Darci J. Trader, Ph.D.

Department of Medicinal Chemistry and Molecular Pharmacology

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**Current Position:**

July 2016- **Purdue University**, West Lafayette, IN

Present Assistant Professor, Department of Medicinal Chemistry and Molecular Pharmacology

Purdue University Center for Cancer Research, Full Member

Interdisciplinary Life Science Program Faculty, Chemical Biology Training Group

**Education:**

Aug. 2008- Ph.D., Chemistry

Dec. 2013 Indiana University, Bloomington, IN

Advisor: Dr. Erin E. Carlson

Aug. 2006- M.S., Organic Chemistry

May 2008 Southern Illinois University-Edwardsville, Edwardsville, IL

Advisor: Dr. James R. McClure

Aug. 2003- B.S., Chemistry

May 2007 Southern Illinois University-Edwardsville, Edwardsville, IL

**Previous Professional Experience:**

Jan. 2014- NIH NRSA Postdoctoral Fellow, The Scripps Research Institute, Jupiter, FL

June 2016 *Discovery of Constrained Peptidomimetic Oligomers for Novel Therapy of Multiple Myeloma*

Advisor: Dr. Thomas Kodadek

Aug. 2008- Doctoral Student, Department of Chemistry, Indiana University

Dec. 2013 *Development of Silicon-Functionalized Resins for Natural Product Discovery and Isolation*

Advisor: Dr. Erin E. Carlson

May 2008- Process Chemistry Intern, Abbott Laboratories, North Chicago, IL

Aug. 2008 Supervisor: Dr. Michael Rozema

May 2007- Medicinal Chemistry Intern, Pfizer, Chesterfield, MO

Aug. 2007 Supervisor: Mr. Jeffery Snyder

Mar. 2007- Research Assistant, SIUE School of Pharmacy, Edwardsville, IL

May 2008 Advisor: Dr. Michael Crider

Aug. 2006- Master’s Degree Thesis Research, SIUE Dept. of Chemistry, Edwardsville, IL

May 2008 *A New Synthesis for an Isobenzofuran*

Advisor: Dr. James R. McClure

May 2006- Physical Chemistry Research Assistant, SIUE Dept. of Chemistry,

Aug. 2006 Edwardsville, IL

Advisor: Dr. Leah O’Brien

**Teaching Experience:**

Aug. 2008- Associate Instructor, Indiana University, Bloomington, IN

May 2010 Fall 2008 - Honors Organic Lab (S343); Spring 2009 - Organic Lab (C343);

Spring 2010 - Biomolecules and Catabolism (C484)

Aug. 2006- Graduate/Lab Manager Assistant, SIUE Dept. of Chemistry,

May 2006 Edwardsville, IL

Jan. 2005- Teaching Assistant, SIUE Department of Chemistry, Edwardsville,

May 2006 IL, General Chemistry and Nursing Laboratories

**Awards and Achievements:**

2015 Aspen Cancer Conference Fellow

2014 Robert M. Sandelman Award for Scientific Excellence, TSRI-FL

2014 NIH Ruth L. Kirschstein National Research Award, Individual Postdoctoral Fellowship (F32)

2012 McCormick Science Grant for Creative, Visionary, and Innovative Research, Indiana University

2012 ACS Executive Director’s Initiative Fund EuCheMS Travel Award

2012 Keystone Symposia Scholarship, Chemical Biology and Novel Tools in Pharmacology, Santa Fe, NM

2011 Marvin Carmack Fellowship, Indiana University

2011 David A. Rothrock Jr. Chemistry Scholarship for Outstanding Research, Indiana University

2011 28th H.C. Brown Lectures in Organic Chemistry Poster Award, Purdue University

2011 ACS Division of Industrial and Engineering Chemistry Graduate Symposium First Place Paper, ACS National Meeting, Denver, CO

2011 Women in Chemistry Travel Award, Indiana University

2010 E. Champaigne First-Year Ph.D. Research Award, Indiana University

2008 Thomas Bouman Science Research Poster Winner, SIUE

2007 Pfizer Intern Poster Session Award Winner

2006 Recipient of Research Grant for Graduate Students, SIUE Grad. School

2006 Outstanding Undergraduate Research Award, SIUE

**Publications:** (†indicates co-authorship)

10. **Trader, D. J.**; Simanski, S.; Kodadek, T. Establishment of a Suite of Assays that Support the Discovery of Proteasome Agonists. *Submitted*, **2016**.

9. **Trader, D. J.**; Simanski, S.; Kodadek, T. A Reversible and Highly Selective Inhibitor of the Proteasomal Ubiquitin Receptor Rpn13 is Toxic to Multiple Myeloma Cells. *J. Am. Chem. Soc.*, **2015**, *137*, 6312-6319.

\*\*Highlighted in: *Nature*, **2015**, *521*, May 7, pg. 8

8. **Trader, D. J.** and Carlson, E. E. Chemoselective Enrichment as a Tool to Increase Access to Bioactive Natural Products: Case Study Borrelidin. *Bioorg. Med. Chem. Lett.*, **2015**, *25*, 4767-4769. *25th Anniversary Issue Entitled, "Recent Advances in Medicinal Chemistry and Chemical Biology.”*

1. **Trader, D. J.** and Carlson, E. E. Towards the Development of Solid Supported Reagents for Separation of Alcohol-Containing Compounds by Steric Environment. *Tetrahedron*, **2014**, *70*, 4191-4196*. Special Issue to Honor Sarah Reisman for Receipt of the Tetrahedron Young Investigator Award*.
2. **Trader, D. J.**andCarlson, E. E. Taming of a Superbase for Selective Phenol Desilylation and Natural Product Discovery. *J. Org. Chem.*, **2013,** *78*, 7349-7355.
3. Sidebottom, A. M.; Johnson, A. R.; Karty, J. A.; **Trader, D. J.** and Carlson, E. E. Integrated Metabolomics Approach Facilitates Discovery of an Unpredicted Natural Product Suite from *Streptomyces coelicolor* M145. *ACS Chem. Biol.* **2013**, *8*, 2009-2016.
4. **Trader, D. J.** and Carlson, E. E. Chemoselective Hydroxyl Group Transformation: An Elusive Target. *Mol. Bio. Sys.* **2012**, *8*, 2484-2493. *Invited Review in Emerging Investigators Themed Issue.*

**\*\***Selected as Molecular BioSystems HOT Article and highlighted on their blog, http://blogs.rsc.org/mb/ (7/17/2012)

3. **Trader, D. J.** and Carlson, E. E. Siloxyl Ether-Functionalized Resins for Chemoselective Capture of Carboxylic Acids. *Org. Lett.* **2011**, *13*, 5652-5655.

1. Odendaal, A. Y.†; **Trader, D. J.**†;Carlson, E. E. Chemoselective Enrichment for Natural Products Discovery. *Chem. Sci*. **2011,** *2*, 760-764.

\*\*Highlighted in: *Chem. & Eng. News*, **2011**, *89*, Feb 14, 34-35 and *Chemistry World* (http://www.rsc.org/chemistryworld/News/2011/February/15021101.asp)

1. Gibbs, K.; Trader, D. J.; O’Brien, L. C.; O’Brien, J. J. Fourier Transform Spectroscopy of NiCl. Identification of the [10.3] 4-Phi-Fourier. *J. Mol. Spectrosc*. 2006, *240*, 64-68.*This journal does not appear in the PubMed database.*

**Patents:**

3. Carlson, E. E.; **Trader, D. J.**; Sidebottom, A. M. Design and Application of a Tag for Discovery of Natural Products Containing an Alkyne. U.S. Patent Number 20,150,240,006 A1, *Issued August 27, 2015*.

2. Carlson, E. E. and **Trader, D. J.** Siloxyl Ether Reagents for Chemoselective Reaction with Carboxylic Acids. U.S. Patent Number 20,140,107,328 A1, *Issued April 17, 2014*.

1. Carlson, E. E.; **Trader, D. J.**; Odendaal, A. Y. Chemoselective Enrichment for Compound Isolation. U.S. Patent Number 9,079,983 B2, *Issued July 14, 2015* and U.S. 9,303,059 B2, *Issued April 5, 2016*.

**Oral Presentations:**

8. **Trader, D.J.**; Simanski, S.; Kodadek, T. *Discovery of Small Molecule Agonists of the Proteasome-Mediated Degradation of α-Synuclein*, Rising Stars in Chemical Biology Mini-Symposium, Salt Lake City, UT, October 30, 2015.

7. **Trader, D. J.**; Kodadek, T. *New Techniques for the Generation of Rigid Peptoid Libraries and Their Application as Antagonists*, 9th Peptoid Summit, Berkley, CA, August 6-7, 2015.

6. **Trader, D. J.**; Carlson, E. E. *Silicon-Based Reversible Enrichment Tags for Natural Product Discovery*, ACS National Meeting, Indianapolis, Indiana, September 8-12, 2013, ORGN-19.

5. **Trader, D. J.**; Carlson, E. E. *Development and Application of Reversible Enrichment Tags for Natural Product Discovery*. Gordon Research Seminar Series, High Throughput Screening and Chemical Biology, New London, NH, June 1-2, 2013.

4. **Trader, D. J.**; Carlson, E. E. *Development and Application of Reversible Enrichment Tags for Natural Product Discovery*. 4th EuCheMS Chemistry Congress, Prague, Czech Republic, August 26-30, 2012, O-326.

3. **Trader, D. J.**; Carlson, E. E. *The Development of Chemoselective Enrichment Tags for Natural Product Discovery*. ACS Division of Organic Chemistry Graduate Research Symposium, Boulder, CO, July 26-29, 2012, 12EU-0404.

2. **Trader, D. J.**; Carlson, E. E. *Development of Reversible Enrichment Tags for Natural Product Discovery*. 242nd ACS National Meeting, Denver, CO, August 30, 2011, I&EC-15622.

1. **Trader, D. J.**; Carlson, E. E. *Discovery of Bioactive Natural Products*. Department of Chemistry and Biochemistry, Andrews University, Berrien Springs, MI. Departmental Seminar, March 10, 2011.

**Poster Presentations:**

11. **Trader, D.J.**; Simanski, S.; Kodadek, T. *LC-MS-Guided Discovery of 20S Agonists to Stimulate Alpha- Synuclein Degradation*, Gordon Research Conference, Bioorganic Chemistry, Andover, NH, June 5-9, 2016.

10. **Trader, D. J.**; Simanski, S.; Kodadek, T. *Discovery of Constrained Peptidomimetics for Novel Therapy of Multiple Myeloma and Ovarian Cancer*, Aspen Cancer Conference, Aspen, CO, July 12-15, 2015.

9. **Trader, D. J.**; Simanski, S.; Kodadek, T. *Discovery of Constrained Peptidomimetics for Novel Therapy of Multiple Myeloma and Ovarian Cancer,* Gordon Research Conference, High Throughput Screening and Chemical Biology, New London, NH, June 14-19, 2015.

8. **Trader, D. J.**; Simanski, S.; Kodadek, T. *Discovery of Constrained Peptidomimetics for Novel Therapy of Multiple Myeloma*, Miami Winter Symposium-Towards Personalized Cancer Medicine, Miami, FL, January 18-21, 2015, Abs. # 0069.

7. **Trader, D. J.**; Carlson, E. E. *Development and Application of Reversible Enrichment Tags for Natural Product Discovery*. Gordon Research Conference, High Throughput Screening and Chemical Biology, New London, NH, June 2-6, 2013.

6. **Trader, D. J.**; Sidebottom, A. M.; Carlson, E. E. *Chemoselective Enrichment Tags for Natural Product Discovery.* Keystone Symposia-Chemical Biology and Novel Tools in Pharmacology (B3), Santa Fe, NM, February 12-16, 2012, P-219.

5. **Trader, D. J.**; Carlson, E. E. *Carboxylic Acid-Selective Enrichment Strategy for Natural Product Isolation*. 42nd ACS Central Regional Meeting, Indianapolis, Indiana, June 8-10, 2011, BIOC-377.

1. **Trader, D. J.**; Carlson, E. E. *Carboxylic Acid-Selective Enrichment Strategy for Natural Product Isolation.* 28th H.C. Brown Lectures in Organic Chemistry, Purdue University, April 30, 2011.

3. **Trader, D. J.**; Carlson, E. E. *Carboxylic Acid-Selective Enrichment Strategy for Natural Product Isolation.* 241st ACS National Meeting, Anaheim, California, March 27-31, 2011, ORGN-235.

2. **Trader, D. J.**; McClure, J. R. *A New Synthesis for an Isobenzofuran*. 233rd ACS National Meeting, Chicago, Illinois, March 25-29, 2007, CHED-509.

1. **Trader, D. J.**; O’Brien, L. C. *Spectroscopy of CuN: A New Electronic Transition in the Near-Infrared*. 232nd ACS National Meeting, San Francisco, California, Sept. 10-14, 2006, CHED-349.

**Service and Mentoring Activities:**

Jan. 2015- TSRI-FL Society of Research Fellows, President

Dec. 2015

Aug. 2015 ChemDraw Software Class Instructor, TSRI

April 2014- F1000 Associate Faculty Member

Present

Feb. 2014 Volunteer at Annual Scripps Outreach Event CELL-ebration, teaching middle school

and 2015 students about science and research

**Professional Development:**

Oct. 2011 COACh Workshop – Basic Post-doctoral and Graduate Negotiations, Problem Solving, and Conflict Resolution, Bloomington, IN

Aug. 2011 Agilent UHPLC Master Class Seminar, Indianapolis, IN

May 2011 Preparing for Life After Graduate School Workshop, ACS Office of Graduate Education, Bloomington, IN

Feb. 2009 Proteomics Short Course presented by Dr. Katy Barglow, Bloomington, IN

Mar. 2009 Agilent Time-of-Flight Mass Spectrometer Course, Bloomington, IN