

# Jeffrey B. Johnson

Department of Chemistry  
Hope College  
Holland, MI 49422  
Phone: (616)-395-7083  
jjohnson@hope.edu

---

## Education

- Ph. D. in Chemistry Sept 2000 – Dec 2004  
University of Wisconsin-Madison  
Advisor: Prof. Charles P. Casey  
Thesis Title: Analysis of a Hydroxycyclopentadienyl Ruthenium Hydride Ligand-Metal Bifunctional Catalyst: Reactivity, Mechanistic Studies and the Development of More Active and Selective Catalysts
- B.A. in ACS Chemistry (*Magna cum laude*) Sept 1996 – May 2000  
Gustavus Adolphus College, St. Peter, MN  
Advisor: Prof. Brian A. O'Brien

## Professional Experience

- Associate Professor of Chemistry, Hope College, Holland, MI July 2013 – Present  
Schaap Research Fellow Oct 2013 – Present
- Assistant Professor of Chemistry, Hope College July 2007 – June 2013  
Towsley Research Scholar Nov 2009 – Aug 2013
- Postdoctoral Fellow Jan 2005 – July 2007  
NIH Postdoctoral Fellow (2006 – 2007)  
Colorado State University, Fort Collins, CO  
Prof. Tomislav Rovis

*Enantioselective desymmetrization of meso carboxylic anhydrides – use in natural product synthesis*  
*Development of carbon dioxide fixation methodology*

Referee for over a dozen journals, including:

*Journal of the American Chemical Society, Chemical Society Reviews, Chemical Communications, Journal of Organometallic Chemistry, Tetrahedron Letters, Organic and Biomolecular Chemistry, Nature: Chemistry, Organometallics, Synthesis, Organic Letters, ACS Catalysis*

## Supervised Research Experience

- Doctoral Research Sept 2000 – Dec 2004  
University of Wisconsin-Madison with Prof. Charles P. Casey  
*Reaction mechanism elucidation of hydrogenation catalysis through kinetic and isotopic labeling studies*  
*Development of more active and selective hydrogenation catalysts*
- Stockholm University, Stockholm, Sweden with Prof. Jan-E. Bäckvall April – July 2001  
*Mechanistic elucidation of alcohol dehydrogenation reaction*
- Undergraduate Research Feb 1998 – May 2000  
Gustavus Adolphus College with Prof. Brian A. O'Brien  
Includes Moissan Summer Undergraduate Research Fellowship (ACS Fluorine Division)  
*Development of synthetic route to primary alkyl phosphines via phospho-Gabriel reaction*
- Colorado State University with Prof. Frank R. Stermitz June – Aug 1999  
National Science Foundation-Research Experience for Undergraduates  
*Synthesis of analogues of naturally occurring flavonolignans for testing of biological activity*

## Honors and Awards

Ruth and John Reed Faculty Achievement Award (Hope College), 2016  
Henry Dreyfus Teacher Scholar Award, 2015  
Research Corporation Cottrell Scholar, 2015  
Inaugural Hope College Schaap Research Fellow, Hope College, 2013 – 2018 (renewable)  
NSF Faculty Early CAREER Development Award, 2012-2017  
Selected for Young Academic Investigators Symposium 244<sup>th</sup> ACS National Meeting, Philadelphia, PA, August 21, 2012. Only representative (of 16) from a Primarily Undergraduate Institution.  
Men in Mentoring Award from Michigan State Sen. Wayne Kuipers, May 2010  
Hope College Towsley Research Scholar, 2009 – 2013  
Research Corporation Cottrell College Science Award, 2009  
Camille and Henry Dreyfus Faculty Start-Up Award, 2007  
ACS Organic Division Graduate Fellow – Emmanuil Troyansky Fellowship, 2003 – 2004  
McElvain Scholarship (UW), 2000 – 2001  
*Phi Beta Kappa*, inducted 1999  
Barry M. Goldwater Scholar, 1999 – 2000  
*Sigma Xi*, inducted 1999  
National Merit Scholar, 1996 – 2000

## Research Mentor

*To date, 69 students have participated in research within the Johnson Lab, accounting for a cumulative 194 semesters/summer of active research.*

*Students include: 54 Hope College Undergraduates*

- 11 underrepresented minority students*
- 14 external students (primarily through REU program)*
- 7 high school students (primarily through REACH program)*

*Of the 48 college graduates to date:*

- 20 enrolled in graduate school for chemistry (5 PhD, 1 MA to date) – at MIT, Princeton, UC-Irvine (2), Wisconsin (3), Michigan (3), Columbia, Duke, North Carolina (2), Rochester, Georgia, Chicago, Emory, Auckland*
- 8 enrolled in medical school – at Michigan (2), Michigan State (2), Wayne State, Minnesota, Kirksville, Rush*
- 4 enrolled in dental school – at Michigan (3), Marquette*
- 4 enrolled in graduate school for education – Teach for America, Teach Kentucky, Notre Dame, Purdue*
- 6 are currently employed in the chemical industry*

*Students have combined to give 253 research presentations, including 58 at regional meetings and 33 at national conferences.*

## Notable External Awards Received by Undergraduate Research Students

### *NSF Predoctoral Fellowship (7 in total)*

2016 – Caitlin Kozack  
2015 – Joseph M. Dennis  
2014 – James R. Bour (also Honorable Mention 2013)  
2014 – Joseph J. Gair (also Honorable Mention 2013)  
2013 – J. Patrick Lutz (also Honorable Mention 2012)  
2012 – Colin M. Rathbun  
2011 – Valerie J. Winton

### *Barry Goldwater Scholarship (2 Scholar, 4 Honorable Mention)*

2016 – Kathryn Trentadue  
2014 – Caitlin Kozack (Honorable Mention)  
2013 – Amanda Witte (Calvin College, Honorable Mention)  
2011 – J. Patrick Lutz (Honorable Mention)  
2011 – Colin M. Rathbun  
2010 – Valerie J. Winton (Honorable Mention)

## Teaching Experience

<i>Instructor.</i> Organic Chemistry I (CSU, Hope)	2006 – Present
Organic Chemistry II (Hope)	2008 – Present
Organic Chemistry Laboratory I (Hope)	2007 – Present
Organic Chemistry Laboratory II (Hope)	2008 – Present
Structure, Synthesis and Dynamics I (Hope)	2009 – Present
Inorganic Chemistry (Hope)	2010 – Present
Senior Seminar (Hope)	Spring 2017
First Year Seminar (Hope)	Fall 2012
<i>Instructor.</i> General Chemistry Review for MCAT (The Princeton Review)	2003 – 2004
<i>Substitute lecturer.</i> Undergraduate organic chemistry (CSU)	2005 – 2007
Graduate level organometallics (UW, CSU)	2003 – 2007

## Hope College Service Activities

Beckman Scholars Program Administrator	2015-present
Hope College Chemistry Department Faculty Search Committee	Fall 2009, Fall 2012, Fall 2014 (chair), Fall 2015 (chair)
Hope College Academic Affairs Board	2014-present, 2016-17 (chair)
Hope College Committee on Experiential Learning	2016-17 (chair)
Hope College Curriculum Committee (chair)	2014-2016
Hope College Strategic Planning Subcommittee	2014
Health Professions Advisory Committee	2010-present
Hope College Chemistry Department Safety Committee	2012-2016
Advisor, Hope College Chemistry Club/ACS Student Affiliates Chapter	2008-present
Advisor, Hope College Alpha Phi Omega Service Fraternity	2015-present
Hope College Judicial Board	2009-2013

## External Grant Support (at Hope College)

Henry Dreyfus Teacher-Scholar Award “Carbon-Carbon Single Bond Activation: Mechanistic Understanding Leading to New Methodologies”, \$60,000, 08/15/2015 – 08/14/2020. Awarded 8/15.

Beckman Foundation “A Beckman Scholar’s Program at Hope College”, \$104,000, 05/15/2015 – 05/14/2018. (co-PI with Prof. Aaron Best). Awarded 2/15.

NIH-R15 AREA Program, "Imides as Electrophiles in the Development of Transition Metal-Catalyzed Decarbonylative Cross-Coupling Methodology" \$222,344, 01/01/2015 – 12/31/2017. Declined.

NSF-CAREER: "Carbon-Carbon Single Bond Activation – Mechanistic Comparisons and Reaction Development" \$400,000, 09/01/2012 – 08/31/2017. Awarded 1/12.

NSF-RUI: "Nickel-Catalyzed Methods for the Asymmetric Cross-Coupling with Cyclic Imides" \$274,900, 01/01/2013-12/31/2015. Declined.

NIH-R15 AREA Program, "Imides as Electrophiles in Asymmetric Transition Metal-Catalyzed Cross Coupling" \$228,382, 05/15/2012 – 05/14/2015. Declined.

Moissan Summer Undergraduate Research Fellowship – ACS Division of Fluorine Chemistry, "The Role of Fluorine in the Stabilization of Pd-Aryl Intermediates" \$3500, 05/15/2011 – 07/30/2011. Awarded 3/11.

Younger Chemists Committee, CIBA Young Scientist Travel Award for attendance at the 241<sup>st</sup> National Meeting of the American Chemical Society, March 2011. \$500. Awarded 1/11.

ACS-PRF – Undergraduate New Investigator, "Toward Greater Understanding and Expanded Utility of the Palladium-Catalyzed Activation of Carbon-Carbon Single Bonds" \$50,000, 09/01/2010 – 08/30/2012. Awarded 6/10.

ACS Division of Organic Chemistry Faculty Travel Award for attendance of the 41<sup>st</sup> National Organic Symposium, June 2009. \$600. Awarded 5/09.

ACS-PRF – Undergraduate New Investigator, "The Utilization of Carbon Dioxide in New Applications of Carbon-Carbon Single Bond Activation Methodology" \$50,000, 09/01/2009 – 08/30/2011. Declined.

National Science Foundation – Major Research Instrumentation, "NSF-MRI: Acquisition of a Remotely-Accessible 400 MHz Spectrometer" \$416,767, 09/01/2009 – 08/30/2012. co-PI: Moses Lee. Awarded 8/09.

Eli Lilly, "Origin of Stereoselectivity in a Gilman Addition to an  $\alpha,\beta$ -Unsaturated Ester" \$5,000, 06/01/2009 – 05/31/2010. Awarded 5/09.

Research Corporation Cottrell College Science Award, "Carbon-Carbon Single Bond Activation for the Carboacylation of Alkenes" \$60,072, 2009-2010. Awarded 10/08.

Camille and Henry Dreyfus Faculty Start-Up Award, "Development of Carbon-Carbon Bond Activation and Functionalization Methodology" \$30,000, 2007-2012. Awarded 8/07.

## Hope College Support

Schaap Research Fellow, unrestricted research endowment, \$10,000 per year 10/2013 – 6/2018 (eligible for renewal). Awarded 10/13.

Towsley Research Scholar Program "Carbon-Carbon Bond Activation: Mechanistic Elucidation and New Methods for Carbon Dioxide Fixation" \$16,000 + semester sabbatical (spring 2011), 1/1/2010 – 12/30/2013. Awarded 11/09.

## Affiliations

American Chemical Society, 1999 – Present

Organic, Inorganic and Fluorine Divisions

Phi Beta Kappa, 1999 – Present

American Association for the Advancement of Science, 2000 – Present

Sigma Xi, 2000 – Present

Council of Undergraduate Research, 2010 – Present

Midwest Association of Chemistry Teachers at Liberal Arts Colleges, 2011 - Present

### Independent Publications (*undergraduate coauthors are underlined*)

- Dennis, Joseph M.; Compagner, Chad T.; Dorn, Stanna K.; Johnson, Jeffrey B. "Rhodium-Catalyzed Interconversion of Quinolinyl Ketones with Boronic Acids via C-C Bond Activation" *Org. Lett.* **2016**, *18*, 3334.
- DeGlopper, Kimberly S.; Fodor, Sarah K.; Endean, Thomas B. D.; Johnson, Jeffrey B. "Decarbonylative Cross Coupling of Phthalimides with Diorganozinc Reagents—Efforts Toward Catalysis", *Polyhedron*. **2016**, *114*, 393. Invited submission for special issue on "Undergraduate Research in Inorganic Chemistry".
- DeGlopper, Kimberly S.; Dennis, Joseph M.; Johnson, Jeffrey B. "Efficient access to 3-substituted- $\gamma$ -hydroxylactams: the uncatalyzed addition of diorganozinc reagents to cyclic imides with heterocyclic substitution" *Tetrahedron Lett.* **2014**, *55*, 1843-1845.
- Dennis, Joseph M.; Calyore, Catherine M.; Sjoholm, Jessica S.; Lutz, J. Patrick; Gair, Joseph G.; Johnson, Jeffrey B.; "Nickel-Catalyzed Direct Addition of Diorganozinc Reagents to Phthalimides: Selective Formation of Gamma-Hydroxylactams" *Synlett*, **2013**, *24*, 2567.
- Bour, James R.; Green, Jacob C.; Winton, Valerie J.; Johnson, Jeffrey B. "Steric and electronic effects influencing  $\beta$ -aryl elimination in the Pd-catalyzed carbon-carbon single bond activation of triarylmethanols." *J. Org. Chem.* **2013**, *78*, 1665.
- Lutz, J. P.; Rathbun, C. M.; Stevenson, S. M.; Powell, B. M.; Boman, T. S.; Baxter, C. E.; Zona, J. M.; Johnson, J. B. "The Rate Limiting Step of the Rh-Catalyzed Carboacylation of Alkenes: C-C Bond Activation or Migratory Insertion?" *J. Am. Chem. Soc.* **2012**, *134*, 715.
- Havlik, Sarah E.; Simmons, Jessica M.; Winton, Valerie J.; Johnson, Jeffrey B. "Nickel-Mediated Decarbonylative Cross-Coupling of Phthalimides with *in situ* Generated Diorganozinc Reagents" *J. Org. Chem.* **2011**, *76*, 3588.
- Rathbun, Colin M.; Johnson, Jeffrey B. "Rhodium-Catalyzed Acylation with Quinolinyl Ketones: Carbon-Carbon Single Bond Activation as the Turnover Limiting Step of Catalysis" *J. Am. Chem. Soc.* **2011**, *133*, 2031.
- Higgins, Thomas B.; Brown, Kenneth L.; Gillmore, Jason G.; Johnson, Jeffrey B.; Peaslee Graham F.; Stanford, Daniel J. "Successful Student Transitions from the Community College to the Four-Year College Facilitated by Undergraduate Research" *Council of Undergraduate Research Quarterly*, **2011**, *31*, 16.

### Supervised Publications

- Casey, Charles P.; Johnson, Jeffrey B.; Jiao, Xiangdong.; Beetner, Sharon E.; Singer, Steven W. "Chain Mechanism for Exchange of D<sub>2</sub> with a Ruthenium Hydride." *Chem. Commun.* **2010**, *46*, 7915.
- Johnson, Jeffrey B.; Cook, Matthew J.; Rovic, Tomislav "Ligand Differentiated Complementary Rh-Catalyst Systems for the Enantioselective Desymmetrization of *meso*-Cyclic Anhydrides." *Tetrahedron* **2009**, *65*, 3202-3210.
- Williams, Catherine M.; Johnson, Jeffrey B.; Rovic, Tomislav "Ni-Catalyzed Reductive Carboxylation of Styrenes Using CO<sub>2</sub>." *J. Am. Chem. Soc.* **2008**, *130*, 14936-14937.
- Johnson, Jeffrey B.; Rovic, Tomislav "Enantioselective Cross-Coupling of Anhydrides with Organozinc Reagents: The Controlled Formation of Carbon-Carbon Bonds through the Nucleophilic Interception of Metalacycles." *Acc. Chem. Res.* **2008**, *41*, 327-338.
- Casey, Charles P.; Beetner, Sharon E.; Johnson, Jeffrey B. "Determination of the Active Catalytic Species via Reaction Modeling and *in situ* IR Spectroscopy During Carbonyl Reduction with Shvo's Hydroxycyclopentadienyl Ruthenium Hydrogenation Catalyst." *J. Am. Chem. Soc.* **2008**, *130*, 2285-2295.
- Johnson, Jeffrey B.; Rovic, Tomislav "More than Bystanders: The Effects of Olefins on Transition Metal Catalyzed Cross-Coupling Reactions." *Angew. Chem. Int. Ed.* **2008**, *47*, 840-871. *Angew. Chem.* **2008**, *120*, 852-884.
- Johnson, Jeffrey B.; Bercot, Eric A.; Williams, Catherine M.; Rovic, Tomislav "Enantioselective Anhydride Desymmetrization with *in situ* Formed Arylzinc Reagents: A Concise Synthesis of Eupomatilones 4, 6, and 7." *Angew. Chem. Int. Ed.* **2007**, *46*, 4514-4518. *Angew. Chem.* **2007**, *119*, 4598-4503.
- Johnson, Jeffrey B.; Bercot, Eric A.; Rowley, John M.; Coates, Geoff W.; Rovic, Tomislav "Ligand Dependent Catalytic Cycle and Role of Styrene in Nickel-Catalyzed Anhydride Cross-Coupling: Evidence for Turnover Limiting Reductive Elimination." *J. Am. Chem. Soc.* **2007**, *129*, 2718-2725.

- Johnson, Jeffrey B.; Yu, Robert, T.; Fink, Paul; Bercot, Eric A.; Rovis, Tomislav "Ligand Dependent Transfer from Mixed Zinc Reagents in Ni-Catalyzed Anhydride Alkylation." *Org. Lett.* **2006**, *8*, 4307-4310.
- Casey, Charles P.; Strotman, Neil A.; Beetner, Sharon E.; Johnson, Jeffrey B.; Priebe, David C.; Vos, Thomas E.; Khodavandi, B.; Guzei, Ilia A. "The PPh<sub>3</sub> Substituted Hydroxycyclopentadienyl Ruthenium Hydride [2,5-Ph<sub>2</sub>-3,4-Tol<sub>2</sub>(η<sup>5</sup>-C<sub>4</sub>COH)]Ru(CO)(PPh<sub>3</sub>)H is a More Efficient Catalyst Hydrogenation of Aldehydes." *Organometallics* **2006**, *25*, 1230-1235.
- Casey, Charles P.; Strotman, Neil A.; Beetner, Sharon E.; Johnson, Jeffrey B.; Priebe, David C.; Guzei, Ilia A. "Slower Stoichiometric and Faster Catalytic Reduction of Aldehydes by [2,5-Ph<sub>2</sub>-3,4-Tol<sub>2</sub>(η<sup>5</sup>-C<sub>4</sub>COH)]Ru(CO)(PPh<sub>3</sub>)H: A Highly Chemoselective Catalyst for Hydrogenation of Aldehydes over Ketones." *Organometallics* **2006**, *25*, 1236-1244.
- Casey, Charles P.; Johnson, Jeffrey B. "Kinetic Isotope Effect Evidence for the Concerted Transfer of Hydride and Proton from Hydroxycyclopentadienyl Ruthenium Hydride in Solvents of Different Polarities and Hydrogen Bonding Ability." *Can. J. Chem.* **2005**, *83*, 1339-1346. *Invited Contribution for a Special Issue on Organic Reaction Mechanisms.*
- Casey, Charles P.; Johnson, Jeffrey B.; Singer, Steven W.; Cui, Qiang "Hydrogen Elimination from a Hydroxycyclopentadienyl Ruthenium(II) Hydride: Study of Hydrogen Activation in a Ligand-Metal Bifunctional Hydrogenation Catalyst." *J. Am. Chem. Soc.* **2005**, *127*, 3100-3109.
- Casey, Charles P.; Johnson, Jeffrey B. "Isomerization and Deuterium Scrambling Evidence for a Change in Rate Limiting Step During Imine Hydrogenation by Shvo's Hydroxycyclopentadienyl Ruthenium Hydride." *J. Am. Chem. Soc.* **2005**, *127*, 1883-1894.
- Casey, Charles P.; Johnson, Jeffrey B. "Kinetic Isotope Effect Evidence for a Concerted Hydrogen Transfer Mechanism in Transfer Hydrogenations Catalyzed by [p-(Me<sub>2</sub>CH)C<sub>6</sub>H<sub>4</sub>Me] Ru(NHCHPhCHPhNSO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>-p-CH<sub>3</sub>)." *J. Org. Chem.* **2003**, *68*, 1998-2001.
- Johnson, Jeffrey B.; Bäckvall, Jan-E. "Mechanism of Ruthenium-Catalyzed Hydrogen Transfer Reactions. Concerted Transfer of OH and CH Hydrogens from an Alcohol to a (Cyclopentadienone)ruthenium Complex." *J. Org. Chem.* **2003**, *68*, 7681-7684.
- Èll, Alida, H.; Johnson, Jeffrey B.; Bäckvall, Jan-E. "Mechanism of Ruthenium-Catalyzed Hydrogen Transfer Reactions. Evidence for a Stepwise Transfer of NH and CH Hydrogens from an Amine to a (Cyclopentadienone)ruthenium Complex." *Chem. Commun.* **2003**, 1652-1653.
- Nelson, Ryan C.; Johnson, Jeffrey B.; Congdon, David J.; Nedrelow, Jonathan H.; O'Brien, Brian A. "Alkali-Metal Phthaloylphosphides: Easily Prepared Phosphide Reagents for Coordination and Main-Group Chemistry." *Organometallics* **2001**, *20*, 1705-1708.
- Guz, Nathan R.; Stermitz, Frank R.; Johnson, Jeffrey B.; Beeson, Teresa D.; Willen, Seth; Hsiang, Jen-Fang; Lewis, Kim. "Flavonolignan and flavone inhibitors of a Staphylococcus aureus multidrug resistance pump: structure-activity relationships." *J. Med. Chem.* **2001**, *44*, 261-268.

## Book Chapter

Johnson, Jeffrey B. "Ring Opening Reactions of Epoxides, Aziridines and Cyclic Anhydrides" *Stereoselective Synthesis*, Vol. 3, P. Andrew Evans, ed. Thieme Chemistry, Stuttgart, Germany. Printed 2011.

## Patent

"Transition Metal-Catalyzed Carbon Dioxide Incorporation with Alkenes" Rovis, Tomislav; Williams, Catherine M.; Johnson, Jeffrey B. U.S. Provisional Patent Application, Filed with the United States Patent & Trademark Office August 7, 2008.

## Invited Presentations

"Investigation of C-C Bond Activation: Mechanistic Understanding Leading to New Methodologies" University of Minnesota, February 22, 2016.

"Investigation of C-C Bond Activation: Mechanistic Understanding Leading to New Methodologies" University of Chicago, October 9, 2015.

- “Rhodium-Catalyzed C-C Single Bond Activation: Using Mechanistic Understanding to Guide Reaction Development” Organic Chemistry Research at PUIs. 6<sup>th</sup> Joint Regional Meeting of the Great Lakes and Central Sections, Grand Rapids, MI, May 28<sup>th</sup>, 2015.
- “Transition metal-catalyzed activation of carbon-carbon single bonds: Mechanistic understanding leading to new methodologies” University of Notre Dame, April 30, 2014.
- “Transition metal-catalyzed activation of carbon-carbon single bonds: Mechanistic understanding leading to new methodologies” Indiana University, April 14, 2014.
- “Transition metal-catalyzed activation of carbon-carbon single bonds: Mechanistic understanding leading to new reactivity” Colorado State University, October 28, 2013.
- “Transition metal-catalyzed activation of carbon-carbon single bonds: Mechanistic understanding leading to new reactivity” Dartmouth College, October 3, 2013.
- “Transition metal-catalyzed C-C single bond activation: Mechanistic understanding and new reactivity” Small Splash, Big Waves: Research at Primarily Undergraduate Institutions, 246<sup>th</sup> National Meeting of the American Chemical Society, Indianapolis, IN, September 8<sup>th</sup>, 2013.
- “Transition metal-catalyzed C-C single bond activation: Mechanistic understanding and new reactivity” ACS-DOC Graduate Research Symposium, University of Delaware, July 25<sup>th</sup>, 2013.
- “Transition metal-catalyzed activation of carbon-carbon single bonds: Mechanistic understanding leading to new methodologies”, Young Academic Investigators Symposium, 244<sup>th</sup> National Meeting of the American Chemical Society, Philadelphia, PA, August 21<sup>st</sup>, 2012.
- “Understanding Carbon-Carbon Bond Activation and Its Use in Transition-Metal Catalyzed Methodology” University of Michigan, May 11<sup>th</sup>, 2012 (Part of “Organic Reactions Mini-Symposium”)
- “Transition Metal-Catalyzed Activation of Carbon-Carbon Single Bonds: From Mechanistic Understanding to New Methodologies” University of Wisconsin-Madison, April 11<sup>th</sup>, 2012.
- “Breaking Carbon-Carbon Single Bonds: Teaching an Old Bond New Tricks” Gustavus Adolphus College, March 23<sup>rd</sup>, 2012.
- “Carbon-Carbon Single Bond Activation: Probing the Mechanism of an Unusual Reaction” Valparaiso University, March 18<sup>th</sup>, 2011.
- “Carbon-Carbon Single Bond Activation: Probing the Mechanism of an Unusual Reaction” Oakland University, March 16<sup>th</sup>, 2011.
- “Carbon-Carbon Single Bond Activation: We can do *what?* To *which* bonds?” St. Olaf College, March 25<sup>th</sup>, 2010.
- “Carbon-Carbon Single Bond Activation: Does that really work?” Calvin College, October 15<sup>th</sup>, 2009.
- “Carbon-Carbon Single Bond Activation: We can do *what?* To *which* bonds?” Hope College, September 5<sup>th</sup>, 2008.
- “Catalytic Enantioselective Desymmetrization of *meso* Cyclic Carboxylic Anhydrides.” Gustavus Adolphus College, November 11<sup>th</sup>, 2005.

### **Contributed Presentations – National Meetings (*undergraduate coauthors are underlined*)**

- Johnson, Jeffrey B. “Transition metal-catalyzed C-C single bond activation: Mechanistic understanding and new reactivity” Small Splash, Big Waves: Research at Primarily Undergraduate Institutions, 246<sup>th</sup> National Meeting of the American Chemical Society, Indianapolis, IN, September 8<sup>th</sup>, 2013.
- Johnson, Jeffrey B. “Transition metal-catalyzed activation of carbon-carbon single bonds: Mechanistic understanding leading to new methodologies” Young Academic Investigators Symposium 244<sup>th</sup> ACS National Meeting, Philadelphia, PA, United States, August 21, 2012.
- Johnson, Jeffrey B. “Understanding the Mechanisms of Carbon-Carbon Bond Activation within Transition-Metal Catalyzed Methodology” Organometallic Gordon Research Conference, Newport, RI, July 12, 2012.
- Endean, Thomas B. D.; Simmons, Jessica M.; Winton, Valerie J.; Johnson, Jeffrey B. “Nickel-Mediated Decarbonylative Coupling of Imides with Organozinc Reagents” 42<sup>nd</sup> National Organic Symposium, Princeton, NJ, United States, June 6-10, 2011.

- Lutz, J. Patrick; Rathbun, C. M.; Stevenson, Susan M.; Johnson, Jeffrey B. "Rhodium-Catalyzed Carbon-Carbon Bond Activation: Mechanistic Investigation and Reaction Development" 42<sup>nd</sup> National Organic Symposium, Princeton, NJ, United States, June 6-10, 2011.
- Johnson, Jeffrey B.; Rathbun, Colin M.; Stevenson, Susan M.; Lutz, J. Patrick; Boman, Timothy S. "Mechanistic Insights into a Rhodium-Catalyzed Carbon-Carbon Single Bond Activation" 241<sup>st</sup> ACS National Meeting, Anaheim, CA, March 27-31, 2011.
- Winton, Valerie J.; Simmons, Jessica M.; Havlik, Sarah E.; Johnson, Jeffrey B. "Nickel-Mediated Decarbonylative Cross-Coupling of Phthalimides with Diorganozinc Reagents" 241<sup>st</sup> ACS National Meeting, Anaheim, CA, March 27-31, 2011.
- Todd, David P.; Johnson, Jeffrey B. "Origin of diastereoselectivity in a Gilman addition to an  $\alpha,\beta$ -unsaturated ester" 239<sup>th</sup> ACS National Meeting, San Francisco, CA, March 7-11, 2010.
- Boman, Timothy S.; Johnson, Jeffrey B. "Mechanistic investigation of rhodium(I)-catalyzed carbon-carbon single bond activation in quinoliny ketones" 239<sup>th</sup> ACS National Meeting, San Francisco, CA, March 7-11, 2010.
- Winton, Valerie J.; Johnson, Jeffrey B. "Mechanistic Investigation of Palladium-Catalyzed Carbon-Carbon Single Bond Activation in Triaryl Methanols" 239<sup>th</sup> ACS National Meeting, San Francisco, CA, March 7-11, 2010.
- Johnson, Jeffrey B.; Parrish, Jonathan D.; Wotal, Alexander C. "Mechanistic Investigation of Rhodium-Catalyzed C-C Bond Activation." 41<sup>st</sup> National Organic Symposium, Boulder, CO, United States, June 7-11, 2009.
- Williams, Catherine M.; Johnson, Jeffrey B.; Rovic, Tomislav "Nickel-Catalyzed Reductive Carbonylation of Styrenes Using Carbon Dioxide." 41<sup>st</sup> National Organic Symposium, Boulder, CO, United States, June 7-11, 2009.
- Winton, Valerie J.; Johnson, Jeffrey B. "Investigation of Pd-Catalyzed C-C Bond Activation of Tertiary Alcohols." 41<sup>st</sup> National Organic Symposium, Boulder, CO, United States, June 7-11, 2009.
- Johnson, Jeffrey B.; Winton, Valerie J. "Mechanistic Studies on the Activation of a Carbon-Carbon Single Bond Via Palladium-Catalyzed  $\beta$ -Alkyl Elimination." 2008 Annual AIChE Meeting, Philadelphia, PA, November 16-21, 2008.
- Beetner, Sharon E.; Casey, Charles P.; Johnson, Jeffrey B. "Determination of the Active Catalyst Species via Reaction Modeling and *in situ* IR Spectroscopy during Carbonyl Reduction with Shvo's Hydroxycyclopentadienyl Ruthenium Hydride Catalyst." 233<sup>rd</sup> ACS National Meeting, Chicago, IL, United States, March 25-29, 2007.
- Johnson, Jeffrey B.; Rovic, Tomislav "Rate Limiting Reductive Elimination and Variable Olefin Effects in Nickel-Catalyzed Anhydride Alkylation." 232<sup>nd</sup> ACS National Meeting, San Francisco, CA, United States, September 10-14, 2006.
- Johnson, Jeffrey B. "Mechanistic Elucidation and its Role in the Development of Organic Methodology." 232<sup>nd</sup> ACS National Meeting, San Francisco, CA, United States, September 10-14, 2006.
- Johnson, Jeffrey B.; Casey, Charles P. "Determination of the Active Catalytic Species During Aldehyde Hydrogenation via *in situ* IR Spectroscopy and Reaction Modeling." 39<sup>th</sup> National Organic Symposium, Salt Lake City, UT, United States, June 12-16, 2005.
- Casey, Charles P.; Johnson, Jeffrey B.; Bikzhanova, Galina A.; Singer, Steven W. "New Hydrogenation Catalysts and New Mechanisms for Hydrogenation." 228<sup>th</sup> ACS National Meeting, San Diego, CA, United States, March 13-17, 2005.
- Casey, Charles P.; Johnson, Jeffrey B.; Singer, Steven W. "Heterolytic Cleavage of Hydrogen by Shvo's Hydroxycyclopentadienyl Ru(II) Catalyst." Abstracts of Papers, 227<sup>th</sup> ACS National Meeting, Anaheim, CA, United States, March 27-April 1, 2004.
- Casey, Charles P.; Priebe, David; Johnson, Jeffrey B. "Increased Activity of Phosphine Substituted Hydroxycyclopentadienyl Ru(II) Catalysts." Abstracts of Papers, 227<sup>th</sup> ACS National Meeting, Anaheim, CA, United States, March 27-April 1, 2004.
- Casey, Charles P.; Vos, Thomas E.; Bikzhanova, Galina, A.; Johnson, Jeffrey B.; Priebe, David C.; Singer, Steven. "New Hydrogenation Catalysts for Polar Molecules." Abstracts, 58<sup>th</sup> Northwest regional Meeting of the American Chemical Society, Bozeman, MT, United States, June 12-14, 2003.
- Casey, Charles P.; Vos, Thomas E.; Bikzhanova, Galina A.; Singer, Steven W.; Johnson, Jeffrey B. "New Hydrogenation Catalysts for Polar Molecules." Abstracts of Papers, 225<sup>th</sup> ACS National Meeting, New Orleans, LA, United States, March 23-27, 2003.



Casey, Charles P.; Johnson, Jeffrey B. "Experimental Evidence for Concerted Hydride and Proton Transfer in Noyori's *p*-cymene-Ru(II)-TsDPEN catalyst." Abstracts of Papers, 224th ACS National Meeting, Boston, MA, United States, August 18-22, 2002.

O'Brien, Brian A.; Sass, Philip A.; Johnson, Jeffrey B.; Nelson, Ryan C. "Synthesis of Primary Alkylphosphines by a Phospha-Gabriel Route." Abstracts of Papers, 222nd ACS National Meeting, Chicago, IL, United States, August 26-30, 2001.

O'Brien, Brian A.; Nelson, Ryan C.; Johnson, Jeffrey B. "Cesium and Potassium Phthaloylphosphanides" Abstracts of Papers, 219th ACS National Meeting, San Francisco, CA, March 26-30, 2000.

Johnson, Jeffrey B.; O'Brien, Brian A. "Preparation and Reactions of Bis(trifluoromethyl)phosphine and Perfluoro-2-phosphapropene." 42nd Annual ACS Minnesota Undergraduate Research Symposium, Northfield, MN April 1999.

## Other Activities

Treasurer of the Hamilton (MI) School District Parent Oversight Board (2016 – present)

Mentor and Advisory Board Member for *Total Trek Quest*, an after school wellness program for 3-5<sup>th</sup> grade boys (2008 – 2015)

Participant in the 1998 Winter Olympic Trials for curling

Two-time Junior Men's Curling National Championship participant  
- five time North Dakota State Champion

Member of the Red Cross '9 Gallon Club' for blood donations