

# Diane Calinski, Ph.D.

Assistant Professor of Pharmaceutical Sciences, Manchester University College of Pharmacy  
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## Education

### **Ph.D. in Pharmacology**, July 2013

University of Michigan

*Principal Investigator*: Paul Hollenberg, Ph.D.

*Dissertation*: "Oxazaphosphorine Metabolism by the Cytochrome P450s and their Common Polymorphisms"

### **B.S. in Biochemistry and Molecular Biology**, December 2005

Pennsylvania State University

*Minor*: Mathematics

## Teaching Experience

### **Assistant Professor**, Manchester University College of Pharmacy (2013 – Present)

- Designed a new elective with focus on pharmacogenomics to be delivered in Fall 2014
- Prepared and delivered ~25 hours of lecture for the second year pharmacy students (~70 students)
- Developed interactive worksheets with conceptual challenges for various subjects
- Worked with other pharmaceutical sciences and pharmacy practice faculty to develop integrated course work with little overlap of topics
- Mentored 5 first year pharmacy students about adjustments to pharmacy school and career topics
- Organized and facilitated group discussions during lectures
- Designed quiz and exam assessment tools; including questions and small group presentations

#### Teaching Assignments

Phrm 451: Integrated Pharmacology Education Central Nervous System I

Topics Covered: Pain, Pharmacology of Pain Management, Headaches, and Multiple Sclerosis

Phrm 452: Integrated Pharmacology Education Cardiovascular I

Topics Covered: Dyslipidemias

### **Guest Lecturer**, University of Michigan

Pharmacology 280: Undergraduate Research Opportunity Program Tutorial Sessions, Winter 2013

- Designed and delivered introductory lectures on Drug Metabolism
- Facilitated discussion and interaction to provide the students with ample question and answer time while I lectured (class of approximately 10 students)
- Developed test questions in cooperation with the course coordinator to correctly assess students' understanding of the material provided in my lectures, as well as, other instructors

### **Graduate Student Instructor**, University of Michigan

Pharmacology 601: From Molecules to Patients: Quantitative Principles of Pharmacology, Winter 2011

- Organized lectures between 8 different faculty members to minimize content overlap and provide students with the most worth-while subject matter
- Provided assistance and feedback to lecturing professors
- Created and maintained an interactive website for students in the class to use as a teaching aid
- Generated review packets for students and held review sessions prior to exams
- Graded all homework assignments and written exams

**Graduate Student Instructor**, University of Michigan

Pharmacology 210: Therapeutic Pharmacology for Nurses, Fall 2008

- Held regular office hours and provided review sessions for students before exams
- Prepared the lecture, and taught the unit on “Pharmacology of Gonadal Hormones”

**Tutor**, University of Michigan

Hired Private Tutor, Fall 2012

- Provided guidance and discussion on lecture notes for a nursing student in the area of pharmacology

**Tutor**, Pennsylvania State University

The Math Center, 2001

- Helped undergraduate students develop skills to understand basic math and calculus concepts in a one-on-one or small group setting

## Research Experience

**Assistant Professor**, Manchester University College of Pharmacy (2013 – Present)

- Developed an individual research project, Investigation of Tyrosine Kinase Inhibitors as Mechanism-Based Inactivators of Cytochrome P450s, to maintain an ongoing active lab
- Participate in numerous collaborative projects within the department, including Dr. Yang’s investigations with minocycline delivery and Dr. Brown’s studies on novel neuroprotective agents
- Developed a research proposal in collaboration with Dr. Yang, of the pharmaceutical sciences department, for external funding from the International Academy of Compounding Pharmacists Foundation
- Planned research project for a volunteer P1 student
- Continued development of proposals for new investigator awards from National and Local agencies

**Graduate Research Assistant**, University of Michigan, Paul Hollenberg, Ph.D., 2011 – 2013

- Developed two *in vitro* high-performance liquid chromatography (HPLC) based assays to measure the metabolites produced by the cancer chemotherapeutics; cyclophosphamide and ifosfamide
- Assessed variations in the catalytic constants for the polymorphic variants of CYP2B6 and CYP3A4 with respect to cyclophosphamide and ifosfamide metabolism

- Provided mentorship and guidance to an undergraduate researcher in the laboratory for an honors thesis project

**Graduate Research Assistant**, University of Michigan, Roger Sunahara, Ph.D., 2006-2011

- Advanced the protein purification protocol of the stimulatory heterotrimeric G protein from insect cells, contributing to the Nobel Prize winning work of Brian Kobilka
- Mentored two 1<sup>st</sup> year graduate students during ~three month rotational research projects
- Evaluated G protein-coupled receptors in *in vitro* binding and GTPase activity assays, as well as, cell culture models
- Work resulted in 3 peer-reviewed publications and 1 book chapter

**Research Technician**, Roswell Park Cancer Institute, Buffalo, NY, Summer 2005 and January 2006 – August 2006

- Designed experiments to test the efficacy of the anticancer drug, velcade with respect to p53 and survivin genotypes
- Work resulted in 1 peer-reviewed publication

**Undergraduate Research Technician**, Walter Reed Army Institute of Research, Silver Springs, MD, January- August 2004

- Initiated crystallization trials for the light-chain type F neurotoxin from *C. botulinum*, for the purpose of co-crystallization with and without inhibitors

## Publications

**Calinski, D. M.**; Zhang, H.; Hollenberg, P.H., Hydroxylation and *N*-dechloroethylation of Ifosfamide and Deuterated Ifosfamide by Human Cytochrome P450s and their Common Polymorphisms. (*In Preparation for Publication with Drug Metabolism and Disposition*).

**Calinski, D. M.**; Zhang, H.; Hollenberg, P.H., Metabolic Activation and Inactivation of Cyclophosphamide by the Human Cytochrome P450s and Some Commonly Occurring Cytochrome P450 Polymorphisms. (*Under Review with Drug Metabolism and Disposition*).

Lin, H. L., D'Agostino, J., Kenaan, C., **Calinski, D.**, & Hollenberg, P. F. (2013). The Effect of Ritonavir on Human CYP2B6 Catalytic Activity: Heme Modification Contributes to the Mechanism-Based Inactivation of CYP2B6 and CYP3A4 by Ritonavir. *Drug Metab Dispos*, 41(10), 1813-1824.

Chung, K. Y.; Rasmussen, S. G.; Liu, T.; Li, S.; DeVree, B. T.; Chae, P. S.; **Calinski, D.**; Kobilka, B. K.; Woods, V. L., Jr.; Sunahara, R. K., Conformational changes in the G protein G<sub>s</sub> induced by the  $\beta_2$  adrenergic receptor. *Nature* **2011**, 477 (7366), 611-5.

Rasmussen, S. G.; DeVree, B. T.; Zou, Y.; Kruse, A. C.; Chung, K. Y.; Kobilka, T. S.; Thian, F. S.; Chae, P. S.; Pardon, E.; **Calinski, D.**; Mathiesen, J. M.; Shah, S. T.; Lyons, J. A.; Caffrey, M.; Gellman, S. H.; Steyaert, J.; Skiniotis, G.; Weis, W. I.; Sunahara, R. K.; Kobilka, B. K.,

- Crystal structure of the  $\beta$ 2 adrenergic receptor-G<sub>s</sub> protein complex. *Nature* **2011**, 477 (7366), 549-55.
- Westfield, G. H.; Rasmussen, S. G.; Su, M.; Dutta, S.; DeVree, B. T.; Chung, K. Y.; **Calinski, D.**; Velez-Ruiz, G.; Oleskie, A. N.; Pardon, E.; Chae, P. S.; Liu, T.; Li, S.; Woods, V. L., Jr.; Steyaert, J.; Kobilka, B. K.; Sunahara, R. K.; Skiniotis, G., Structural flexibility of the G $\alpha_s$   $\alpha$ -helical domain in the  $\beta$ 2-adrenoceptor G<sub>s</sub> complex. *Proc Natl Acad Sci U S A* **2011**, 108 (38), 16086-91.
- Calinski, D.M.**, Edwald, E., Sunahara, R.K. *Use of Model Membranes to Study GPCR Signaling Units: Insights into Monomers and Oligomers in G Protein-Coupled Receptors: From Structure to Function*. Royal Society of Chemistry: London, England; 2011.
- Ling, X.; **Calinski, D.**; Chanan-Khan, A. A.; Zhou, M.; Li, F., Cancer cell sensitivity to bortezomib is associated with survivin expression and p53 status but not cancer cell types. *J Exp Clin Cancer Res* **2010**, 29, 8.
- Collins, G. T.; **Calinski, D. M.**; Newman, A. H.; Grundt, P.; Woods, J. H., Food restriction alters N'-propyl-4,5,6,7-tetrahydrobenzothiazole-2,6-diamine dihydrochloride (pramipexole)-induced yawning, hypothermia, and locomotor activity in rats: evidence for sensitization of dopamine D2 receptor-mediated effects. *J Pharmacol Exp Ther* **2008**, 325 (2), 691-7.

## Published Abstracts

- Diane Calinski**, Haoming Zhang, and Paul Hollenberg. "Hydroxylation versus N-dechloroethylation of Cyclophosphamide by the Human Cytochrome P450s," Poster presentation at the Great Lakes Drug Metabolism Discussion Group. Toledo, OH, USA, May 2013.
- Joshua Matthew Abbot, **Diane Calinski**, Paul Hollenberg. "Metabolism of Cyclophosphamide by CYP2B6 and Associated Polymorphisms," Poster presentation at Experimental Biology Meeting. Boston, MA, USA, April 2013.
- Diane Calinski**, Haoming Zhang, and Paul Hollenberg. "Cyclophosphamide Metabolism by the Polymorphic Variants of CYP2B6," Poster presentation at Experimental Biology Meeting. San Diego, CA, USA, April 2012.
- Diane Calinski**, Brian DeVree, Gisselle Vélez-Ruiz, Søren G. F. Rasmussen, Brian K. Kobilka, and Roger Sunahara. "Phosphorylation of heterotrimeric G proteins modulates receptor coupling," Poster presentation at the Great Lakes GPCR Retreat. Kingbridge, ON, Canada, October 2010.

## Awards

- 2012 American Society of Pharmacology and Experimental Therapeutics Graduate Student National Travel Award
- 2012 University of Michigan, Department of Pharmacology Thomas Baum Travel Award
- 2012 Rackham Conference Travel Grant, University of Michigan

## Professional Affiliations

- Editorial Board Member, Austin Journal of Pharmacology and Therapeutics, 2014 - present
- Member, American Association of Colleges of Pharmacy, 2013 – present
- Member, Parkview Hospital's Pharmacogenomics Working Group, 2013 - present
- Member, American Society for Pharmacology and Experimental Therapeutics, 2012 - present
- Member, Sigma Xi Research Society, 2002 - present

## Invited Talks

- “Hydroxylation versus *N*-dechloroethylation of Cyclophosphamide by the Human Cytochrome P450s.” Great Lakes Drug Metabolism Discussion Group. Toledo, OH, USA, May 2013.
- “Hydroxylation versus *N*-dechloroethylation of Cyclophosphamide by the Human Cytochrome P450s.” Michigan Pharmacology Symposium. Detroit, MI, USA, June 2013.

## Departmental Service

### **Assistant Professor**, Manchester University College of Pharmacy (2013 – present)

- Represented the Department of Pharmaceutical Sciences at the annual Manchester University Board of Trustees Meeting in the Fall 2013
- Peer-reviewed fellow faculty members lectures
- Participated in Drug Information Project for the first year pharmacy students
- Advised and helped to develop a plan for a Pharmacogenomics Masters program at the College of Pharmacy
- Served as an interim member of the Pharmaceutical Sciences Chair Search
- Interviewed candidates for the College of Pharmacy's Class of 2017
- Reviewed application materials for the candidates of the College of Pharmacy's Class of 2017

#### Attended Professional Development Seminars on the following topics:

Active Learning

Integrated Course Work

#### Official Appointments on the Following Committees:

Admissions

Celebrations

Post-Baccalaureate/Pre-Pharmacy Program

Education Technology and Instructional Design

### **Graduate Research Assistant**, University of Michigan (2006-2013)

- Participated in yearly seminars, including developing and delivering hour-long presentations on my current research for the Department of Pharmacology
- Served on a committee with four faculty members to provide feedback to fellow graduate students following departmental presentations, was the only graduate student selected to work with this committee
- Designed, ordered and distributed Michigan Pharmacology T-shirts to the department (over 200 researchers) to promote department enthusiasm
- Featured in University of Michigan's Rackham Graduate School Blog: “A Day in the Life of a Graduate Student”

- Co-organized monthly department gatherings to provide a casual environment for faculty and students to interact