Georg
Margaret Olson ........................... Advisor: Harki
Satish Patil (Chem) ....................... Advisor: Georg
Michael Peterson ........................ Advisor: Fecik
Martin Phillips ........................... Advisor: Peterson
Adwait Ranade ........................... Advisor: Georg
Dewakar Sangaraju ....................... Advisor: Tretyakova
Hajime Seki (Chem) ....................... Advisor: Georg
Uthpala Seneviratne (Chem) .......... Advisor: Tretyakova
Rachit Shah .............................. Advisor: Wagner
Jingjing Shen ............................. Advisor: Wagner
Nicholas Struntz .......................... Advisor: Harki
Aaron Teitelbaum ........................ Advisor: Remmel
Grads (continued)
Sreedhar Tummalapalli...............Advisor: Georg
Dan Wang.................................Advisor: Harki
Susith Wickramaratne (Chem)....Advisor: Tretyakova
Ajay Yekkirala (Pharmacol)......Advisor: Portoghese
Yiyun Yu (Chem).........................Advisor: Georg
Xia Zhang ................................Advisor: Amin
Bo Zhou .................................Advisor: Xing
Jin Zhou ................................Advisor: Remmel
Xin (Cece) Zhou .......................Advisor: Wagner

Postdocs and Fellows
Mohamed Abou-Karam ..........Shier
Dennis Brown .........................Fecik
Padma Chittepu .......................Ferguson
Rebecca Cuellar ......................Georg
Matthew Cuellar ......................Wagner
Teresa De la Mora-Rey ............Finzel
Jignesh Doshi ........................Portoghese
Adrian Fegan .........................Wagner
Todd Geders ............................Finzel
Rajan Giri ...............................Ferguson
Tianshun Hu .............................Harki
Irfan Javed ...............................Portoghese
Delshanee Kotandeniya ..........Tretyakova
Brandie Kovaleski .................Wagner
Sidath Kumarapperuma ..........Wagner
Morgan Le Naour ....................Portoghese
Matthew Leighty ....................Georg
Krishnarao Lopinti ...............Johnson
Ding Lu .................................Peterson
Bhaskar Malayappan ...............Tretyakova
Matthew Metcalf ....................Portoghese
Roli Mishra ..............................Johnson
Satyendra Mishra ....................Johnson
Amber Onorato .......................Fecik
Ahmad Ari Shaik .....................Xing
Rohit Singh .............................Vince
Balasubramanian Srinivasan ....Xing
Murali Subramanian ...............Remmel
Maria Tanasovia .....................Georg
Ye Tang .................................Portoghese
Jeffrey Vanvoorst .................Finzel
Brian White ............................Harki
Richard Wood .........................Amin
Ways to Give

Private support of our activities is important to maintain the quality of our program and the continuation of the mission of the department. Even small contributions add up over time and can have a significant impact. Additionally, the University has an income matching policy of making a 1:1 match of the income generated by any gift to a fellowship of over $25,000. For example, a $25,000 fellowship fund that earns 4% per year and therefore produces $1,000 in annual spendable income, will additionally receive a $1,000 income match to double the annual spendable benefit, to $2,000 per year.

Giving opportunities include:

- Medicinal Chemistry Alumni Graduate Student Fellowship
- MIKI Meeting Fund
- Ole Gisvold Fellowship in Medicinal Chemistry
- Philip S. Portoghese Fellowship in Medicinal Chemistry
- Remmel and Zimmerman Fellowship in Drug Metabolism and Pharmacokinetics
- Robert Vince Graduate Student Fellowships
- Soine Lectures in Medicinal Chemistry
- Yusuf J. Abul-Hajj Fellowship in Medicinal Chemistry

Our Development Director Robert Busch will work with you and will answer any questions that you might have. He can be reached by e-mail, busch110@umn.edu, or phone, 1-866-437-0012.

Faculty Publications 2010


52. Michaelson-Richie, E.D.; Loeber, R.L.; Codreanu, S.G.; Ming, X.; Liebler, D.C.; Campbell, C.; Tretyakova, N.Y. DNA-protein cross-linking by 1,2,3,4-diepoxybutane. *J. Proteome Res.*, 9(9), 4356-4367.


89. Zhou, J; Tracy, T.S.; Remmel, R.P. Glucuronidation of dihydrotestosterone and trans-androsterone by recombinant UDP-glucuronosyltransferase (UGT) 1A4: Evidence for multiple UGT1A4 aglycone binding sites. *Drug Metab. Dispos.*, 38(3), 431-440.