

Jeffrey B. Johnson

Department of Chemistry
Hope College
Holland, MI 49422
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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:
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| <i>Journal of the American Chemical Society</i> | Jan 2006 – Present |
| <i>Chemical Society Reviews</i> | Dec 2007 – Present |
| <i>Chemical Communications</i> | Nov 2008 – Present |
| <i>Journal of Organometallic Chemistry</i> | Jan 2009 – Present |
| <i>Tetrahedron Letters</i> | May 2009 – Present |
| <i>Organic and Biomolecular Chemistry</i> | June 2009 – Present |
| <i>Nature: Chemistry</i> | July 2009 – Present |
| <i>Organometallics</i> | April 2011 – Present |
| <i>Synthesis</i> | July 2011 – Present |
| <i>Organic Letters</i> | Feb 2012 – Present |

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

Gustavus Adolphus College with Prof. Brian A. O'Brien Feb 1998 – May 2000
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

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
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)
Hope College Academic Affairs Board	2014-present
Hope College Curriculum Committee (chair)	2014-present
Hope College Strategic Planning Subcommittee	2014
Health Professions Advisory Committee	2010-present
Hope College Chemistry Department Safety Committee	2012-present
Advisor, Hope College Chemistry Club/ACS Student Affiliates Chapter	2008-present
Hope College Judicial Board	2009-2013

Research Mentor

To date, 58 students have participated in research within the Johnson Lab, accounting for a cumulative 155 semesters/summer of active research.

Students include: 48 Hope College Undergraduates

- 9 underrepresented minority students
- 7 external students (primarily through REU program)
- 6 high school students (primarily through REACH program)

Of the 39 college graduates to date:

- 18 enrolled in graduate school for chemistry (1 PhD, 1 MA to date) – at MIT, Princeton, UC-Irvine (2), Wisconsin (3), Michigan (3), Duke, North Carolina (2), Colorado State, Rochester, Georgia, Chicago
- 6 enrolled in medical school – at Michigan (2), Michigan State, Wayne State, Minnesota, Kirksville
- 3 enrolled in dental school – at Michigan (3)
- 3 enrolled in graduate school for education – Teach for America, Teach Kentucky, Notre Dame
- 6 are currently employed in the chemical industry

Students have combined to give 224 research presentations, including 57 at regional meetings and 33 at national conferences.

Notable External Awards Received by Undergraduate Research Students

NSF Predoctoral Fellowship (6 in total)

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 (1 Scholar, 4 Honorable Mention)

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)

Honors and Awards

Research Corporation Cottrell Scholar, 2015

Inaugural Hope College Schaap Research Fellow, Hope College, 2013 – 2018 (renewable)

NSF Faculty Early CAREER Development Award, 2012-2017

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

Guild of Saint Ansgar (GAC), inducted 2000

Phi Beta Kappa, inducted 1999

Barry M. Goldwater Scholar, 1999 – 2000

Sigma Xi, inducted 1999

National Merit Scholar, 1996 – 2000

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 241st 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 41st 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 α,β -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*)

- DeGlopper, Kimberly S.; Dennis, Joseph M.; Johnson, Jeffrey B. "Efficient access to 3-substituted- γ -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 β -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.; Jaio, Xiandong.; Beetner, Sharon E.; Singer, Steven W. "Chain Mechanism for Exchange of D₂ 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 CO₂." *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.; Rovic, 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 PPh₃ Substituted Hydroxycyclopentadienyl Ruthenium Hydride [2,5-Ph₂-3,4-Tol₂(η^5 -C₄COH)]Ru(CO)(PPh₃)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-Ph₂-3,4-Tol₂(η^5 -

C_4COH]Ru(CO)(PPh₃)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*-(Me₂CH)C₆H₄Me] Ru(NHCHPhCHPhNSO₂C₆H₄-*p*-CH₃)." *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.

Éll, 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.

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, 246th National Meeting of the American Chemical Society, Indianapolis, IN, September 8th, 2013.

Johnson, Jeffrey B. "Transition metal-catalyzed activation of carbon-carbon single bonds: Mechanistic understanding leading to new methodologies" Young Academic Investigators Symposium 244th 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" 42nd 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" 42nd 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" 241st 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" 241st ACS National Meeting, Anaheim, CA, March 27-31, 2011.
- Todd, David P.; Johnson, Jeffrey B. "Origin of diastereoselectivity in a Gilman addition to an α,β -unsaturated ester" 239th 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" 239th 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" 239th 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." 41st 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." 41st 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." 41st 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 β -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." 233rd 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." 232nd 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." 232nd 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." 39th 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." 228th 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, 227th 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, 227th 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, 58th 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, 225th 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.

Invited Presentations

"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, 246th National Meeting of the American Chemical Society, Indianapolis, IN, September 8th, 2013.

"Transition metal-catalyzed C-C single bond activation: Mechanistic understanding and new reactivity" ACS-DOC Graduate Research Symposium, University of Delaware, July 25th, 2013.

"Transition metal-catalyzed activation of carbon-carbon single bonds: Mechanistic understanding leading to new methodologies", Young Academic Investigators Symposium, 244th National Meeting of the American Chemical Society, Philadelphia, PA, August 21st, 2012.

"Understanding Carbon-Carbon Bond Activation and Its Use in Transition-Metal Catalyzed Methodology" University of Michigan, May 11th, 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 11th, 2012.

"Breaking Carbon-Carbon Single Bonds: Teaching an Old Bond New Tricks" Gustavus Adolphus College, March 23rd, 2012.

"Carbon-Carbon Single Bond Activation: Probing the Mechanism of an Unusual Reaction" Valparaiso University, March 18th, 2011.

"Carbon-Carbon Single Bond Activation: Probing the Mechanism of an Unusual Reaction" Oakland University, March 16th, 2011.

"Carbon-Carbon Single Bond Activation: We can do *what?* To *which* bonds?" St. Olaf College, March 25th, 2010.

"Carbon-Carbon Single Bond Activation: Does that really work?" Calvin College, October 15th, 2009.

"Carbon-Carbon Single Bond Activation: We can do *what?* To *which* bonds?" Hope College, September 5th, 2008.

"Catalytic Enantioselective Desymmetrization of *meso* Cyclic Carboxylic Anhydrides." Gustavus Adolphus College, November 11th, 2005.

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.

Other Activities

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

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 '7 Gallon Club' for blood donations