

Rylan J. Lundgren

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ACADEMIC and PROFESSIONAL HISTORY

Assistant Professor of Chemistry

University of Alberta
Edmonton, AB, Canada
July 2013 –

July 2013 – present

NSERC Postdoctoral Fellow, Chemistry

Massachusetts Institute of Technology, Cambridge, MA, USA
California Institute of Technology, Pasadena, CA, USA
Research Supervisor: Dr. Gregory C. Fu

December 2010 – May 2013

Doctor of Philosophy, Chemistry

Dalhousie University, Halifax, NS, Canada
Research Supervisor: Dr. Mark Stradiotto

September 2006 – November 2010

Bachelor of Science with Honours, Chemistry

University of Manitoba, Winnipeg, MB, Canada
Research Supervisor: Dr. Mario Bieringer

September 2001 – May 2006

SELECTED AWARDS and SCHOLARSHIPS

CNC/IUPAC Travel Award (2019)
Canadian Representative EuCheMS Young Investigator Workshop (2018)
Thieme Chemistry Journal Award (2014)
NSERC Postdoctoral Fellowship (2010-2012)
Canadian Society for Chemistry National Award for Graduate Work in Inorganic Chemistry (2011)
Killam Doctoral Research Fellowship (2008-2010)
NSERC Postgraduate Scholarship D (2007-2010)

RESEARCH INTERESTS

Homogeneous catalysis involving transition metals; synthetic organic methodology development; ligand design in metal chemistry; reaction mechanisms of metal-mediated processes; stereoselective synthesis and catalysis; green/sustainable chemical synthesis; allenes in bioorthogonal ligations and cycloadditions.

PUBLICATIONS

Independent Research

- (33) **Catalytic Enantioselective Benzylolation Directly from Aryl Acetic Acids**
J. Am. Chem. Soc. **2018** *140*, 17418
Patrick J. Moon, Zhongyu Wei, Rylan J. Lundgren
- (32) **Expanding the Limit of Pd-Catalyzed Decarboxylative Benzylations**
Chem. Commun. **2018** *54*, 6835
Duanyang Kong, Patrick J. Moon, Wenyu Qian, Rylan J. Lundgren
- (31) **Decarboxylative Benzylolation of Aryl and Alkenyl Boronic Esters**
Angew. Chem. Int. Ed. **2018** *57*, 4612
Patrick J. Moon, Anis Fahandej-Sadi, Wenyu Qian, Rylan J. Lundgren
- (30) **Chemoselective Z-Olefin Synthesis via Rh-Catalyzed, Formate Mediated 1,6-Reduction**
Angew. Chem. Int. Ed. **2018** *57*, 3981
Raphael Dada, Zhongyu Wei, Ruohua Gui, Rylan J. Lundgren
- (29) **Z-Selective Iridium-Catalyzed Cross-Coupling of Allylic Carbonates and α -Diazo Esters**
Chem. Sci. **2018** *9*, 238
Bryce N. Thomas, Patrick J. Moon, Shengkang Yin, Alex Brown, Rylan J. Lundgren
- (28) **Copper-Mediated Synthesis of Mono-Fluoro Aryl Acetates via Decarboxylative Cross-Coupling**
Synlett **2017** *28*, 2886
Anis Fahandej-Sadi, Rylan J. Lundgren
- (27) **Catalytic, Reversible Arylation of Phosphines and Sulfides**
Angew. Chem. Int. Ed. **2017** *56*, 11309 (*Highlight*)
Rylan J. Lundgren
- (26) **Copper-Mediated Oxidative α -Arylation of Carbonyl Compounds with Boronic Acid Derivatives**
Synlett **2017** *28*, 515
Patrick J. Moon, Rylan J. Lundgren
- (25) **Ambient Decarboxylative Arylation of Malonate Half-Esters via Oxidative Catalysis**
J. Am. Chem. Soc. **2016**, *138*, 13826
Patrick J. Moon, Shengkang Yin, Rylan J. Lundgren
- (24) **Allene Functionalized Azobenzene Linker Enables Rapid and Light-Responsive Peptide Macrocyclization**
Bioconjugate Chem. **2016**, *27*, 509
Mohammad R. Jafari, Jenner Lakusta, Rylan J. Lundgren, Ratmir Derda

- (23) **Oxidative Coupling of Aryl Boron Reagents with sp^3 -Carbon Nucleophiles: The Enolate Chan–Evans–Lam Reaction**
Angew. Chem. Int. Ed. **2016**, *55*, 1984
Patrick J. Moon, Heather M. Halperin, Rylan J. Lundgren
- (22) **Chemo- and Regioselective Reductive Transposition of Allylic Alcohol Derivatives via Iridium or Rhodium Catalysis.**
Chem. Commun. **2016**, *52*, 958
Rylan J. Lundgren, Bryce N. Thomas

Postdoctoral, Graduate, and Undergraduate Research

- (21) **Enantioconvergent Cross-Couplings of Racemic Alkylmetal Reagents with Unactivated Secondary Alkyl Electrophiles: Catalytic Asymmetric Negishi α -Alkylations of N-Boc-pyrrolidine**
J. Am. Chem. Soc. **2013**, *135*, 10946
Christopher J. Cordier, Rylan J. Lundgren, Gregory C. Fu
- (20) **Transition Metal-Catalyzed Alkylations of Amines with Alkyl Halides: Photoinduced, Copper-Catalyzed Couplings of Carbazoles**
Angew. Chem. Int. Ed. **2013**, *52*, 5129
Alexander C. Bissember, Rylan J. Lundgren, Sidney Cruetz, Jonas C. Peters, Gregory C. Fu
- (19) **Catalytic Asymmetric C–N Bond Formation: Phosphine-Catalyzed Intra- and Intermolecular γ -Addition of Nitrogen Nucleophiles to Allenates and Alkynoates**
Angew. Chem. Int. Ed. **2013**, *52*, 2525
Rylan J. Lundgren, Ashraf Wilsily, Nicolas Marion, Cong Ma, Ying Kit Chung, Gregory C. Fu
- (18) **An Examination of the Palladium/Mor-DalPhos Catalyst System in the Context of Selective Ammonia Monoarylation at Room Temperature**
Chem. Eur. J. **2013**, *19*, 2131
Pamela G. Alsabeh, Rylan J. Lundgren, Robert McDonald, Carin C. C. Johansson Seechurn, Thomas Colacot, Mark Stradiotto
- (17) **Recent Advances in Buchwald-Hartwig Amination Enabled by the Application of Sterically Demanding Phosphine Ancillary Ligands**
Aldrichimica Acta **2012**, *45*, 59 (Review)
Rylan J. Lundgren, Mark Stradiotto
- (16) **Addressing Challenges in Palladium-Catalyzed Cross-Coupling Reactions Through Ligand Design**
Chem. Eur. J. **2012**, *18*, 9758 (Review)
Rylan J. Lundgren, Mark Stradiotto

- (15) **Design of New P,N "DalPhos" Ligands: Applications in Transition Metal Catalysis**
Synlett **2011**, 2443 (Review)
Rylan J. Lundgren, Kevin D. Hesp, Mark Stradiotto
- (14) **Palladium-Catalyzed Synthesis of Indoles via Ammonia Cross-Coupling-Alkyne Cyclization**
Chem. Commun. **2011**, 47, 6936
Pamela G. Alsabeh, Rylan J. Lundgren, Lauren E. Longobardi, Mark Stradiotto
- (13) **Palladium-Catalyzed Mono- α -Arylation of Acetone with Aryl Halides and Tosylates**
J. Am. Chem. Soc. **2011**, 133, 5194
Kevin D. Hesp, Rylan J. Lundgren, Mark Stradiotto
- (12) **Transition Metal-Catalyzed Trifluoromethylation of Aryl Halides**
Angew. Chem. Int. Ed. **2010**, 48, 9322 (Highlight)
Rylan J. Lundgren, Mark Stradiotto
- (11) **Palladium Catalyzed Cross-Coupling of Aryl Chlorides and Tosylates with Hydrazine**
Angew. Chem. Int. Ed. **2010**, 49, 8686
Rylan J. Lundgren, Mark Stradiotto
- (10) **A P,N-Ligand for Pd-Catalyzed Ammonia Arylation: Coupling of Deactivated Aryl Chlorides, Chemoselective Aminations, and Room Temperature Reactions**
Angew. Chem. Int. Ed. **2010**, 49, 4071
Rylan J. Lundgren, Brendan D. Peters, Pamela G. Alsabeh, Mark Stradiotto
- (9) **A Highly Versatile Catalyst System for the Cross-Coupling of Aryl Chlorides and Amines**
Chem. Eur. J. **2010**, 16, 1983
Rylan J. Lundgren, Antonia Sapping-Kumankumah, Mark Stradiotto
- (8) **Zwitterionic Relatives of Cationic Platinum Group Metal Complexes: Applications in Stoichiometric and Catalytic Sigma-Bond Activation**
Angew. Chem. Int. Ed. **2010**, 49, 494 (Review)
Mark Stradiotto, Kevin D. Hesp, Rylan J. Lundgren
- (7) **Rapid Ketone Transfer Hydrogenation by Employing Simple, In Situ Prepared Iridium(I) Precatalysts Supported by "Non-NH" P,N Ligands**
Chem. Eur. J. **2008**, 14, 10388
Rylan J. Lundgren, Mark Stradiotto
- (6) **Neutral, Cationic, and Zwitterionic Ru(II) Atom Transfer Radical Addition Catalysts Supported by P,N Substituted Indenes or Indenide Ligands**
Organometallics **2008**, 27, 250
Rylan J. Lundgren, Matthew A. Rankin, Robert McDonald, Mark Stradiotto

- (5) **Synthesis and Reactivity of Platinum Group Metal Complexes Featuring the New Pincer-like Bis(phosphino) silyl Ligand $[\kappa^3\text{-}(2\text{-Ph}_2\text{PC}_6\text{H}_4)_2\text{SiMe}]$ ([PSiP]): Application in the Ruthenium Mediated Transfer Hydrogenation of Ketones**
Organometallics **2007**, 26, 6522
 Morgan C. MacInnis, Darren F. MacLean, Rylan J. Lundgren, Robert McDonald, Laura Turculet
- (4) **A Formally Zwitterionic Ruthenium Catalyst Precursor for the Transfer Hydrogenation of Ketones that Does Not Feature an Ancillary Ligand N-H Functionality**
Angew. Chem. Int. Ed. **2007**, 46, 4732
 Rylan J. Lundgren, Matthew A. Rankin, Robert McDonald, Gabriel Schatte, Mark Stradiotto
- (3) **Formation, Structure and Magnetism of the Metastable Defect Fluorite Phases $\text{AVO}_{3.5+x}$ (A = In, Sc)**
J. Solid State Chem. **2007**, 3333
 Shahid P. Shafi, Rylan J. Lundgren, Lachlan M. D. Cranswick, Mario Bieringer
- (2) **Synthesis, Phase Evolution and Magnetism in $\text{Sc}_{(1-x)}\text{Lu}_x\text{VO}_3$ (x = 0 - 1.0)**
Chem. Mater. **2007**, 19, 3945
 Rylan J. Lundgren, Lachlan M. D. Cranswick, Mario Bieringer
- (1) **In Situ X-Ray Powder Diffraction, Synthesis, and Magnetic Properties of InVO_3**
J. Solid State Chem. **2006**, 179, 3599
 Rylan J. Lundgren, Lachlan M. D. Cranswick, Mario Bieringer

MONOGRAPHS and BOOK CHAPTERS

- (5) **Applications of Sterically Demanding Phosphine Ligands in Palladium-Catalyzed Cross-Coupling leading to $\text{C}(\text{sp}^2)\text{-E}$ Bond Formation (E = NH_2 , OH, and F)**
Ligand Design in Metal Chemistry: Reactivity and Catalysis (Ed Mark Stradiotto and Rylan Lundgren)
 John Wiley & Sons Ltd. Mark Stradiotto and Rylan J. Lundgren.
- (4) **Key Concepts in Ligand Design: An Introduction**
Ligand Design in Metal Chemistry: Reactivity and Catalysis (Ed Mark Stradiotto and Rylan Lundgren)
 John Wiley & Sons Ltd. Rylan J. Lundgren and Mark Stradiotto
- (3) **Bis(adamant-1-yl)(2-morpholinophenyl)phosphine (Mor-DalPhos)**
Electronic Encyclopedia of Reagents for Organic Synthesis 2013, John Wiley & Sons Ltd. Rylan J. Lundgren
- (2) **2-[Bis(1-adamantanyl)phosphino]-*N,N*-dimethylaniline**
Electronic Encyclopedia of Reagents of Organic Synthesis 2013, John Wiley & Sons Ltd. Rylan J. Lundgren
- (1) ***N,N*-Dimethyl 4-[di(tert-butyl)phosphino]aniline**
Electronic Encyclopedia of Reagents for Organic Synthesis 2011, John Wiley & Sons Ltd. Rylan J. Lundgren

PATENTS

- (3) **Method for the Catalytic Hydrofunctionalization of Dienes to Generate Z-Olefins.**
Rylan J. Lundgren. Date of Filing June 6, 2018, US Prov. Patent 62/681,454
- (2) **Oxidative Coupling of Aryl Boron Reagents with sp³-Carbon Nucleophiles, and Ambient Decarboxylative Arylation of Malonate Half-Esters via Oxidative Catalysis.**
Rylan J. Lundgren, Patrick J. Moon. Date of Filing Jan. 3, 2018 US Prov. Patent 62/442,676
- (1) **Novel Catalysts.**
Rylan J. Lundgren, Mark Stradiotto. Date of Filing Nov. 17, 2011 PCT/US2011/061130.

CITATION OVERVIEW (Scopus, Feb. 2019 includes book chapters)

Sum of Total Cites:	1,590
without self-citations	1,528
<i>h</i> -index:	19
Average citation per item	44
5 papers with >100 citations	
16 publications in journals with IF > 10	[6 from independent career]

RESEARCH LECTURES and PRESENTATIONS [>40 since 2014]

2019 – University of Montreal. Montreal, QC Invited Seminar
2019 – McGill University. Montreal, QC Invited Seminar

2018 – University of Manitoba. Winnipeg, MB, Invited Seminar
2018 – Queen’s University. Kingston, ON, Invited Seminar
2018 – University of Calgary. Calgary, AB Invited Seminar
2018 – 10th EuCheMS Young Investigator Workshop. Oxford, UK Invited Seminar
2018 – University of York. York, UK Invited Seminar
2018 – University of Edinburgh. Edinburgh, UK Invited Seminar
2018 – University of St. Andrews. St. Andrews, UK Invited Seminar
2018 – Inorganic Chemistry Exchange Program Annual Meeting. Edmonton, AB Plenary Lecture
2018 – Gordon Research Conferences Organic Reactions and Processes. Easton, MA Contributed
2018 – ACS Reaction Mechanisms Conference. Vancouver, BC Invited Seminar
2018 – Canadian Society for Chemistry Conference. Edmonton, AB Invited Seminar
2018 – University of California, Riverside. Riverside, CA, USA Invited Seminar
2018 – California Institute of Technology. Pasadena, CA, USA Invited Seminar
2018 – University of Texas, San Antonio. San Antonio, TX, USA Invited Seminar
2018 – University of Texas, Austin. Austin, TX, USA Invited Seminar
2018 – The Ohio State University. Columbus, OH, USA Invited Seminar
2018 – Indiana University. Bloomington, IN, USA Invited Seminar
2018 – University of British Columbia. Vancouver, BC Invited Seminar

2018 – Washington University. Seattle, WA, USA Invited Seminar

2017 – Brock University. St. Catherines, ON Invited Seminar

2017 – McMaster University. Hamilton, ON Invited Seminar

2017 – University of Toronto. Toronto, ON Invited Seminar

2017 – Gordon Research Conferences Organic Reactions and Processes. Easton, MA Contributed

2017 – ACS Fall Meeting. Washington, DC, USA Contributed

2017 – Canadian Society for Chemistry Conference. Toronto, ON Invited Seminar

2017 – BC/Alberta Inorganic Discussion Weekend Plenary Lecture

2017 – University of Victoria. Victoria, BC Invited Seminar

2017 – St. Mary's University. Halifax, NS Invited Seminar

2017 – Dalhousie University. Halifax, NS Invited Seminar

2017 – University of New Brunswick, Fredericton, NB Invited Seminar

2016 – Canadian Society for Chemistry Conference. Halifax, NS Contributed

2015 – Gordon Research Conferences Organometallics. Salve Regina, RI, USA Contributed

2015 – Organic and Bioorganic Workshop for Leading Young Canadian Chemists, Western Shore, NS

2015 – Canadian Society for Chemistry Conference. Ottawa, ON Contributed

2015 – University of Alberta CIC Section, Edmonton, AB Invited Seminar

2014 – University of Saskatchewan, Saskatoon, SK Invited Seminar

2014 – University of Regina, Regina, SK Invited Seminar

2014 to 2018 – 25+ oral and poster presentations by UG, GS, and PDF HQP in the past five years at regional, national, and international conferences and meetings: Gordon Research Conferences Heterocycles, Gordon Research Conferences Organometallics, International Conference on Organometallic Chemistry, ACS Reaction Mechanisms Conference, Canadian Society for Chemistry Conferences, Banff Symposium for Organic Chemistry, BC/Alberta Inorganic Discussion Weekend, Western Canada Undergraduate Chemistry Conferences.