

PATRICK S. FIER, Ph.D.

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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)

SELECTED PROFESSIONAL ACTIVITIES - Merck & Co., Inc.

Group Leader, Project Leader, Recruiting Committee, Interviewing Committee, Internal Chemistry Consultant, Scientific Advisory Council Member

AWARDS AND DISTINCTIONS (Selected Examples; Not Including Internal Awards at Merck & Co., Inc.)

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 ¹⁸O 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 sp²-sp³ 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.

³⁴S: 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 AgF₂

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_f

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_F]

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.