

**PATRICK S. FIER, Ph.D.**

Merck & Co., Inc.

**PROFESSIONAL WORK EXPERIENCE**

**Merck & Co., Inc.**

Associate Principal Scientist, Process Chemistry, May 2017-Present

Senior Scientist, Process Chemistry, January 2015-May 2017

**EDUCATION**

**Doctor of Philosophy: Organic Chemistry**

University of California, Berkeley (Advisor: Prof. John F. Hartwig) 2011-2014

University of Illinois, Urbana-Champaign (Advisor: Prof. John F. Hartwig) 2010-2011

**Bachelor of Science: Chemistry, Magnum Cum Laude** 2007-2009

University of Northern Iowa (Advisor: Prof. R. Martin Chin)

**AWARDS AND DISTINCTIONS** (Selected Examples)

**Reaxys PhD Prize, Finalist** – 2015

**American Chemical Society Division of Organic Chemistry Fellowship** – 2013

**Chevron Graduate Fellowship** – 2013

**First Place Poster Presentation** – CaRLa Winter School; Heidelberg, Germany 2013

**Roger Adams Graduate Fellowship** – University of Illinois, Urbana-Champaign 2011-2012

**NSF Research Experience for Undergraduates Grant** – University of Michigan, Ann Arbor 2009

**Louis Begeman Memorial Scholarship** – University of Northern Iowa 2009

**EXTERNAL PRESENTATIONS** (Selected Examples)

**Oral Presentation, Invited** – Organometallic Catalysis Directed Towards Organic Synthesis (OMCOS), Heidelberg, Germany – 2019

**Oral Presentation, Invited** – Max-Planck-Institut für Kohlenforschung, Mülheim an der Ruhr, Germany - 2019

**Oral Presentation, Invited** – Canadian Society of Chemistry Conference, Edmonton, Canada - 2018

**Oral Presentation, Invited** – Florida Heterocycles Conference, Gainesville, FL - 2018

**Poster Presentation** – Merck Symposium, University of Illinois, Urbana-Champaign – 2017, 2018

**Poster Presentation** – Merck Symposium, University of California, Berkeley – 2016

**Poster Presentation** – Organic Reactions & Processes Gordon Research Conference – 2014, 2016

**Oral Presentation** – Reaxys PhD Prize Symposium, Hong Kong – 2015

**Oral Presentation** – ACS Meeting, San Francisco – 2014

**Poster Presentation** – CaRLa Winter School, Heidelberg, Germany – 2013

**Oral Presentation** – ACS Winter Fluorine Conference, St. Pete Beach, FL – 2013

## PUBLICATIONS

### **Late-Stage <sup>18</sup>O Labeling of Primary Sulfonamides via a Degradation-Reconstruction Pathway**

Reilly, S. W.; Bennett, F.; [Fier, P. S.](#); Ren, S.; Strotman, N. A. *ChemRxiv and Submitted for Publication*

### **Reductive Cleavage of Secondary Sulfonamides: Converting Terminal Functional Groups into Versatile Synthetic Handles**

[Fier, P. S.](#); Kim, S.; Maloney, K. M. *J. Am. Chem. Soc.* **2019**, *141*, 18416.

### **Reductive sp<sup>2</sup>-sp<sup>3</sup> Cross-Coupling of Alkyl Sulfones and Aryl Bromides**

Hughes, J. M. E.; [Fier, P. S.](#) *Org. Lett.* **2019**, *21*, 5650.

### **Applications and Syntheses of Fluorinated Pharmaceuticals** (Book Chapter; Invited Contribution)

[Fier, P. S.](#); Campeau, L. C. *Frontiers of Organofluorine Chemistry* (World Scientific); In Press.

### **NHC-Catalyzed Deamination of Primary Sulfonamides: A Platform for Late-Stage Functionalization**

[Fier, P. S.](#); Maloney, K. M. *J. Am. Chem. Soc.* **2019**, *141*, 1441.

### **<sup>34</sup>S: A New Opportunity for the Efficient Synthesis of Stable Isotope Labeled Compounds**

Ren, S.; [Fier, P. S.](#); Ren, H.; Hoover, A. J.; Hesk, D.; Marques, R.; Mergelsberg, I. *Chem. Eur. J.* **2018**, *24*, 7133.

### **A Bifunctional Reagent Designed for the Mild, Nucleophilic Functionalization of Pyridines**

[Fier, P. S.](#) *J. Am. Chem. Soc.* **2017**, *139*, 9499.

### **Reagent Design and Ligand Evolution for the Development of a Mild Copper-Catalyzed Hydroxylation Reaction**

[Fier, P. S.](#); Maloney, K. M. *Org. Lett.* **2017**, *19*, 3033.

**Synthesis of Complex Phenols Enabled by a Rationally Designed Hydroxide Surrogate**

Fier, P. S.; Maloney, K. M. *Angew. Chem. Int. Ed.* **2017**, *56*, 4478.

**An Atom-Economical Method To Prepare Enantiopure Benzodiazepines with NCarboxyanhydrides**

Fier, P. S.; Whittaker, A. M. *Org. Lett.* **2017**, *19*, 1454.

**Site-Selective C-H Fluorination of Pyridines and Diazines with AgF<sub>2</sub>**

Fier, P. S.; Hartwig, J. F. *Org. Synth.* **2017**, *94*, 46.

**Direct Conversion of Haloarenes to Phenols under Mild, Transition-Metal-Free Conditions**

Fier, P. S.; Maloney, K. M. *Org. Lett.* **2016**, *18*, 2244.

**Synthesis and Late-Stage Functionalization of Complex Molecules through C–H Fluorination and Nucleophilic Aromatic Substitution**

Fier, P. S.; Hartwig, J. F. *J. Am. Chem. Soc.* **2014**, *136*, 10139.

**Copper-Mediated Perfluoroalkylation of Heteroaryl Bromides with (phen)CuR<sub>F</sub>**

Mormino, M. G.; Fier, P. S.; Hartwig, J. F. *Org. Lett.* **2014**, *16*, 1744.

**Selective C-H Fluorination of Pyridines and Diazines Inspired by a Classic Amination Reaction.**

Fier, P. S.; Hartwig, J. F. *Science* **2013**, *342*, 956.

**Copper-Mediated Fluorination of Arylboronate Esters. Identification of a Copper(III) Fluoride Complex.**

Fier, P. S.; Luo, J.; Hartwig, J. F. *J. Am. Chem. Soc.* **2013**, *135*, 2552.

**Synthesis of Difluoromethyl Ethers with Difluoromethyltriflate**

Fier, P. S.; Hartwig, J. F. *Angew. Chem. Int. Ed.* **2013**, *52*, 2092.

**Copper-Mediated Fluorination of Aryl Iodides**

Fier, P. S.; Hartwig, J. F. *J. Am. Chem. Soc.* **2012**, *134*, 10795.

**Copper-Mediated Difluoromethylation of Aryl and Vinyl Iodides**

Fier, P. S.; Hartwig, J. F. *J. Am. Chem. Soc.* **2012**, *134*, 5524.

**A General Strategy for the Perfluoroalkylation of Arenes and Arylbromides by Using Arylboronate Esters and [(phen)CuR<sub>F</sub>]**

Litvinas, N. D.; Fier, P. S.; Hartwig, J. F. *Angew. Chem. Int. Ed.* **2012**, *51*, 536.

**Selective Dialkylation of a Doubly Linked Dicyclopentadiene Ligand and the Ensuing Ruthenium**

**Complexes.**

Fier, P. S.; Reinig, R. R.; King, J.; Dickerson, C.; Chin, R. M. *Organometallics* **2012**, *31*, 261.