

CURRICULUM VITAE

March 2009

NAME

SUSAN L. MERCER, Ph.D.

TITLE

Assistant Professor
Department of Pharmaceutical Sciences
Lipscomb University College of Pharmacy
1 University Park Drive
Nashville, TN 37204

Email: Susan.Mercer@Lipscomb.edu
Phone: 615.966.7178
Fax: 615.966.7163

Adjunct Assistant Professor
Department of Pharmacology
Vanderbilt University School of Medicine
Nashville, TN 37240

EDUCATION

University of Maryland, Baltimore
School of Pharmacy

Ph.D. in Pharmaceutical Sciences – 2008
Discipline: Medicinal Chemistry
Mentor: [Andrew Coop, Ph.D.](#)

Dissertation Title:

Synthesis and Characterization of Meperidine Analogs at the P-Glycoprotein Efflux Transporter

Seton Hill University
Greensburg, PA 15601

B.S. in Chemistry – 2004
ACS Certified

PROFESSIONAL EXPERIENCE

Vanderbilt University School of Medicine, Nashville, TN 37240

November 1, 2008 – Present

- Adjunct Assistant Professor in the Department of Pharmacology

Lipscomb University College of Pharmacy, Nashville, TN 37204

September 2008 – Present

- Assistant Professor in the Department of Pharmaceutical Sciences

University of Maryland, Baltimore, MD 21201

September 2004-August 2008

- Graduate Research Assistant in Department of Pharmaceutical Sciences, School of Pharmacy
Mentor: Andrew Coop, Ph.D.

University of Maryland, Baltimore, MD 21201

Summer 2004

- Graduate Rotation Student in Department of Pharmaceutical Sciences, School of Pharmacy
Supervisor: Angela Wilks, Ph.D.

Seton Hill University, Chemistry Department, Greensburg, PA 15601

- Chemistry Lab Work-Study / Lab Assistant
Supervisor: Susan Yochum, S.C., Ph.D.

August 2000-May 2004

- Analytical Chemistry Independent Study
Supervisor: Susan Yochum, S.C., Ph.D.

Spring 2004

Case Western Reserve University, Cleveland, OH 44106 May 2002-August 2002
• Summer Undergraduate Research Student in Department of Pharmacology, School of Medicine
Supervisor: John Mieyal, Ph.D.

Bayer Corporation, Pittsburgh, PA May 2001-August 2001
• Summer Internship Student in OEM Coating and Colorants Laboratory
Supervisor: Patricia Jacobs, Ph.D.

TEACHING EXPERIENCE

Lipscomb University College of Pharmacy, Nashville, TN 37204

Spring 2009

Pharmacological Basis of Therapeutics (PHSC 1613): CNS Drug Module
Integrated Biomedical Sciences Laboratory (PHSC 1513): Drug Design
Pharm.D. Research Students: Nicole Otte and Rachel Stephens

Fall 2008

Pharmaceutics (PHSC 1413)
Integrated Biomedical Sciences Laboratory (PHSC 1512)

University of Maryland, Baltimore, MD 21201

March 2007, October 2007, April 2008

Health Sciences and Human Services Library
SciFinder Scholar: The Basics Class

University of Maryland, Baltimore, MD 21201

• Supervision of undergraduate students

Tesia Stephenson (University of Maryland, Baltimore County)	Fall 2007 – Spring 2008
Deepti Patel (Villa Julie College, MD)	Fall 2006
Megan Pierson (College of Notre Dame, MD)	Summer 2006
Lidiya Stavitskaya (Villa Julie College, MD)	Fall 2005
Maura O'Neill (College of Notre Dame, MD)	Summer 2005

• Supervision of Pharm. D. students

Kelly Martin	Fall 2006
James Pappadatos	Summer 2006

University of Maryland, Baltimore, MD 21201

2004-2005

• Graduate Teaching Assistant

Supervisors: Andrew Coop, Ph.D., Gary Hollenbeck, Ph.D.
Administration and grading of exams, assistance in Physical Chemistry laboratory.

Seton Hill University, Greensburg, PA 15601

• Chemistry and Physics Tutor

2001-2004

*Supervisors: Francis Blanco-Yu, Ph.D., John Cramer, Ph.D., Douglas Koebler,
Tony Parker, Ph.D., and Susan Yochum, S.C., Ph.D.*

Instruction of supplemental discussion sessions, individual and group tutor sessions for General Chemistry, Chemical Principles, Organic Principles, Chemistry for Living and General Physics.

• Science Quest Lab Assistant and Resident Assistant

July 2003

Supervisor: Susan Yochum, S.C., Ph.D.

Prepared and instructed laboratory exercises for middle school students; guided students in preparing exhibits for Mini-Science Fair.

RESEARCH INTEREST

Design and synthesis of molecules as potential tools to study biological systems concerned with drugs of abuse; fundamental chemistry of drugs of abuse and improvement of known procedures. Development of structure activity relationships (SAR) and rational drug design.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Association of Colleges of Pharmacy (AACP)	Since 2008
American Association of Pharmaceutical Scientists (AAPS)	Since 2005
American Chemical Society (ACS)	Since 2000
Tennessee Pharmacists Association (TPA)	Since 2008

MANUSCRIPT REVIEWER

[Bioorganic and Medicinal Chemistry Letters](#)

[Current Medicinal Chemistry](#)

ATTENDED CONFERENCES

Tennessee Pharmacists Association, Chattanooga, TN	July 2008
American Association of Colleges of Pharmacy, Chicago, IL	July 2008
National Medicinal Chemistry Symposium, Pittsburgh, PA	June 2008
ACS Leadership Development Institute, Dallas, TX	January 2008
AAPS, San Diego, CA	November 2007
College on Problems of Drug Dependence, Scottsdale, AZ	June 2006
Pittcon, Chicago, IL	March 2004
ACS Regional Meeting, Pittsburgh, PA	October 2003
ACS National Meeting, New Orleans, LA	April 2003
Pittcon, New Orleans, LA	March 2001

LEADERSHIP POSITIONS

[American Chemical Society \(ACS\) – Maryland Section](#)

- | | |
|---|------------------------|
| • Committee Chair - MD ACS Student Grants | December 2006-May 2008 |
| • Student Affiliate Liaison to the Executive Committee | May 2006-May 2008 |
| • Election Committee - Preparation of MD ACS 2007 election ballot | June-September 2006 |

University of Maryland, Baltimore – Pharmaceutical Sciences Graduate Student Association (PGSA)

- Graduate Student Association (GSA) Representative, 2006-2007
- Vice-President, 2005-2006

University of Maryland, Baltimore – AAPS Student Chapter

- Events Coordinator, 2005-2006

Seton Hill University, Greensburg, PA 15601

- Class of 2004 Reunion Gift Chair November 2008 - June 2009
- Student Ambassador 2002-2004
- SA-ACS Chemistry Club – ranked “Outstanding” during all years of involvement
 - President 2002-2003 and 2003-2004
 - Secretary 2001-2002

Society for Analytical Chemists of Pittsburgh (SACP), Student Affiliates

- Chairman 2002-2003
- Chairman-Elect 2001-2002

Carriages at Russett Condominium Association, Laurel, MD 20724

- President 2007-2008

SERVICE

Lipscomb University, Nashville, TN 37204

- Academic Committee Appointments
 - College of Pharmacy Admissions – Member 2008 – Present
 - College of Pharmacy Curriculum – Member 2008 – Present
 - College of Pharmacy Integrity Council – Alternate Member 2008 – Present
- Student Affiliates of the American Chemical Society September 2008 – present
 - Co-Advisor

University of Maryland, Baltimore, MD 21201

- Involved in Chemistry Faculty Candidate Search December 2007 – January 2008
- PSC Graduate Program Steering Committee June 2007 - present
- Mentor for Exploration in Science Research Awareness Program (ESRAP) May 2007
- Volunteer at Ph.D. Hooding Ceremony May 2007

- Coordinator and Participant in Ronald McDonald House Dinner (PGSA sponsored event) June 2006
- Involved in Faculty Candidate Selection Process December 2005
- Participated in Student Interview session for Graduate Program Coordinator November 2005
- Tutor for "A Bridge to Academic Excellence" (ABAE) Fall 2005
- Co-Captain of Department Team in Susan G. Komen, Race for the Cure, MD October 2005
- Facilitated organization of MD ACS dinner meeting held at UMB November 2004

American Chemical Society (ACS) – Maryland (MD) Section

- "Chemistry in the Library" NCW Outreach Activities (Howard County) October 2007
- Coordinator and Participant of Spring '07 Student Networking Event April 2007
- Chemists Celebrate Earth Day – Herring Run Watershed Cleanup April 2007
- "Chemistry in the Library" Outreach Activity (Howard County) April 2006

Muscular Dystrophy Association (MDA)

- Team Leader for "Stride-n-Ride" Fundraiser March 2004
- Cabin Leader / Volunteer Assistant for Summer Camp (1 Week) August 2003
- Volunteer Assistant for Summer Camp (1 Week) August 1999, 2000, and 2001

RESEARCH FUNDING

- Lipscomb University Faculty Enhancement Grant 2008-2009
Abuse Potential of Daytrana® Transdermal Methylphenidate Patches for ADHD Treatment
- Recipient of *Dr. Frank J. Slama Fellowship* and *Dr. Jerome and Mitzie Holen Schwartz Graduate Fellowship in Pharmaceutical Sciences*
University of Maryland, School of Pharmacy 2007-2008
Covered stipend for one academic year

AWARDS

- Recent Distinguished Alumni Award, Seton Hill University 2009
- National Medicinal Chemistry Symposium Travel Award 2008
- ACS Leadership Development Award from the Younger Chemists Committee 2008
- Pharmaceutical Sciences Competitive Departmental Merit Award
University of Maryland, School of Pharmacy 2007-2008
- Who's Who Among Students in American Universities and Colleges 2004
- ACS Analytical Chemistry Award 2004

College Chemistry Award presented by The Society for Analytical Chemists of Pittsburgh	2004
ACS Undergraduate Student Travel Award to National Meeting	2003
Howard Hughes Medical Institute (HHMI) Undergraduate Summer Research Fellowship	2002
CRC Freshman Chemistry Achievement Award	2001

SCHOLARSHIPS

Bayer Scholar	2000-2004
Elizabeth Seton Presidential	2000-2004
M. Leon Bettwy (Chemistry)	2003-2004
Pennsylvania Sci-Tech	2001-2004
Seton Hill University – Athletic	2000-2002

EDUCATIONAL ENRICHMENT (CONTINUING EDUCATION)

Advanced Cardiovascular Life Support, American Heart Association	December 2008
Humane Handling of Rodents, University of Maryland, School of Medicine	July 2007
University of Maryland, Baltimore Seminars	
• Grants and Proposal Writing	March 2008
• Instructional EndNote Class	October 2005
• NIH Peer Review	June 2005
• How to Write a Successful NIH Proposal	March 2005

FELLOWSHIP APPLICATIONS SUBMITTED

- Antidotes for GHB Overdose (1F31DA021041-01)
Submitted to NIDA, NIH as NRSA April 2005
- The Activity of Meperidine Analogs at P-glycoprotein Transporters (1F31DA022811-01)
Submitted to NIDA, NIH as NRSA April 2006, December 2006
- Toxic Metabolite Elimination of Meperidine / Novel Analgesics with Reduced Constipation
Submitted to ACS Medicinal Chemistry Division as Pre-doc Fellowship March 2007
- Novel Analgesics with Reduced Constipation
Submitted to UMB – PSC as Departmental/Internal Fellowship July 2007
FUNDED (September 1, 2007 – August 31, 2008)

PUBLICATIONS

1. Koek W, Chen W, **Mercer SL**, Coop A, France CP. Discriminative stimulus effects of gamma-hydroxybutyrate (GHB): role of training dose. *J. Pharmacol. Exp. Ther.* **2006**; 317(1): 409-417.
2. **Mercer SL**, Hassan HE, Cunningham CW, Eddington ND, Coop A. Opioids and efflux transporters. Part 1: P-Glycoprotein substrate activity of *N*-substituted analogs of meperidine. *Bioorg. Med. Chem. Lett.* **2007**; 17(5): 1160-1162.
3. Koek W, **Mercer SL**, Coop A. Cataleptic effects of GHB, its precursor GBL, and GABA_B agonists: differential antagonism by CGP35348. *Psychopharmacology* **2007**; 192(3): 407-414.
4. Cunningham CW, **Mercer SL**, Hassan HE, Traynor JR, Eddington ND, Coop A. Part 2: P-Glycoprotein substrate activity of 3- and 6-substituted morphine analogs. *J Med Chem.* **2008**; 51(7): 2316-2320.
5. **Mercer SL**, Shaikh J, Traynor JR, Matsumoto RR, Coop A. Nitrile analogs of meperidine as high affinity and selective sigma-1 receptor ligands. *Eur. J. Med. Chem.* **2008**; 43: 1304-1308.
6. **Mercer SL**, Cunningham CW, Eddington ND, Coop A. Opioids and efflux transporters. Part 3: P-glycoprotein substrate activity of 3-hydroxyl addition to meperidine analogs. *Bioorg. Med. Chem. Lett.* **2008**; 18: 3638-3640.
7. Hassan HE, **Mercer SL**, Cunningham CW, Coop A, Eddington ND. Evaluation of the P-glycoprotein affinity status of a series of novel and currently available morphine analogs: comparative study with meperidine analogs to identify opioids with minimal P-gp interactions. *Int. J. Pharmaceutics*. Accepted.
8. **Mercer SL** and Coop A. Opioid analgesics and P-glycoprotein efflux transporters: A potential systems-level contribution to analgesic tolerance. *Curr. Top. Med. Chem.* In Review.
9. Koek W, **Mercer SL**, Coop A, France CP. Behavioral effects of GHB, its precursor GBL, and GABA_B receptor agonists: time course and differential antagonism by the GABA_B receptor antagonist CGP35348. *J. Pharmacol. Exp. Ther.* In Review.

ABSTRACTS, POSTERS, PRELIMINARY AND MISCELLANEOUS REPORTS

1. **SL Gillenberger**, DW Starke, AJ Berdis, JJ Mieyal. Comparative Characterization of the Two Mammalian Glutaredoxins. ACS National Meeting. New Orleans, LA; April **2003**, CHED 256.
2. R Lees, **SL Gillenberger**, T Harshberger, S Hileman. SHU Reacts with You. ACS National Meeting. New Orleans, LA. April **2003**, CHED 1136.
3. **SL Gillenberger**. SHU: Advocating Women in Science. ACS Regional Meeting. Pittsburgh, PA. October **2003**.
4. **SL Mercer**, CW Cunningham, HE Hassan, ND Eddington, A Coop. The Relative Activity of Meperidine Analogs as P-glycoprotein Substrates. University of Maryland, Baltimore, School of Pharmacy Annual Research Day. Baltimore, MD. May **2006**.

5. CW Cunningham, **SL Mercer**, HE Hassan, ND Eddington, A Coop. Effect of 3- and 6-Substitution on P-gp substrate activity of morphine analogs. University of Maryland, Baltimore, School of Pharmacy Annual Research Day. Baltimore, MD. May, **2006**.
6. **SL Mercer**, CW Cunningham, HE Hassan, ND Eddington, A Coop. The Relative Activity of Opioids as P-glycoprotein Substrates. Abstracts of the College on Problems of Drug Dependence. Scottsdale, AZ. June **2006**.
7. CW Cunningham, HE Hassan, **SL Mercer**, ND Eddington, A Coop. Diminished P-gp Substrate Activity of 3- and 6-Substituted Morphine Analogs. International Narcotics Research Conference. Minneapolis, MN. July, **2006**.
8. **SL Mercer**, CW Cunningham, HE Hassan, ND Eddington, A Coop. The Relative Activity of Meperidine Analogs as P-glycoprotein Substrates. International Narcotics Research Conference. Berlin, Germany. July **2007**.
9. **SL Mercer**, CW Cunningham, HE Hassan, ND Eddington, A Coop. The Relative Activity of Meperidine Analogs as P-glycoprotein Substrates. University of Maryland, Baltimore, School of Pharmacy Annual Research Day. Baltimore, MD. April **2008**.
10. TN Stephenson, **SL Mercer**, A Coop. UMB24 Analogs as Potential Methamphetamine Treatments. University of Maryland, Baltimore County (UMBC) Undergraduate Research and Creative Achievement Day. April **2008**.
11. **SL Mercer**, CW Cunningham, ND Eddington, A Coop. Synthesis and Characterization of Meperidine Analogs at the P-glycoprotein Efflux Transporter. National Medicinal Chemistry Symposium. Pittsburgh, PA. June **2008**.
12. CW Cunningham, **SL Mercer**, HE Hassan, JR Traynor, ND Eddington, A Coop. The Effect of 3- and 6-Substitution on the Substrate Activity of Morphine Analogs at P-glycoprotein. National Medicinal Chemistry Symposium. Pittsburgh, PA. June **2008**.
13. CW Cunningham, HE Hassan, **SL Mercer**, JR Traynor, ND Eddington, A Coop. Morphine Analogs and P-Glycoprotein. 9th Winter Conference on Medicinal and Bioorganic Chemistry. Steamboat Springs, CO. January **2009**.

INVITED and ORAL PRESENTATIONS

1. Clear Solutions. Seton Hill University, Greensburg, PA; October **2001**.
2. Comparative Characterization of the Two Mammalian Glutaredoxins. Case Western Reserve University, Cleveland, OH. August **2002**.
3. Comparative Characterization of the Two Mammalian Glutaredoxins. Seton Hill University, Greensburg, PA; November **2002**.
4. A Journey to an Excited State (Senior Oral Comprehensive). Seton Hill University, Greensburg, PA; April **2004**.
5. Antidotes for GHB Overdose. University of Maryland, Baltimore; April **2005**.
6. The Activity of Meperidine Analogs at P-gp Transporters. (Oral Comprehensive / Advancement to Candidacy) University of Maryland, Baltimore; September **2006**.
7. The Pharmaceutical Sciences Program at the University of Maryland, Baltimore. Morgan State University (Chemistry Club); November **2007**.

8. The Relative Activity of Opioid Analogs at P-glycoprotein Transporters. Lipscomb University College of Pharmacy, Nashville, TN; January **2008**.
9. The Relative Activity of Opioid Analogs at P-glycoprotein Transporters. LECOM-Bradenton School of Pharmacy, Bradenton, FL; February **2008**.
10. Synthesis and Characterization of Meperidine Analogs at P-glycoprotein. University of Maryland, Baltimore; February **2008**.
11. The Relative Activity of Opioid Analogs at P-glycoprotein Transporters. (Committee Meeting) University of Maryland, Baltimore; February **2008**.
12. Synthesis and Characterization of Meperidine Analogs at the P-Glycoprotein Efflux Transporter. (Defense) University of Maryland, Baltimore; August **2008**.