Jeffery A. Byers

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Education

2001-2007 Doctor of Philosophy, Chemistry
California Institute of Technology, Pasadena, CA
Thesis Title: "Synthetic and mechanistic studies into the kinetic resolution of α-olefins using C_1- and C_2- symmetric zirconocene polymerization catalysts"
Advisor: Prof. John E. Bercaw

1996-2000 Bachelors of Arts in Chemistry, minor in English (Summa Cum Laude)
Washington University in St. Louis

Research Experience

2022- present Professor of Chemistry
Boston College

2017-2022 Associate Professor of Chemistry
Boston College

2011-2017 Assistant Professor of Chemistry
Boston College

Fundamental and applied organometallic chemistry with applications that vary from catalytic applications relevant to the pharmaceutical industry to catalyst development for the production of useful and green polymer materials to catalytic applications relevant to renewable energy sources (currently mentoring 7 graduate students and 2 undergraduate student).

2007-2011 Postdoctoral Fellow
Massachusetts Institute of Technology
with Prof. Timothy F. Jamison

Carried out mechanistic studies into the epoxide opening cascade reactions directed towards the synthesis of ladder polyether natural products. Developed novel nickel-catalyzed reductive coupling between alkynes and epoxides for the construction of homoallylic epoxides.

2001-2007 Graduate Research
California Institute of Technology
with Prof. John E. Bercaw

Probed the origin of stereocontrol during the kinetic resolution of racemic α-olefins by polymerization catalyzed by C_1-symmetric zirconocenes. Synthesized enantiopure C_2-symmetric zirconocenes and applied them towards the kinetic resolution of racemic α-olefins by polymerization.

2000-2001 Research Scientist
Stereotaxis Inc.
www.stereotaxis.com

Designed a magnetic embolic intended for the intravenous treatment of brain aneurysms.

1998-2000 Undergraduate Research
Washington University in St. Louis
with Prof. Karen L. Wooley and Prof. Raymond E. Arvidson

Synthesized and carried out material properties testing on linear polycarbonates for comparison with structurally isomeric hyperbranched polycarbonates. (Prof. Karen L. Wooley) Determined the hydrochemistry and hydrology of a culturally significant lake in Hawaii in order to elucidate the sensitivity of the lake to environmental change. (Prof. Raymond E. Arvidson)

1998 Lunar Planetary Institute Intern
Johnson Space Center (NASA)
with Richard Morris

Spectroscopically analyzed terrestrial rocks with iron-oxide coatings as Mars rock analogs.

Teaching Experience

2011-present *Boston College*

Professor for *Honors Modern Chemistry II* (CHEM 1118), the second semester of a two-year long program designed to introduce talented STEM students to concepts in general, organic, and biochemistry. This semester of the program introduces students to concepts in bonding, structure, and reactivity in organic chemistry (SP2017, SP2018).

Professor for *Introduction to Inorganic Chemistry* (CHEM 2222), an introductory course for undergraduate students (SP2013, SP2014).

Professor for *Organic Chemistry II* (CHEM 2232), the second semester of a year-long introductory course for undergraduate students (SP2015, SP2021).

Professor for *Honors Organic Chemistry I* (CHEM 2241), the third semester of a two-year long program designed to introduce talented STEM students to concepts in general, organic, and biochemistry. This semester of the program introduces students to concepts in organic chemical synthesis (FL2016, FL2017, FL2019 (*joint with Prof. Shih-Yuan Liu*), FL2021 (*joint with Prof. Shih-Yuan Liu*).

Professor for *Honors Organic Chemistry Lab* (CHEM 2247), an introductory lab course in techniques in organic chemistry for advanced students (FL2015, FL2020).

Professor for *Mechanistic Organic Chemistry* (CHEM 5537), a course for incoming graduate students designed to introduce students to organic reaction mechanism (FL2011, FL2012, FL2013, FL2014).

Professor for *Organometallic Chemistry* (CHEM 5523), a course for advanced graduate students designed to introduce students to the chemistry of the transition metals (SP2019 (*joint with Prof. Peter Zhang*)).

Professor for *Scientific Communication in Science I* (CHEM 6611), the first semester of a two-semester course designed to teach graduate students about communication skills relevant for the success of modern scientists. Topics include scientific writing, scientific presentations, and social responsibilities of scientists (FL2018 (*joint with Prof. Matthias Waegele),* FL2019 (*joint with Prof. Marc Snapper*), FL2020).

2001-2006 *California Institute of Technology*

Served as teaching assistant for undergraduate courses in *General Chemistry* (twice) and *General Chemistry Laboratory* (three times) as well as graduate level courses in *Organometallic Chemistry* (three times) and *Inorganic Chemistry* (twice). Designed problem sets and exams and lectured while serving as the head teaching assistant for both Inorganic Chemistry and Organometallic Chemistry.

Fall 1999 *Washington University in St. Louis*

Served as teaching assistant for *Organic Chemistry Lab*, a course for undergraduates.

Honors, Appointments, and Professional Societies

Member of Materials Research Society	2021-present
Member of Sigma Xi Scientific Research Honor Society	2019-present
Invited to Journal of Physical Chemistry Young Scientist Special Issue	2018
American Chemical Society PMSE Young Investigator Award	2017
Research Corporation Cottrell Scholar	2015
National Science Foundation CAREER award	2015
Invited to Chemical Communications Emerging Investigator Issue	2015
Invited to Dalton Transactions Young American Talent Issue	2015
Invited to Inorganic Chemistry Frontiers Emerging Investigator Issue	2015
Invited to Journal of Coordination Chemistry Emerging Leaders Issue	2015
Vice-Chair Organometallics Gordon Research Seminar	2012
Member of the American Chemical Society	2000-present
Member of the Phi Beta Kappa National Honors Society	2000
Member of the Golden Key National Honors Society	2000
Recipient of Sigma Xi Research Fellowship	1999
Pfizer Summer Undergraduate Research Fellowship	1998
Waldo Semon Undergraduate Research Award	1998
Lunar Planetary Institute Intern	1998
Recipient of a Target™ National Scholarship	1996
Recipient of a White Sands Missile Range Community Scholarship	1996
Recipient of a Society of American Military Engineers Scholarship	1996

Competitive Grants, Secured and Active

2022 Boston College Research Incentive Grant – "Upcycling of Plastic Waste Using Organometallic Catalysis", $15,000 over one year, PI.

2021 National Science Foundation, Major Research Instrument – (CHE-2117246) "MRI: Acquisition of a Cyroprobe-Enabled NMR Spectrometer for Enhanced Efficiency and Sensitivity in Chemical and Biological Research", $542,820 over 3 years, co-PI.

2021 National Institutes of Health S10 – (1S10OD026910-01A1) "CryoProbe-enabled Bruker AVANCE NEO 500 MHz NMR Spectrometer", $999,500 over 2 years, co-PI.

2020 National Science Foundation (CHE-1955926) – "Application of Redox-Switchable Polymerization for the Synthesis of Advanced Polymeric Materials", $400,000 over 3 years, PI.

2020 National Science Foundation, Center for Chemical Innovations (CHE-2023955) – "CCI Phase I: NSF Center for Integrated Catalysis (CIC)", $1,800,000 over 3 years, co-PI.

2018 Department of Energy, Basic Energy Science (BES), Catalysis Science (DE-SC0019055) – "Organometallic Catalysis from Molecular Catalysts Non-Covalently Confined in Metal-Organic Frameworks", $650,000 over 3 years, PI.

Competitive Grants, Secured and Completed

2019 Petroleum Research Fund, New Directions, American Chemical Society – (59542-ND1) "Iron-Based Catalysts for Suzuki-Miyaura Cross Coupling and C-H Functionalization Reactions", $110,000 over 2 years, PI.2018 Beckman Institute, Beckman Scholars Program (Co-PI), $156,000 over three years, co-PI.

2017 American Chemical Society, Green Chemistry Institute Pharmaceutical Roundtable Ignition Grant Program – "Development of an Iron-Based Catalyst for Suzuki-Miyaura Cross Coupling Reactions", $25,000 over 6 months, PI.

2017 Boston College, Research Incentive Grant – "New Methods to Convert an Inexpensive Feedstock Into Molecules Important for the Production of New Biodegradable Plastics and Biologically Active Molecules", $15,000 over 1 year, PI.

2015 Army Research Office Basic and Applied Scientific Research Grant (66672-CH (W911NF-15-1-0454)) – "Redox-Switchable Polymerization for the Synthesis of High Performance Polymers", $375,000 over 3 years (no cost extension October 2021), PI.

2015 National Science Foundation, CAREER (CHE-1454807) – "Iron Polymerization Catalysis for the Production of High Performance Degradable Polymers", $654,979 over 5 years (no cost extension to May 2021), PI.

2015 Cottrell Scholar Award – "Redox Switchable Iron Catalysts for the Synthesis of Biodegradable Polymers", $75,000 over 3 years, PI.

2015 Research Corporation, Cottrell Scholar Collaborative – "National Collegiate Scholastic Association, a Cottrell Scholars Collaborative (NCSA-CSC)", $25,000 over 2 years, PI.

2013 Boston College Teaching, Advising, and Mentoring Grant – "Paper to Plastics: A Multidisciplinary STEM Research Project Targeting Women and Underrepresented Minorities", $12,500, PI.

2013 American Chemical Society, Petroleum Research Fund – "Redox Robust Non-Noble Metal Catalysis", $100,000 over 2 years, PI.

2013 National Science Foundation, Major Research Instrument – "MRI: Acquisition of SQUID Magnetometer for the Exploration of the Next Generation of Materials and the Study of Complex Spin Phenomena", $491,796 over 2 years, co-PI.

2012 Boston College Research Incentive Grant – "Synthesis of Poly(ethylene-co-lactic acid), a Tunable Biodegradable Polymer", $15,000 over 1 year, PI.

Publications

38. Wong, Alexander S.; Zhang, Bufan; Li, Bo; Neidig, Michael L.; Byers, Jeffery A.* "Air-Stable Iron-Based Precatalysts for Suzuki–Miyaura Cross-Coupling Reactions between Alkyl Halides and Aryl Boronic Esters", *Organic Process Research, and Development*, **2021**, 25, 11, 2461-2472, DOI:10.1021/acs.oprd.1c00235.

37. Qi, Miao; Zhang, Haochuan; Dong, Qi; Li, Jingyi; Musgrave, Rebecca; Zhao, Yanyan; Dulock, Nicholas; Wang, Dunwei*; Byers, Jeffery A.* "Electrochemically Switchable Polymerization from Surface-Anchored Molecular Catalysts", *Chemical Science*, **2021**, 12, 9042-9052, DOI:10.1039/DISC02163J.

36. Rayder, Thomas M.; Bensalah, Adam T.; Li, Banruo; Byers, Jeffery A.*, Tsung, Chia-Kuang* "Engineering Second Sphere Interactions in a Host-Guest Multicomponent Catalyst System for the Hydrogenation of Carbon Dioxide to Methanol" *Journal of the American Chemical Society,* **2021**, 143, 3, 1630-1640, DOI:10.1021/jacs.0c08957.

35. Tyrol, Chet C.; Yone, Nang; Gallin, Connor F.; Byers, Jeffery A.* "Synthesizing Enantiomerically Enriched 1,1-Diarylalkanes Using a Suzuki-Miyaura Reaction Catalyzed by an Iron-Based Complex" *Chemical Communications*, **2020**, 56, 14661-14664. DOI:10.1039/D0CC05003B *(ChemRxiv, DOI:* 10.26434/chem rxiv.12582284.v1).

34. Rayder, Thomas R.; Adillon, Enric; Byers, Jeffery A.*; Tsung, Chia-Kuang* "A Bioinspired Multicomponent System to Convert Carbon Dioxide to Methanol Autocatalytically" *Chem*, **2020**, 6(7), 1742-1754. DOI: 10.1016/j.chempr.2020.04.008.

33. Crockett, Michael P.; Wong, Alexander S.; Li, Bo; Byers, Jeffery A.* "Rational Design of an Iron-Based Catalyst for Suzuki-Miyaura Cross-Couplings Involving Heteroaromatic Boronic Esters and Tertiary Alkyl Electrophiles" *Angewandte Chemie, International Edition*, **2020**, 59(13), 5392-5397*,* DOI:10.1002/anie.201913415.

32. Crockett, Michael J.; Zhang, Hongtu; Thomas, Christine M.; Byers, Jeffery A.* "Adding Diffusion Ordered NMR Spectroscopy (DOSY) to the Arsenal for Characterizing Paramagnetic Complexes", *Chemical Communications*, **2019**, 55, 14426-14429*,* DOI: 10.1039/C9CC08229H.

31. Crockett, Michael P.; Tyrol, Chet C.; Wong, Alexander S.; Byers, Jeffery A.* "Iron-Catalyzed Suzuki-Miyaura Cross-Coupling Between Alkyl Halides and Unactivated Arylboronic Esters" *Organic Letters*, **2018**, 20(17), 5233-5237, DOI:10.1021/acs.orglett.8b02184.

30. Li, Zhehui; Rayder, Thomas R.; Luo, Lianshun; Byers, Jeffery A.*; Tsung, Chia-Kuang* "Aperture-Opening Encapsulation of a Transition Metal Catalyst in a Metal-Organic Framework for CO_2 Hydrogenation", *Journal of the American Chemical Society*, **2018**, 140(26), 8082-8085*,* DOI: 10.1021/jacs.8b04047.

29. Qi, Miao; Dong, Qi; Wang, Dunwei; Byers, Jeffery A.* "Electrochemically Switchable Ring-Opening Polymerization of Lactide and Cyclohexene Oxide", *Journal of the American Chemical Society*, **2018**, 140(17), 5686-5690, DOI:10.1021/jacs.8b02171.

28. Ortuño, Manuel A.; Dereli, Büsra; Delle Chiaie, Kayla R.; Biernesser, Ashley B.; Qi, Miao; Byers, Jeffery A.; Cramer, Christopher J.* "The Role of Alkoxide Initiator, Spin State, and Oxidation State in Ring Opening Polymerization of ε-Caprolactone Catalyzed by Iron

Complexes", *Inorganic Chemistry*, **2018**, 57(4), 2064-2071, DOI:10.1021/acs.inorgchem. 7b02964.

27. Byers, Jeffery A.*; Biernesser, Ashley B.; Delle Chiaie, Kayla R.; Kaur, Aman; Kehl, Jeffrey A.; "Catalytic Systems for the Production of Poly(lactic acid)", *Synthesis, Structure and Properties of Poly(lactic acid) (Ed: Di Lorenzo, Maria Laura; Androsch, Rene),* Advances in Polymer Science, Vol. 279, Springer: Germany, **2018**, Ch. 2, p. 350, DOI: 10.1007/978-3-319-64230-7 (***Invited Contribution***).

26. Delle Chiaie, Kayla R.; Biernesser, Ashley B.; Ortuño, Manuel A.; Derili, B.; Iovan, Diana A.; Wilding, Matthew J. T.; Li, B.; Cramer, Christopher J.; Byers, Jeffery A.* "The Role of Ligand Redox Non-Innocence in Ring-Opening Polymerization Reactions Catalysed by Bis(imino)pyridine Iron Alkoxide Complexes", *Dalton Transactions,* **2017**, 46, 12971-12980, DOI: 10.1039/C7DT03067C.

25. Byers, Jeffery A.*; Weerapana, Eranthie; Chatterjee, Abhishek; "Establishing an Interdisciplinary Outreach Program at the Interface of Biology, Chemistry, and Materials Science", *Educational and Outreach Projects from the Cottrell Scholars Collaborative Professional Development and Outreach Volume 2 (Ed: Waterman, Rory and Feig, Andrew)*, ACS Symposium Series, Vol. 1259, ACS: Washington DC, **2017**, Ch. 5, p. 51-68, DOI: 10.1021/bk-2017-1259.ch005. (***Invited Contribution***).

24. Baker, Tessa M.; Mako, Teresa M.; Vasilopolos, Aristidis; Li, Bo; Byers, Jeffery A.*; Neidig, Michael L.* "Magnetic Circular Dichroism and Density Functional Theory Studies of Iron(II)-Pincer Complexes: Insight into Electronic Structure and Bonding Effects of Pincer Ligands Containing N-Heterocyclic Carbene Moieties" *Organometallics*, **2016**, *35 (21), 3692–3700*, DOI: 10.1021/acs.organomet.6b00651.

23. Delle Chiaie, Kayla; Yablon, Lauren L.; Biernesser, Ashley B.; Michalowski, Gregory R.; Sudyn, Alexander W.; Byers, Jeffery A.* "Redox-Triggered Crosslinking Reactions" *Polymer Chemistry,* **2016**, 7, 4675-4681, DOI: 10.1039/C6PY00975A.

22. Kaplan, Hilan Z.; Mako, Teresa M.; Wilding, Matthew J. T.; Li, Bo; Byers, Jeffery A.* "Electron donating capabilities and evidence for redox activity in low oxidation state iron complexes bearing bis(amidine)pyrimidylidene ligands" *Journal of Coordination Chemistry*, **2016**, 69(11-13), 2047-2058, DOI: 10.1080/00958972.2016.1176158 ***(Invited Paper)***.

21. Biernesser, Ashley B.; Delle Chiaie, Kayla; Curley, Julia B.; Byers, Jeffery A.* "Block Copolymerization of Epoxides with Lactide Facilitated by Redox Switchable Iron Polymerization Catalysis" *Angewandte Chemie, International Edition,* **2016**, 55, 5251-5254, DOI: 10.1002/anie.201511793.

20. Mako, Teresa M.; Byers, Jeffery A.* "Recent Advances in Iron-Catalysed Cross Coupling Reactions and Their Mechanistic Underpinning" *Inorganic Chemistry Frontiers*, **2016**, 3, 766-790. DOI: 10.1039/C5QI00295H (***Invited Paper***).

19. Manna, Cesar M.; Kaur, Aman; Yablon, Lauren; Haeffner, Fredrick; Li, Bo; Byers, Jeffery A.* "Stereoselective catalysis achieved through *in situ* desymmetrization of an achiral iron catalyst precursor" *Journal of the American Chemical Society*, **2015**, 137(45), 14232-14235, DOI: 10.1021/jacs.5b09966.

18. Drake, Jessica L.; Kaplan, Hilan Z.; Wilding, Matthew J. T.; Li, Bo, and Byers, Jeffery A.* "Spin Transitions in Bis(amidinato)-N-Heterocyclic Carbene Iron(II) and Iron(III) Complexes" *Dalton Transactions*, **2015**, 44, 16703-16707, DOI: 10.1039/C5DT02440D.

17. Morabito, Joseph; Chou, Lien-Yang; Li, Zhehui; Manna, Cesar M.; Petroff, Christopher A.; Kyada, Rutvin, Byers, Jeffery A.*; Tsung, Chia-Kuang* "Molecular Encapsulation Beyond the Aperture Size Limit Through Dissociative Linker Exchange in Metal-Organic Framework Crystals" *Journal of the American Chemical Society*, **2014**, 136(36), 12540-12543, DOI: 10.1021/ja5054779.

16. Manna, Cesar M.; Kaplan, Hilan Z.; Byers, Jeffery A.* "High Molecular Weight Poly(Lactic Acid) Produced by An Efficient Iron Catalyst Bearing a Bis(amidinato)-N-Heterocyclic Carbene Ligand" *Polyhedron*, **2014**, 84, 160-167, DOI:10.1016/j.poly.2014.07.002. (***Invited Paper***)

15. Tamburini, Fiona; Kelly, Thomas; Weerapana, Eranthie,* Byers, Jeffery A.* "Paper to Plastics: An Interdisciplinary Summer Outreach Project in Sustainability" *Journal of Chemical Education*, **2014**, 91, 10, 1574-1579. DOI: 10.1021/ed400892t.

14. Drake, Jessica L.; Manna, Cesar M.; Li, Bo; Byers, Jeffery A.* "Enhanced Carbon Dioxide Hydrogenation Facilitated by Catalytic Quantities of Bicarbonate and Other Inorganic Salts" *Organometallics,* **2013**, 32(23), 6891-6894*,* DOI: 10.1021/om401057p.

13. Biernesser, Ashley B.; Li, Bo; Byers, Jeffery A.* "The redox controllable polymerization of lactide catalyzed by bis(imino)pyridine iron bis-alkoxide complexes" *Journal of the American Chemical Society*, **2013**, 135(44), 16553-16560*,* DOI: 10.1021/ja407920d.

12. Byers, Jeffery A.*; Jamison, Timothy F.* "Entropic Factors Provide Unusual Reactivity and Selectivity in Water-Promoted Epoxide-Opening Reactions" *Proceedings of the National Academy of Science*, **2013**, 110(42), 16724-16729. DOI: 10.1073/pnas.1311133110.

11. Kaplan, Hilan Z.; Li, Bo; Byers, Jeffery A.* "Synthesis and Characterization of a Bis(imino)−N-heterocyclic Carbene Analogue to Bis(imino)pyridine Iron Complexes" *Organometallics*, **2012**, 31, 7343-7350. DOI: 10.1021/om300885d.

10. Morten, Christopher J.; Byers, Jeffery A.; Jamison, Timothy F. "Evidence That Epoxide-Opening Cascades Promoted by Water Are Stepwise and Become Faster and More Selective After the First Cyclization" *Journal of the American Chemical Society,* **2011**, *133*, 6, 1902-1908. DOI: 10.1021/ja1088748.

9. Morten, Christopher J.; Byers, Jeffery A.; Van Dyke, Aaron R.; Vilotijevic, Ivan; Jamison, Timothy F. "The development of *endo*-selective epoxide-opening cascades in water" *Chemical Society Reviews*, **2009**, 38, 11, 3175-3192. DOI: 10.1039/b816697h.

8. Byers, Jeffery A.; Jamison, Timothy, F. "On the Synergism Between H_2O and a Tetrahydro-pyran Template in the Regioselective Cyclization of an Epoxy Alcohol" *Journal of the American Chemical Society*, **2009**, 131(18), 6383-6385. DOI: 10.1021/ja9004909.

7. Min, Endy Y.-J.; Byers, Jeffery A.; Bercaw, John E. "Catalyst Site Epimerization during the Kinetic Resolution of Chiral α-olefins by Polymerization" *Organometallics*, **2008**, 27(10), 2179-2188. DOI: 10.1021/om70778e.

6. Byers, Jeffery A.; Bercaw, John E. "Kinetic resolution of racemic α-olefins with *ansa*-zirconocene polymerization catalysts: Enantiomorphic site vs. chain end control" *Proceedings of*

the National Academy of Science, **2006**, 103(42), 15303-15308. DOI:10.1073/pnas.0603071103.

5. Ehlmann, Bethany L.; Arvidson, Raymond E.; Jolliff, Bradley L.; Johnson, Sarah S.; Ebel, Brian; Lovenduski, Nicole.; Morris, Julie D.; Byers, Jeffery A.; Snider, Nathan A.; Criss, Robert E. "Hydrologic and Isotopic Modeling of Alpine Lake Waiau, Mauna Kea, Hawaii" *Pacific Science* **2005**, 59(1), 1-15. DOI: 10.1353/psc.2005.0005.

4. Bolton, Daniel H.; Goetz, Jon M.; Gan, Daoji; Byers, Jeffrey A.; Poliks, Barbara; Wooley, Karen L.; Schaefer, Jacob. "Chain Dynamics in Linear and Hyperbranched Phenol-Polycarbonates**"** *Macromolecules* **2003**, 36(7), 2368-2373. DOI: 10.1021/ma021648.

3. Bolton, Daniel H.; Byers, Jeffery A.; Gan, Daoji; Goetz, Jon M.; Poliks, Barbara; Schaefer, Jacob; Wooley, Karen L. "The synthesis and study of isomeric linear and hyperbranched polycarbonates" *Polymer Preprints* **2003**, 44(1), 760.

2. O'Connor, Robert D.; Poliks, Barbara; Bolton, Daniel H.; Goetz, Jon M.; Byers, Jeffery A.; Wooley, Karen L.; Schaefer, Jacob. "Chain Packing in Linear Phenol-Polycarbonate by $^{13}C\{^{2}H\}$ REDOR" *Macromolecules* **2002**, 35(7), 2608-2617. DOI: 10.1021/ma010919i.

1. O'Connor, Robert D.; Byers, Jeffery A.; Arnold, William D.; Oldfield, Eric; Wooley, Karen L.; Schaefer, Jacob. "Chain Packing in Ethoxyphenyl-Polycarbonate by $^{13}C\{^{2}H\}$ REDOR", *Macromolecules* **2002**, 35(7), 2618-2623. DOI: 10.1021/ma010918q.

Patents

4. Wong, Alexander; Byers, Jeffery A.; "Synthesis and Characterization of Air-Stable Iron-Based Precatalyzsts for Suzuki-Miyaura Cross Coupling Reactions of Alkyl Halides and Aryl Boronic Esters", U.S. Provisional Patent, Application # 63/175,388, filed April 15, 2021.

3. Byers, Jeffery A.; Szymczak, Nathaniel; Kehl, Jeffrey A.; Tsen, Kuei-Nin "Formation of High-Molecular Weight Polyethylene from a Sterically Unencumbered Iron-Based Catalyst", U.S. Provisional Patent, Application # 62/255745, filed November 16, 2015.

2. Tsung, Chia-Kuang; Byers, Jeffery A. "Molecular Encapsulation in Metal-Organic Framework Crystals", PCT Application No. PCT/US2015/045555, filed August 17, 2015.

1. Byers, Jeffery A.; Manna, Cesar M.; Yablon, Lauren L. "Stereoselective Polymerization of Lactide Resulting from In Situ Formation of a Chiral Catalyst", U.S. Provisional Patent, Application # 62/082,330, filed November 20, 2014.

Presentations, Invited

96. Byers, Jeffery A. "Development of Redox-Switchable Polymerization Catalysts for Precision Polymer Synthesis", Pacific Chem, December 20, **2021**, oral presentation.

95. Byers, Jeffery A.* "How Iron-Based Polymerization Catalysts Led to Catalysts for Cross Coupling Reactions", Colorado State University, October 4, **2021**, oral presentation.

94. Byers, Jeffery A.* "Capitalizing on Redox-Switching and Host-Guest Interactions in Catalysis", Virginia Tech, September 1, **2021**, oral presentation.

93. Byers, Jeffery A.*; Gallin, Connor F. "Closed Loop Chemical Recycling of Polyester Copolymers", IUPAC/CCCE Virtual Conference, August 18, **2021**, oral presentation.

92. Byers, Jeffery A.*; Crockett, Michael P.; Tyrol, Chet C.; Wong, Alexander S.; Thompson, William; Gallin, Connor F.; Yone, Nang "Iron-Based Catalysts for Suzuki-Miyaura Cross Coupling Reactions Involving Alkyl Electrophiles", Genentech-Roche Virtual Green Chemistry Education Seminar, August 17, **2021**, oral presentation.

91. Byers, Jeffery A.*; Biernesser, Ashley B.; Delle Chiaie, Kayla; Qi, Miao; Thompson, Matthew; Crockett, Michael; Tyrol, Chet; Wong, Alexander "Journeying from Catalysts Used for Redox-Switchable Polymerization Reactions to Catalysts Used for Cross Coupling Reactions", American Chemical Society National Meeting, virtual, ORGN, April 13, **2021**, oral presentation.

90. Byers, Jeffery A.* "Controlling Sequence in Polymerization Reactions", NSF Center for Integrated Catalysis Webinar, April 13, **2021**, oral presentation.

89. Byers, Jeffery A.*; Tsung, Chia-Kuang; Rayder, Thomas; Li, Banruo; Li, Zhehui; Bensalah, Adam "CO_2 Hydrogenation to Methanol Using a Biologically Inspired Tandem Host-Guest Catalyst System", American Chemical Society National Meeting, Virtual, CATL, April 12, **2021**, oral presentation.

88. Byers, Jeffery A.*; Qi, Miao; Li, Haochuan; Dong, Qi; Li, Jingyi; Musgrave, Rebecca; Zaho, Yanyan; Dulock, Nicholas; Wang, Dunwei "Redox-Switchable Polymerization from Surfaces: Towards Integrated Catalysis", American Chemical Society National Meeting, Virtual, INOR Harry Gray Award for Creative Work in Inorganic Chemistry by a Young Investigator Symposium Honoring Smaranda Marinescu, April 8, **2021**, oral presentation.

87. Byers, Jeffery A.*; "Using Iron-Based Complexes for Redox-Switchable Ring-Opening Polymerization Catalysis", University of Houston, September 1, **2020**, oral presentation.

86. Byers, Jeffery A.*; "Logical Catalyst Design for Improved Performance in Iron-Catalyzed Suzuki-Miyaura Cross Coupling Reactions", 24th ACS Green Chemistry and Engineering Conference, virtual conference, June 12, **2020**, oral presentation.

85. Qi, Miao; Zhang, Haochuan; Dong, Qi; Li, Jingyi; Musgrave, Rebecca; Zhao, Yanyan; Dulock, Nicholas; Wang, Dunwei*; Byers, Jeffery A.* "Using Redox-Switchable Catalysis for Surface Initiated Polymerization", Beckman New England Macromolecular Science Workshop virtual symposia, June 9, **2020**, oral presentation.

84. Byers, Jeffery A.*; Crockett, Michael P.; Wong, Alexander S.; Tyrol, Chet C.; Gallin, Connor F.; Yone, Nang; "Iron-Based Catalysis for Suzuki-Miyaura Cross Coupling Reactions Involving Alkyl Electrophiles", Pfizer Pharmaceutical Inc., Groton, CT, November 20, **2019**, oral presentation.

83. Byers, Jeffery A.*; Crockett, Michael P.; Wong, Alexander S.; Tyrol, Chet C.; Gallin, Connor F.; Yone, Nang; "Suzuki-Miyaura Cross-Coupling Reactions with Iron-Based Complexes", Pfizer Green Chemistry Symposium, Boston College, Chestnut Hill, MA, November 2, **2019**, oral presentation.

82. Byers, Jeffery A.*; "Redox-Switchable Ring-Opening Polymerization Catalysis", Carnegie Mellon University, October 23, **2019**, oral presentation.

81. Byers, Jeffery A.*; "Mechanistically-Driven Development of Iron-Based Catalysts for Suzuki-

Miyaura Cross Coupling Reactions" 50th Boston Regional Inorganic Colloquium in Honor of Professor William Armstrong, Boston University, Boston, MA, October 5, **2019**, oral presentation.

80. Byers, Jeffery A.*; Tyrol, Chet C.; Yone, Nang "Synthesis of Enantiomerically Enriched Diaryl Alkanes Through a Stereoconvergent, Suzuki-Miyaura Cross Coupling Reaction", 258th American Chemical Society National Meeting, San Diego, CA ORGN 527, August 27, **2019**, oral presentation.

79. Byers, Jeffery A.*; Qi, Miao; Dong, Qi; Wang, Dunwei; "E-Switchable Polymerization Catalysis", 258th American Chemical Society National Meeting, San Diego, CA ENFL 341, August 27, **2019**, oral presentation.

78. Byers, Jeffery A.*; Crockett, Michael P.; Wong, Alexander S.; "Logical Ligand Design of Iron-Based Complexes Used as Catalysts for Suzuki-Miyaura Cross-Coupling Reactions", 258th American Chemical Society National Meeting, Organometallics Distinguished Author Symposium in Honor of Ian Tonks, San Diego, CA INOR 85, August 25, **2019**, oral presentation.

77. Byers, Jeffery A.*; Tsung, Chia-Kuang*; Li, Zhehui; Rayder, Thomas R.; Benselah, Adam T.; Adillon, Enric H.; D'Souza, Noella "Transition Metal Catalysts Encapsulated in a Metal-Organic Framework for the Autocatalytic Conversion of CO_2 to Methanol" DOE-BES Program Review Meeting, Bethesda, MD, July 24-26, **2019**, poster presentation.

76. Byers, Jeffery A.*; Crockett, Michael P.; Tyrol, Chet C.; Wong, Alexander S.; Nang, Yone; "Using Unactivated Boronic Esters for Suzuki-Miyaura Cross Coupling Reactions Catalyzed by Iron-Based Complexes", 2nd International Conference on Boron Chemistry, Taiyuan, China, July 15, **2019**, oral presentation.

75. Byers, Jeffery A.*; Thompson, Matthew; Delle Chaie, Kayla R.; Kehl, Jeffrey A.; Oh, Sewon; Brown, Gretchen; Gonzales, Stella "Redox-Switchable Polymerization for the Synthesis of High Performance Polymers", ARO Program Review, Durham, NC June 23, **2019**, oral presentation.

74. Byers, Jeffery A.*; "Controlling Surface Initiated Ring-Opening Polymerization Using Redox-Switchable Polymerization Catalysis", Stanford University, Palo Alto, CA, June 20, **2019**, oral presenation.

73. Byers, Jeffery A.*; "Redox-Switchable Ring-Opening Polymerization Catalysis", University of Science and Technology, Hefei, Anhui, China, May 6, **2019**, oral presentation.

72. Byers, Jeffery A.*; "Redox-Switchable Ring-Opening Polymerization Catalysis", Donghua University, Shanghai, China, May 5, **2019**, oral presentation.

71. Byers, Jeffery A.*; Crockett, Michael P.; Tyrol, Chet R.; Wong, Alexander S.; Yone, Nang "Using Unactivated Boronic Esters for Suzuki-Miyaura Cross Coupling Reactions Catalyzed by Iron-Based Complexes", Bristol-Myers-Squibb, New Brunswick, NJ, April 16, **2019**, oral presentation.

70. Byers, Jeffery A.*; Thompson, Matthew S.; Qi, Miao; Delle Chiaie, Kayla R.; Kehl, Jeffrey A.; Gonsales, Stella "Applications of redox-switchable catalysts for the synthesis of advanced polymeric materials", 257th American Chemical Society National Meeting, Orlando, FL POLY 218, April 2, **2019**, oral presentation.

69. Byers, Jeffery A.*; Delle Chiaie, Kayla D.; Qi, Miao; Thompson, Matthew S.; Gonzales, Stella; Kehl, Jeffrey A. "Mechanistic Investigations into Redox-Switchable Ring-Opening

Polymerization", Inorganic Reaction Mechanisms Gordon Research Conference, Galveston, TX March 12, **2019**, oral presentation.

68. Byers, Jeffery A.*; Crockett, Michael P.; Tyrol, Chet C.; Wong, Alexander S.; Yone, Nang "Development of an Iron-Based Catalyst for Suzuki-Miyaura Cross Coupling Reactions", Amgen Inc., Cambridge, MA, November 9, **2018**, oral presenatation.

67. Byers, Jeffery A.*; Crockett, Michael P.; Tyrol, Chet C.; Wong, Alexander S.; Yone, Nang "Development of an Iron-Based Catalyst for Suzuki-Miyaura Cross Coupling Reactions", ACS Green Chemistry Institute Pharmaceutical Roundtable, Grouton, CT, October 9, **2018**, oral presentation.

66. Byers, Jeffery A.*; "Iron-Based Catalysts for Cross-Coupling Reactions", 256th American Chemical Society National Meeting, Boston, MA ORGN 77, August 19, **2018**, oral presentation.

65. Byers, Jeffery A.*; Kaur, Aman; Manna, Cesar; Kehl, Jeffrey A.; Qi, Miao "Tacticity Control Through in situ Catalyst Desymmetrization", 256th American Chemical Society National Meeting, Boston, MA PMSE 58, August 19, **2018**, oral presentation.

64. Byers, Jeffery A.*; "Controlling Stereoregularity Through in situ Catalyst Desymmetrization", Stereochemistry Gordon Research Conference, Salve Regina University, Newport, RI, July 22, **2018**, oral presentation.

63. Byers, Jeffery A.*; Thompson, Matthew S.; Wissinger, Jane E.; Andrisen, Rachel; Crockett, Michael P.; Qi, Miao; Rayder, Thomas M. "Using a biodegradable polymer for oil spill cleanup, a laboratory experiment", 22nd American Chemical Society Green Chemistry and Engineering Conference, Portland, OR, June 19, **2018**, oral presentation (talk 101).

62. Byers, Jeffery A.* "Exploring Switchable Catalysis and Catalysts Encapsulated in Metal-Organic Frameworks for Environmental Applications", 46th Boston Regional Inorganic Colloquium, Brown University, Providence, RI, April 28, **2018**, oral presentation.

61. Byers, Jeffery A.* "Controlling Catalytic Reactions with Tunnels and Switches", Tufts University, Medford, MA, April 4, **2018**, oral presentation.

60. Byers, Jeffery A.* "Exploring Switchable Catalysts and Catalysis in Metal-Organic Frameworks for Environmental Applications", University of Memphis, Memphis, TN, November 17, **2017**, oral presentation.

59. Byers, Jeffery A.*; "Small Molecule Assembly and Macromolecular Engineering Using Iron-Based Catalysts", Massachusetts Institute of Technology, Cambridge, MA, September 20, **2017**, oral presentation.

58. Byers, Jeffery A.*; "Dynamic and Switchable Iron-Based Polymerization Catalysis" Organometallics Gordon Conference, Salve Regina University, Newport, RI, July 9, **2017**, oral presentation.

57. Byers, Jeffery A.*; "Dynamic and Switchable Iron-Based Polymerization Catalysts", Polymers Gordon Conference, Mount Holyoke College, S. Hadley, MA, June 15, **2017**, oral presentation.

56. Byers, Jeffery A.*; Biernesser, Ashley B.; Delle Chiaie, Kayla R.; Kehl, Jeffrey A.; Qi, Miao "On the Role of Oxidation State in Ring Opening Polymerization Reactions Catalyzed by Iron", 100th Canadian Chemistry Conference, Toronto, OT INOR 683, May 30, **2017**, oral presentation.

55. Byers, Jeffery A.*; "Dynamic and Switchable Iron-Based Catalysts for the Diversification of a Biodegradable Polymer", University of Washington, Seattle, WA, April 13, **2017**, oral presentation.

54. Byers, Jeffery A.*; "Dynamic and Switchable Iron-Based Catalysts for the Diversification of a Biodegradable Polymer", University of British Columbia, Vancouver, BC Canada, April 12, **2017**, oral presentation.

53. Byers, Jeffery A.*; Biernesser, Ashley B.; Delle Chiaie, Kayla; Kehl, Jeffrey; Qi, Miao; Sudyn, Alexander "Redox-Switchable iron-based polymerization catalysts", 253rd ACS National Meeting, San Francisco, CA INOR 683, April 4, **2017**, oral presentation.

52. Byers, Jeffery A.*; Szymczak, Nathaniel; Kehl, Jeffrey; Kaur, Aman; Manna, Cesar; Tseng, Kuei-Nin; Hale, Lily, Biernesser, Ashley "Polymerization catalysts that benefit from dynamic ligand behavior", 253rd ACS National Meeting, Gabor A. Samorjai Award for Creative Research in Catlaysis: Symposium in Honor of John E. Bercaw, San Francisco, CA INOR 500, April 3, **2017**, oral presentation.

51. Byers, Jeffery A.*; Delle Chiaie, Kayla; Biernesser, Ashley B.; Sudyn, Alexander "Block copolymers and crosslinked copolymers obtained with redox-switchable polymerization catalysts", 253rd ACS National Meeting, PMSE Young Investigator's Symposium, San Francisco, CA INOR 113, April 3, **2017**, oral presentation.

50. Byers, Jeffery A.* "Dynamic and Switchable Iron-Based Polymerization Catalysts", Harvard University, Cambridge, MA November 7, **2016**, oral presentation.

49. Byers, Jeffery A.* "Controlling Selectivity in Transition Metal Catalysis Using Dynamic Processes and Redox-Switchable Catalysis", University of Pennsylvania, October 18, **2016**, oral presentation.

48. Byers, Jeffery A.*, Biernesser, Ashley B.; Delle Chiaie, Kayla R.; Kaur, Aman; Manna, Cesar M.; Yablon, Lauren M. "Iron-Based Catalysts for the Diversification of a Biodegradable Polymer", 99th Canadian Chemistry Conference, Halifax, Nova Scotia, Canada, June 8, **2016**, IN 1286, oral presentation.

47. Biernesser, Ashley B.; Delle Chiaie, Kayla R.; Curley, Julia B.; Yablon, Lauren; Byers, Jeffery A.* "Diversification of Poly(lactic acid) Using Redox Switchable Catalysis", 2nd Sustainable Polymer Conference, Safety Harbor, FL May 23, **2016**, oral presentation.

46. Byers, Jeffery A.* "Iron-Based Catalysts for the Diversification of a Biodegradable Polymer", University of Texas at Austin, May 9, **2016**, oral presentation.

45. Byers, Jeffery A.* "Iron-Based Catalysts for the Diversification of a Biodegradable Polymer", University of Wisconsin at Madison, April 27, **2016**, oral presentation.

44. Byers, Jeffery A.* "Iron-Based Catalysts for the Diversification of a Biodegradable Polymer", University of Minnesota, April 26, **2016**, oral presentation.

43. Byers, Jeffery A.* "Iron-Based Catalysts for the Diversification of a Biodegradable Polymer", Texas A&M University, April 14, **2016**, oral presentation.

42. Byers, Jeffery A.* "Iron-Based Catalysts for the Diversification of a Biodegradable Polymer", University of Rochester, April 5, **2016**, oral presentation.

41. Byers, Jeffery A.* "Iron-Based Catalysts for the Diversification of a Biodegradable Polymer", Cornell University, April 4, **2016**, oral presentation.

40. Byers, Jeffery A.* "Controlling Selectivity and Activity in Transition Metal Catalysts Using Molecular Encapsulation and Redox-Switchable Catalysis", University of Chicago, Chicago, IL March 31, **2016**, oral presentation.

39. Byers, Jeffery A.*; Tsung, Chia-Kuang*; Li, Zhehui; Morabito, Joseph V.; Beal, Kelton "Linker Exchange Reaction Mechanisms and Its Application Toward the Synthesis of Hybrid Catalyst Systems", 251st ACS National Meeting, ACS Award in Pure Chemistry: Symposium in Honor of Jonathan Owen, San Diego, CA, March 14, **2016**, INOR-515 oral presentation.

38. Byers, Jeffery A.* "Iron-Based Catalysts for the Diversification of a Biodegradable Polymer", Michigan University, Ann Arbor, MI March 9, **2016**, oral presentation.

37. Byers, Jeffery A.* "Iron-Based Catalysts for the Diversification of a Biodegradable Polymer", Massachusetts Institute of Technology, Cambridge, MA March 4, **2016**, oral presentation (student invited talk).

36. Byers, Jeffery A.* "Iron-Based Catalysts for the Diversification of a Biodegradable Polymer", North Carolina State University, February 24, **2016**, oral presentation.

35. Byers, Jeffery A.* "Iron-Based Catalysts for the Diversification of a Biodegradable Polymer", University of North Carolina, February 23, **2016**, oral presentation.

34. Byers, Jeffery A.* "Iron-Based Catalysts for the Diversification of a Biodegradable Polymer", Duke University, February 22, **2016**, oral presentation.

33. Byers, Jeffery A.* "Iron Catalysts for the Diversification of a Biodegradable Polymer", Yale University, February 15, **2016**, oral presentation.

32. Byers, Jeffery A.* "Iron Catalysts for the Diversification of a Biodegradable Polymer", University of Maryland, February 11, **2016**, oral presentation.

31. Byers, Jeffery A.* "Controlling Selectivity and Activity in Transition Metal Catalysis Using Molecular Encapsulation and Redox-Switchable Catalysis", Northwestern University, February 5, **2016**, oral presentation.

30. Byers, Jeffery A.* "Controlling Selectivity and Activity in Transition Metal Catalysis Using Molecular Encapsulation and Redox-Switchable Catalysis", University of Illinois at Chicago, February 4, **2016**, oral presentation.

29. Byers, Jeffery A.* "Iron Catalysts for the Diversification of a Biodegradable Polymer", Boston University, January 25, **2016**, oral presentation.

28. Byers, Jeffery A.* "Iron Catalysts for the Diversification of a Biodegradable Polymer", Columbia University, January 22, **2016**, oral presentation.

27. Byers, Jeffery A.* "Iron Catalysts for the Diversification of a Biodegradable Polymer", University of California at Riverside, January 18, **2016**, oral presentation.

26. Byers, Jeffery A.* "Iron Catalysts for the Diversification of a Biodegradable Polymer", University of California at Irvine, January 17, **2016**, oral presentation.

25. Byers, Jeffery A.* "Diversifying Biodegradable Polymers Using Iron-Based Catalysts", ExxonMobile, Baytown, TX, November 19, **2015**, oral presentation.

24. Byers, Jeffery A.* "Controlling Polymerization with a Redox Switch", 14th Pacific Polymer Conference, Kauai, HI, December 18, **2015**, oral presentation.

23. Byers, Jeffery A.* "Iron-Based Catalysts for the Synthesis of New Biodegradable Polymers", Washington University in St. Louis, St. Louis, MO, October 29, **2015**, oral presentation.

22. Byers, Jeffery A.* "Diversifying Biodegradable Polymers with the Aid of Iron-Based Catalysts", Bridgewater State University, Bridgewater, MA, October 16, **2015**, oral presentation.

21. Byers, Jeffery A.* "Diversifying Biodegradable Polymers with the Aid of Iron-Based Catalysts", Bridgewater State University, Bridgewater, MA, October 16, **2015**, oral presentation.

20. Byers, Jeffery A.* "Iron-Based Catalysts for the Synthesis of Biodegradable Polymers with Diverse Physical and Mechanical Properties", Princeton University, Princeton, NJ, September 15, **2015**, oral presentation.

19. Byers, Jeffery A.* "Diversifying Biodegradable Polymers with the Aid of Iron-Based Catalysts" University of Massachusetts, Dartmouth, Dartmouth, MA, September 9, 2015.

18. Byers, Jeffery A.* "Battling Inaccessibility" Cottrell Scholars Conference, Tucson, AZ, June 7-10, **2015**, oral and poster presentation.

17. Byers, Jeffery A.* "Iron-Based Catalysts for the Synthesis of Biodegradable Polymers with Diverse Physical and Mechanical Properties", University of California at Santa Barbara, Santa Barbara, CA, April 10, **2015**, oral presentation.

16. Byers, Jeffery A.* "Assembly of Polymeric Architectures Relevant to Drug Delivery and Other Biomedical Devices", City of Hope, Monrovia, CA, April 9, **2015**, oral presentation.

15. Byers, Jeffery A.* "Versatile Iron-Catalysts for the Control of Tacticity, Architecture, and Composition in Biodegradable Polymers", University of California at Los Angeles, Los Angeles, CA, April 8, **2015**, oral presentation.

14. Byers, Jeffery A.* "Versatile Iron-Catalysts for the Control of Tacticity, Architecture, and Composition in Biodegradable Polymers", University of Sothern California, Los Angeles, CA, April 7, **2015**, oral presentation.

13. Byers, Jeffery A.* "Iron Catalysis for the Synthesis of Value-Added Products", California Institute of Technology, Pasadena, CA, April 6, **2015**, oral presentation.

12. Byers, Jeffery A.*; Weerapana, Eranthie*; Tamburini, Fiona; Kelly, Thomas; Chinnaswamy, Nicaela; Fazekas, Timothy "Paper to plastics: An interdisciplinary outreach program in sustainable research", 249th ACS National Meeting, Denver, CO, March 25, **2015**, oral presentation.

11. Byers, Jeffery A.* "Iron Catalysis for the Synthesis of Value-Added Products", Brandeis University, Waltham, MA, March 9, **2015**, oral presentation.

10. Byers, Jeffery A.*, Tsung, Chia-Kuang*, Morabito, Joseph V.; Chou, Lien-Yang; Li, Zhehui; Kyada, Rutvin J. "Mechanistic Insight into Solvent-Dependent Linker Exchange Reactions in Metal Organic Frameworks", Inorganic Reaction Mechanisms Gordon Conference, Galveston, TX, March 7, **2015**, oral presentation (selected poster talk).

9. Byers, Jeffery A.* "Redox-switchable Reactions for the Synthesis of Biodegradable Polymers", Saint Anselm College, Manchester, NH, October 17, **2014**, oral presentation.

8. Byers, Jeffery A.* "Redox-switchable Reactions for the Synthesis of Biodegradable Polymers",

Colgate University, Hamilton, NY, October 7, **2014**, oral presentation.

7. Byers, Jeffery A.*; Biernesser, Ashley B.; Kaplan, Hilan Z.; Manna, Cesar M.; "Non-noble metal catalysis for the synthesis of degradable polymers", 248th ACS National Meeting, San Francisco, CA, August 11, **2014**, INOR-403, oral presentation.

6. Byers, Jeffery A.* "Teaching base metals new tricks: Biodegradable polymer synthesis using iron catalysts", 247th ACS National Meeting, Dallas, TX, March 16, **2014**, SOCED-1, oral presentation.

5. Byers, Jeffery A.*; Kaplan, Hilan Z.; Biernesser, Ashley B. "Capitalizing on the Remarkable Reactivity of Iron: The Discovery of Redox Active NHC's and Redox-Controlled Copolymerization Reactions", Dartmouth College, Hanover, RI, February 13, **2014**, oral presentation.

4. Byers, Jeffery A.*; Kaplan, Hilan Z.; Biernesser, Ashley B. ""Dealing" with Non-noble Metals in Chemical Catalysis", University of Rhode Island, Kingston, RI, November 20, **2013**, oral presentation.

3. Byers, Jeffery A.*; Kaplan, Hilan Z.; Aristidis Vasilopoulos. "Redox robust non-noble metal carbenodiimine complexes". 245th ACS National Meeting, ACS Award in Pure Chemistry: Symposium in Honor of Theodor Agapie, New Orleans, LA, April 7, **2013**, INOR-157, oral presentation.

2. Byers, Jeffery A.*; Drake, Jessica L.; Kaplan, Hilan Z.; Manna, Cesar; Vasilopoulos, Aristidis "Capitalizing on the Unique Properties of N-Heterocyclic Carbenes in Non-Nobel Metal Bonding and Catalysis". 31st Boston Regional Inorganic Colloquium (BRIC), Harvard University, Cambridge, MA; March 2, **2013**, oral presentation.

1. Byers, Jeffery A.* "Paramagnetic Iron Carbenodiimine Complexes: How NMR is Not Enough". Trinity College, San Antonio, TX; September 13, **2012**, oral presentation.

Presentations (Presenter Underlined)

90. Byers, Jeffery A.*; Tsung, Chia-Kuang*; Li, Zhehui; Rayder, Thomas R.; Adillon, Enric; Li, Banruo; Thompson, William "Host-Guest Catalyst Systems for CO_2 Conversion Using Transition Metal Complexes Encapsulated in Metal-Organic Frameworks", Materials Research Society National Meeting, November 29, **2021**, oral presentation.

89. Gallin, Connor; Byers, Jeffery A.* "Accessing chemically recyclable polymers through ring-opening copolymerization/depolymerization of strained monomers with unstrained monomers" American Chemical Society National Meeting, virtual POLY, April 13, **2021**, oral presentation.

88. Liu, Jiangwei; Byers, Jeffery A.* "Synthesis of thermoplastic elastomeric triblock copolymers derived from lactid acid and THF using redox-switchable polymerization" American Chemical Society National Meeting, virtual POLY, April 14, **2021**, oral presentation.

87. Thompson, Matthew; Byers, Jeffery A.*, "Redox-switchable polymerization by chain transfer (ReSPCT) of lactones, epoixides and carbon dioxide" American Chemical Society National Meeting, virtual ORGN, April 13, **2021**, oral presentation.

86. Tyrol, Chet; Byers, Jeffery A.*, "Efficient and general alkyl-alkyl Suzuki-Miyaura cross-coupling enabled by an iron-based catalyst" American Chemical Society National Meeting, virtual ORGN, April 16, **2021**, oral presentation.

85. Wong, Alexander; Byers, Jeffery A.*, "Improving practicality in iron-catalyzed Suzuki-Miyaura reactions" American Chemical Society National Meeting, virtual ORGN, April 16, **2021**, oral presentation.

84. Rayder, Thomas; Adillon Enric H.; Tsung, Chia-Kuang*; Byers, Jeff A.* "Catalytic Hydrogenation of CO_2 to Methanol Using Tandem Catalysis Involving Encapsulated Ruthenium Complexes in the Metal-Organic Framework UiO-66" 258th American Chemical Society National Meeting, San Diego, CA INOR 628, August 28, **2019**, oral presentation.

83. Qi, Miao; Zhang, Haochuan; Dong, Qi; Wang, Dunwei*; Byers, Jeff A.* "Patterning Surface-Initiated Polymer Growth by an Electrochemical Redox Switch" 258th American Chemical Society National Meeting, San Diego, CA POLY 214, August 27, **2019**, oral presentation.

82. Thompson, Matthew; Gonsales, Stella; Byers, Jeffery A.* "Synthesis of Block Copolymers of Polyamides Through Ring-Opening Polymerization Catalyzed by Redox-Switchable Iron Alkoxide Complexes", 258th American Chemical Society National Meeting, San Diego, CA PMSE 152, August 26, **2019**, oral presentation.

81. Adillon, Enric H.; Byers, Jeffery A.* "Dirhodium Carboxylate Complexes Encapsulated in Metal-Organic Frameworks for the C-H Functionalization of Alkanes", 258th American Chemical Society National Meeting, San Diego, CA CHED 35, August 25, **2019**, oral presentation.

80. Rayder, Thomas M.; Adillon, Enric H.; Byers, Jeffery A.*; Tsung, Chia-Kuang* "Bio-Inspired Conversion of CO_2 to Renewable Fuel through Tandem Catalysis Employing an Encapsulated Catalyst@MOF Species", Nanoporous Materials and Their Applications Gordon Research Conference, Proctor Academy, Andover, NH, August 4-9, **2019**, poster presentation.

79. Byers, Jeffery A.* "Applications of Redox-Switchable Catalysts for the Synthesis of Advanced Polymeric Materials", Polymers Gordon Research Conference, Mount Holyoke College, South Hadley, MA, June 10-15, **2019**, oral presentation.

78. Qi, Miao; Zhang, Haochuan; Wang, Dunwei*; Byers, Jeffery A.* "Patterning Surface-Initiated Polymer Growth by an Electrochemical Redox Switch", Polymers Gordon Research Seminar, Mount Holyoke College, South Hadley, MA June 9, **2019**, poster presentation.

77. Byers, Jeffery A.*; Tsung, Chia-Kuang*; Li, Zhehui; Rayder, Thomas M.; Adillon, Enric "Using aperture opening events in UiO-66 to encapsulate organometallic catalysts for CO_2 conversion", 257th American Chemical Society National Meeting, Orlando, FL INOR-510, April 2, **2019**, oral presentation.

76. Adillon, Enric H.; Li, Zhehui; Rayder, Thomas; Byers, Jeffery A.*; Tsung, Chia-Kuang* "Role of confinement for host-guest interactions in UiO-66", 256th American Chemical Society National Meeting, Boston, MA CHED-244, August 20, **2018**, poster presentation.

75. Thompson, Matthew; Gonsales, Stella A.; Byers, Jeffery A.* "Synthesis of polyamides and poly(ester-amides) through ring-opening polymerization catalyzed by iron alkoxide complexes", 256th American Chemical Society National Meeting, Boston, MA POLY-328, August 20, **2018**, poster presentation.

74. Crockett, Michael P.; Tyrol, Chet C.; Wong, Alexander S.; Byers, Jeffery A.* "Development of an iron-catalyzed Suzuki-Miyara cross-coupling reaction between alkyl halides and unactivated aryl boronic esters", 256th American Chemical Society National Meeting, Boston, MA INOR-294, August 20, **2018**, oral presentation.

73. Kehl, Jeffrey A.; Oh, Sewon; Byers, Jeffery A.* "Utilizing chemoselective, redox-switchable iron-based catalysts for the synthesis of branched PLA", 256th American Chemical Society National Meeting, Boston, MA POLY-331, August 20, **2018**, poster presentation.

72. Wong, Alexander S.; Sudyn, Alexander W.; Thompson, Matthew; Andrison, Rachel; Wissinger, Jane E.*; Byers, Jeffery A.*, "Paper to plastics: Combining outreach with new curriculum development", 256th American Chemical Society National Meeting, Boston, MA CHED-55, August 19, **2018**, poster presentation.

71. Rayder, Thomas R.; Li, Zhehui; Adillon, Enric; Byers, Jeffery A.*; Tsung, Chia-Kuang* "One-pot production of methanol from CO_2 via tandem catalysis employing an encapsulated catalyst@MOF species", 256th American Chemical Society National Meeting, Boston, MA INOR-17, August 19, **2018**, oral presentation.

70. Tyrol, Chet C.; Crockett, Michael P.; Byers, Jeffery A.* "Enantioselective Suzuki-Miyaura cross coupling of alkyl halides and unactivated boronic esters", 256th American Chemical Society National Meeting, Boston, MA ORGN-100, August 19, **2018**, poster presentation.

69. Qi, Miao; Dong, Qi; Wang, Dunwei; Byers, Jeffery A.* "E-Switchable ring-opening polymerization of lactide and an epoxide", 256th American Chemical Society National Meeting, Boston, MA INOR-97, August 19, **2018**, oral presentation.

68. Delle Chiaie, Kayla R.; Qi, Miao; Byers, Jeffery A.* "Mechanistic studies into iron-catalyzed epoxide polymerization reactions", 256th American Chemical Society National Meeting, Boston, MA INOR-90, August 19, **2018**, oral presentation.

67. Crockett, Michal P.; Tyrol, Chet C.; Wong, Alexander S.; Byers, Jeffery A.* "Development of an iron-catalyzed Suzuki-Miyaura cross-coupling reaction between alkyl halides and aryl boronic esters", BioHub Chemistry Symposium, Waltham, MA, August 17, **2018**, poster presentation.

66. Byers, Jeffery A.*; Crockett, Michael P.; Tyrol, Chet C.; Wong, Alexander S.; Yone, Nang "Iron-Based Catalysts for Catalytic Cross-Coupling Reactions", Organic Reactions and Processes Gordon Research Conference, Stonehill College, Easton, MA, June 15-20, **2018**, poster presentation.

65. Crockett, Michal P.; Tyrol, Chet C.; Wong, Alexander S.; Byers, Jeffery A.* "Development of an iron-catalyzed Suzuki-Miyaura cross-coupling reaction between alkyl halides and aryl boronic esters", BORAM XVI, Boston College, Boston, MA, June 29, **2018**, oral presentation.

64. Crockett, Michael P.; Tyrol, Chet C.; Wong, Alexander S.; Byers, Jeffery A.* "Development of an iron-catalyzed Suzuki-Miyaura cross-coupling reaction between alkyl halides and aryl boronic esters", 22nd American Chemical Society Green Chemistry and Engineering Conference, Portland, OR, June 19, **2018**, oral presentation (talk 127).

63. Crockett, Michael P.; Tyrol, Chet C.; Wong, Alexander S., Byers, Jeffery A.* "Iron-Catalyzed Suzkuki-Miyaura Cross-Coupling Reactions Between Alkyl Halides and Unactivated Aryl Boronic Esters", Boston Symposium on Organic and Bioorganic Chemistry, Merck, Boston, MA; October 18, **2017**, poster presentation.

62. Delle Chiaie, Kayla R.; Biernesser, Ashley B.; Sudyn, Alexander; Byers, Jeffery A.* "Exploration of a versatile bis(imino)pyridine iron catalyst for redox-triggered cross linking polymerization", Polymers Gordon Research Conference, Mount Holyoke College, South Hadley, MA; June 11-16, **2017**, poster presentation.

61. Delle Chiaie, Kayla R.; Biernesser, Ashley B.; Yablon, Lauren; Sudyn, Alexander; Michalowski, Gregory; Byers, Jeffery A.* "Synthesis and characterization of crosslinked biodegradable polymers obtained using a redox-triggered crosslinking reaction", 253rd ACS National Meeting, San Francisco, CA; April 5, **2017**, POLY-538, oral presentation.

60. Kehl, Jeffrey A.; Tseng, Keui-Nin; Hale, Lily; Biernesser, Ashley B.; Szymczak, Nathaniel*; Byers, Jeffery A.* "Investigation of a unique mechanism for the production of high molecular weight polyethylene using bis(pyridylimino)isoindolate iron(II) catalysts", 253rd ACS National Meeting, San Francisco, CA; April 3, **2017**, INOR-563, oral presentation.

59. Delle Chiaie, Kayla R.; Biernesser, Ashley B.; Byers, Jeffery A.* "Redox switchable catalysts for the synthesis of block copolymers and crosslinked polymers", 253rd ACS National Meeting, San Francisco, CA; April 2, **2017**, INOR-394, poster presentation.

58. Crockett, Michael; Byers, Jeffery A.* "Towards an Iron-Catalyzed Suzkuki-Miyaura Cross Coupling Reaction", ACS Green Chemistry Institute Conference, Cambridge, MA, October 13, **2016**, poster presentation.

57. Biernesser, Ashley B.; Delle Chiaie, Kayla R.; Curley, Julia; Byers, Jeffery A.* "Redox-controlled polymerization with an iron-based catalyst", 252nd ACS National Meeting, Philadelphia, PA; August 22, **2016**, INOR-207, oral presentation.

56. Kaur, Aman; Byers, Jeffery A.* "Synthesis of biodegradable polymers via ring-opening polymerization mediated by iron(II) complexes", 252nd ACS National Meeting, Philadelphia, PA; August 22, **2016**, INOR-204, oral presentation.

55. Biernesser, Ashley B.; Delle Chiaie, Kayla R.; Byers, Jeffery A*. "Redox-controlled copolymerization of cyclic esters and epoxides with iron bis(imino)pyridine bis(alkoxide) complexes" 39th Organometallic Chemistry Gordon Research Conference, Newport, RI, July 10-14, **2016**, poster presentation.

54. Byers, Jeffery A.*, Nathaniel Szymczak*, Jeffrey A. Kehl, Kuei-Nin Timothy Tseng, Lillian Hale, Ashley B. Biernesser, Aman Kaur, Kayla R. Delle Chiaie, Miao Qi "Dynamic and Switchable Iron-Based Polymerization Catalysts" 39th Organometallic Chemistry Gordon Research Conference, Newport, RI, July 10-14, **2016**, poster presentation.

53. Byers, Jeffery A.*; Kaur, Aman; Manna, Cesar M.; Yablon, Lauren L.; Li, Bo; Haefner, Fredrick "Synthesis of Stereoregular and Cyclic Poly(lactic acid) Using an Iron-Based Catalyst" 251st ACS National Meeting, San Diego, CA; March 16, **2016**, INOR-1104, oral presentation.

52. Byers, Jeffery A.; Tsung, Chia-Kuang; Li, Zhehui; Morabito, Joseph; Chou, Lien-Yang "Linker exchange reaction mechanisms in MOFs and its application toward the synthesis of hybrid catalyst systems" Pacificchem 2015, Honolulu, HI; December 20, **2015**, INOR-1977, oral presentation.

51. Byers, Jeffery A.; Biernesser, Ashley B.; Manna, Cesar M.; Delle Chiaie, Kayla R.; Kaur, Aman; Kehl, Jeffrey; Curley, Julia "Versatile iron-based catalysts for the control of tacticity, architecture, and composition in biodegradable polymers" Pacificchem 2015, Honolulu, HI;

December 18, **2015**, INOR-292, oral presentation.

50. Kehl, Jeffrey; Byers, Jeffery A.*; Manna, Cesar M.; Yablon, Lauren L. "Application of achiral, sterically constrained bis(imino)pyridine iron complexes for the stereoregular polymerization of lactide, a mechanistic study" 250th ACS National Meeting, Boston, MA: August 19, **2015**, INOR-764, poster presentation.

49. Mako, Teresa M.; Drake, Jessica L.; Byers, Jeffery A.* "Alkyl-aryl and alkyl-alkyl cross coupling reactions catalyzed by iron bis(imino)pyridine complexes", 250th ACS National Meeting, Boston, MA: August 17, **2015**, ORGN-517, poster presentation.

48. Delle Chiaie, Kayla; Yablon, Lauren L.; Biernesser, Ashley, B.; Byers, Jeffery A.* "Redoxswitchable crosslinking polymerization", 250th ACS National Meeting, Boston, MA: August 18, **2015**, POLY-336, poster presentation.

47. Biernesser, Ashley B.; Delle Chiaie, Kayla; Curley, Julia; Byers, Jeffery A.* "Redoxswitchable block copolymerization of lactide and epoxide catalyzed by bis(imino)pyridine iron(II/III) alkoxide complexes", 250th ACS National Meeting, Boston, MA: August 18, **2015**, POLY-213, oral presentation.

46. Byers, Jeffery A.*; Tsung, Chia-Kuang*; Morabito, Joseph; Li, Zhehui; Kyada, Rutvin; Nero, Maria "Mechanistic features of linker exchange in ZIF-8 and UiO-66", 250th ACS National Meeting, Boston, MA: August 18, **2015**, INOR-462, oral presentation.

45. Byers, Jeffery A.*; Biernesser, Ashley B.; Delle Chiaie, Kayla; Kaur, Aman; Kehl, Jeffrey; Curley, Julia "Controlling stereochemistry, architecture, and composition in ring opening polymerization reactions using a versatilve iron-based catalyst", 250th ACS National Meeting, Boston, MA: August 18, **2015**, INOR-426, oral presentation.

44. Kaur, Aman; Manna, Cesar M.; Haeffner, Fredrik; Byers, Jeffery A.* "Mechanistic insights into the stereoselective ring opening polymerization of poly(lactic acid) catalyzed by achiral iron(II) based complexes", 250th ACS National Meeting, Boston, MA: August 18, **2015**, INOR-425, oral presentation.

43. Li, Zhehui; Morabito, Joseph; Kyada, Rutvin; Byers, Jeffery A.; Tsung, Chia-Kuang "Toward hybrid catalysts involving encapsulation of transition metal complexes in metal-organic frameworks (MOFs)", 250th ACS National Meeting, Boston, MA: August 17, **2015**, CATL-156, poster presentation.

42. Charles Wolstenholme; Kaplan, Hilan Z; Byers, Jeffery A.* "Synthesis of bis(amidinato)-N-heterocycliccarbene iron complexes with increased solubility and their application as catalysts for the hydrogenation of alkenes", 250th ACS National Meeting, Boston, MA: August 17, **2015**, CHED-285, poster presentation.

41. Curley, Julia; Biernesser, Ashley B.; Delle Chiaie, Kayla, Byers, Jeffery A.* "Exploiting redox switchable polymerization reactions to study electron transfer self-exchange reactions", 250th ACS National Meeting, Boston, MA: August 17, **2015**, CHED-282, poster presentation.

40. Byers, Jeffery A.*; Biernesser, Ashley B.; Delle Chiaie, Kayla; Kaur, Aman; Kehl, Jeffrey A.; Manna, Cesar M.; Curley, Julia; Yablon, Lauren L.; Michalowski, Gregory. "Versatile Iron Catalysts for the Control of Tacticity, Architecture, and Composition of Biodegradable Polymers", 38th Organometallic Chemistry Gordon Research Conference, Newport, RI, July, **2015**, poster presentation.

39. Kaur, Aman; Manna, Cesar M.; Yablon, Lauren L.; Li, Bo; Haeffner, Fredrick; Byers, Jeffery A.* "Controlling the Stereoregularity of Biodegradable Polymer through *in situ* Desymmetrization of an Achiral Iron Catalyst Precursor", Chirality Conference, Boston, MA, June 26, **2015**, poster presentation.

38. Byers, Jeffery A.*; Biernesser, Ashley B.; Delle Chiaie, Kayla; Yablon, Lauren L. "Redox-switchable polymerization reactions", Polymers Gordon Conference, Mount Holyoke College, S. Hadley, MA, June **2015**, poster presentation.

37. Byers, Jeffery A.*; Manna, Cesar M.; Yablon, Lauren L.; "In situ tacticity control in lactide polymerization reactions", 249th ACS National Meeting, Denver, CO: March 25, **2015**, INOR-907, oral presentation.

36. Byers, Jeffery A.*; Biernesser, Ashley B.; Delle Chiaie, Kayla; Curley, Julia "Redox-switchable copolymerization reactions", 249th ACS National Meeting, Denver, CO: March 24, **2015**, POLY-186, oral presentation.

35. Byers, Jeffery A.*, Tsung, Chia-Kuang*, Morabito, Joseph V.; Chou, Lien-Yang; Li, Zhehui; Kyada, Rutvin J. "Mechanistic Insight into Solvent-Dependent Linker Exchange Reactions in Metal Organic Frameworks", Inorganic Reaction Mechanisms Gordon Conference, Galveston, TX, March 7, **2015**, poster presentation (***selected for poster talk***).

34. Byers, Jeffery A.*; Tsung, Chia-Kuang*; Morabito, Joseph; Chou, Lien-Yang; Manna, Cesar M.; Li, Zhehui; Kyada, Rutvin "Large guest incorporation in ZIF-8 metal organic framework facilitated by dissociative ligand substitution reactions" 248th ACS National Meeting, San Francisco, CA: August 14, **2014**, INOR-1024, oral presentation.

33. Manna, Cesar M.; Biernesser, Ashley B.; Byers, Jeffery A. "Telechelic copolymerization reactions of cyclic diesters using monometallic iron-bisalkoxide complexes" 248th ACS National Meeting, San Francisco, CA: August 10, **2014**, INOR-347, poster presentation.

32. Byers, Jeffery A.*; Kaplan, Hilan Z.; Drake, Jessica L.; Zhang, Xiaofei "N-heterocyclic carbene non-innocence in bis(amidinato) N-heterocyclic carbene complexes" 248th ACS National Meeting, San Francisco, CA: August 10, **2014**, INOR-154, oral presentation.

31. Manna, Cesar M.; Kaplan, Hilan Z.; Byers, Jeffery A.* "Application of N-heterocyclic carbene-iron complexes for the polymerization of cyclic diesters" 248th ACS National Meeting, San Francisco, CA: August 10, **2014**, INOR-20, oral presentation.

30. Biernesser, Ashley B.; Manna, Cesar M.; Delle Chiaie, Kayla; Drake, Jessica L.; Byers, Jeffery A.* "Switchable Reactions and Ligand Non-Innocence in Iron Pincer Complexes". 37th Organometallic Chemistry Gordon Research Conference, Newport, RI, July, **2014**, poster presentation.

29. Biernesser, Ashley B.; Manna, Cesar M.; Delle Chiaie, Kayla; Byers, Jeffery A.* "Exploiting Mechanistic Features of Iron-Catalyzed Ring Opening Polymerization for the Synthesis of Advanced Materials". 35th Reactions Mechanisms Conference, **2014**, poster presentation.

28. Biernesser, Ashley B.; Byers, Jeffery A.; "Bis(imino)pyridine iron bis(alkoxide) catalysts for redox-controlled polymerization of cyclic esters". 247th ACS National Meeting, Dallas, TX: March 19, **2014**, INOR-767, oral presentation.

27. Byers, Jeffery A.: Biernesser, Ashley B. "Redox-controlled and telechelic polymerization

reactions of cyclic esters using iron bis(imino)pyridine catalysts". 247th ACS National Meeting, Dallas, TX: March 18, **2014**, POLY-170, oral presentation.

26. Byers, Jeffery A.; Kaplan, Hilan Z.; Zhang, Xiaofei "Base metal reactivity and catalysis using redox non-innocent bis(imino)-N-heterocyclic carbene ligands". 247th ACS National Meeting, Dallas, TX; March 16, **2014**, INOR-67, oral presentation.

25. Kelly, Thomas B.; Tamburini, Fiona; Weerapana, Eranthie; Byers, Jeffery A.; "Paper to plastics (P2P): An interdisciplinary summer research project for high-school students". 247th ACS Meeting, Dallas, TX; March 16, **2014**, CHED-109, poster.

24. Byers, Jeffery A.; Biernesser, Ashley B. "Iron pyridine diimine complexes as catalysts for the polymerization of cyclic esters". 246th ACS National Meeting, Indianapolis, IN; September 11, **2013**, INOR-488, oral presentation.

23. Kaplan, Hilan Z.; Wilding, Matthew J.; Li, Bo; Byers, Jeffery A. "Rethinking metal-NHC bonding: Synthesis and characterization of iron complexes bearing bis(imino)-N-heterocyclic carbene ligands". 246th ACS National Meeting, Indianapolis, IN; September **2013**, INOR-254, oral presentation.

22. Drake, Jessica L.; Manna, Cesar M.; Vasilopoulos, Aristidis; Byers, Jeffery A. "Enhanced activity for the catalytic hydrogenation of carbon dioxide to formic acid with sub-stoichiometric additives" 246th ACS National Meeting, Indianapolis, IN; September, **2013**, INOR-165, poster.

21. Byers, Jeffery A.; Drake, Jessica L.; Manna, Cesar M.; Vasilopoulos, Aristidis "Catalytic activity for carbon dioxide hydrogenation reactions promoted by sub-stoichiometric additives" 246th ACS National Meeting, Indianapolis, IN; September 8, **2013**, INOR-41, oral presentation.

20. Biernesser, Ashley B.; Drake, Jessica L.; Manna, Cesar; Vasilopolous, Aristidis; Li, Bo; Byers, Jeffery A. "Redox Switchable Lactide Polymerization Using Bis(imino)pyridine Iron Bis(alkoxide) Catalysts" and "Enhanced Rates for Carbon Dioxide Hydrogenation Using Substoichiometric Additives". 36th Organometallics Gordon Research Conference, Newport, RI: July, **2013**, poster.

19. Kaplan, H. Z.; Byers, Jeffery A. "Reconsidering Metal−NHC Bonding: Synthesis and Characterization of Bis(imino)-N-heterocyclic Carbene Complexes of Iron". 36th Organometallics Gordon Research Conference, Newport, RI: July, **2013**, poster.

18. Byers, Jeffery A.; Drake, Jessica L.; Manna, Cesar. "N-Heterocyclic Carbene Promoters for the Hydrogenation of Carbon Dioxide to Formic Acid". Inorganic Reaction Mechanisms Gordon Research Conference, Galveston, TX; March, **2013**, poster.

17. Reiner, Benjamin R.; Wojnar, Michael K.; Heusser, Carolyn A.; Byers, Jeffery A. "Ruthenium-catalyzed Brook rearrangements for the rapid assembly of complex small molecules". 245th ACS National Meeting, New Orleans, LA; April, **2013**, CHED-1173.

16. Byers, Jeffery A.; Kaplan, Hilan Z. "Non-noble metal polymerization catalysts for under-developed copolymerization reactions". 244th ACS National Meeting, Philadelphia, PA; August, **2012**, INOR-123, oral presentation.

15. Kaplan, Hilan J.; Byers, Jeffery A. "Development of non-nobel metal catalysts bearing diimino-N-heterocyclic carbene ligands for olefin polymerization". 244th ACS National Meeting, Philadelphia, PA; August, **2012**, INOR.

14. Byers, Jeffery A.; Kaplan, Hilan Z. "Towards Iron Complexes as Catalysts for Under-developed Copolymerization Reactions". 35th Organometallics Gordon Research Conference, Newport, RI; July, **2012**, poster.

13. Byers, Jeffery A.; Jamison, Timothy F. "Mechanistic investigations into the role of water in regioselective epoxy alcohol cyclizations in aqueous media". 240th ACS National Meeting, Boston, MA; August, **2010**, ORGN-135, oral presentation.

12. Byers, Jeffery A.; Jamison, Timothy F. "Nickel-Catalyzed Reductive Coupling of Alkynes and α-Oxygenated Epoxides". 33rd Organometallics Gordon Research Conference, Newport, RI; July, **2010**, poster.

11. Byers, Jeffery A.; Bercaw, John E. "Kinetic resolution of α-olefins using C_1 and C_2-symmetric zirconocene polymerization catalysts". 234th ACS National Meeting, Boston, MA; August, **2007**, AEI-060, poster.

10. Byers, Jeffery A.; Bercaw, John E. "Synthesis of optically active C_2-symmetric zirconocenes and their use for the kinetic resolution of α-olefins by polymerization catalysis". 232nd ACS National Meeting, San Fransisco, CA; September, **2006**, INOR-954, oral presentation.

9. Bercaw, John E.; Klamo, Sara B.; Byers, Jeffery A.; Min, Endy Y. J. "Olefin polymerizations with zirconium catalysts: Kinetics and kinetic resolution of chiral α-olefins". 231st ACS National Meeting, Atlanta, GA; March, **2006**, BMGT-012.

8. Bercaw, John E.; Baldwin, Stephen M.; Byers, Jeffery A.; Klamo, Sara B.; Min, Endy "Polymerization of α-olefins with zirconium catalysts: Kinetics and kinetic resolutions". 229th ACS National Meeting, San Diego, CA; March, **2005**, INOR-012.

7. Bercaw, John E.; Baldwin, Stephen M.; Byers, Jeffery A.; Klamo, Sara B.; Min, Endy "Polymerization of α-olefins with zirconium catalysts: Kinetics and kinetic resolutions". 229th ACS National Meeting, San Diego, CA; March, **2005**, INOR-012.

6. Byers, Jeffery A.; Bercaw, John E. "Kinetic resolution of racemic 1-alkenes using chiral zirconocene polymerization catalysts: Chain end control vs. enantiomorphic site control". 228th ACS National Meeting, Philadelphia, PA; August, **2004**, INOR-713, oral presentation.

5. Wooley, Karen L.; Bolton, Daniel H.; Byers, Jeffery; Gan, Daoji; Goetz, Jon; Poliks, Barbara; Schaefer, Jacob. "The synthesis and study of isomeric linear and hyperbranched polycarbonates" 225th ACS National Meeting, New Orleans, LA; March, **2003**, POLY-703.

4. Wooley, Karen L.; Mashburn, Courtney D.; Bolton, Daniel H.; Byers, Jeffery. "Synthesis and architectural investigation of hyperbranched polycarbonates" 219th ACS National Meeting, San Francisco, CA, March, **2000**, CHED-450.

3. Byers, Jeffery A.; Wooley, Karen L. "On Equal Grounds: Comparison of Compositionally Equivalent Linear and Hyperbranched Polycarbonates". Waldo Semon Undergraduate Research Award Symposium; October, **1999**, oral presentation.

2. Byers, Jeffery A.; Bolton, Daniel H.; Wooley, Karen L. "On Equal Grounds: Comparison of Poly(bisphenol A) Carbonate to its Compositionally Equivalent Linear Analog". PEW Midstates Science and Mathematics Consortium Undergraduate Research Symposium in Mathematics and the Physical Sciences; November, **1998**, poster.

1. Byers, Jeffery A.; Morris, Richard, V. "Rusty Relics: Effects of Chemical Weathering on Optical Spectra". 14th Lunar Planetary Summer Intern Conference, Houston, TX; August, **1998**, oral presentation.

Service

Departmental/Institutional Service

- Graduate Studies Committee (2012-present)
- Instrument Committee (2013-present); Chairperson (2019-2020)
- Graduate Admissions Committee (2011-2014)
- Safety Committee (2018-present); Chairperson (2018-presnet)
- Chemistry Faculty Search Committee (2011-2012, 2013-2020 (ad-hoc), 2021)
- Undergraduate Studies Committee (ad-hoc)
- McCarthy Prize Committee member (2018)
- Earth and Environmental Sciences Faculty Search Committee, external member (2018-2019).
- Department of Chemistry Chair's Steering Committee (2019-present)

External Service

Journal Refereeing

- Science
- Journal of the American Chemical Society
- Angewandte Chemie, International Edition
- Chemical Science
- Chemistry, A European Journal
- ACS Catalysis
- Organometallics
- Chemical Communications
- Inorganic Chemistry
- Accounts of Chemical Research
- Polyhedron
- Dalton Transactions
- Journal of Physical Chemistry
- Journal of Polymer Science, Part A
- Comments on Inorganic Chemistry
- Organic Processes Research and Development
- ACS Applied Materials and Interfaces

Grant Refereeing

- ACS, Petroleum Research Fund, *2013-present*
- Army Research Office, *2014-present*
- Research Corporation for Science Advancement, *2015-present*
- National Science Foundation, *2014-present*
- Department of Energy (ad-hoc), *2014-present*

- Department of Energy, LBNL Catalysis program review, *2020*

Local, National, and Professional Meeting Organization

- Participant in the Department of Energy Basic Energy Science Roundtable on Chemical Upcycling of Polymers, Washington DC, *April 30-May 1, 2019.*
- Organizer of the 48th Boston Regional Inorganic Colloquium, Chestnut Hill, MA, *March 2, 2019*.
- Organizing Committee Member for BORAM XVI, Chestnut Hill, MA, *June 26-30, 2018.*
- Co-PI (with Laura Anne Lowry) for the Beckman Scholars program at Boston College, *2018-2021.*
- Co-Organizer (with Paula Diaconescu, UCLA) for "Switchable Catalysis" symposium at 253rd ACS National Meeting, San Fransisco, CA, *April 2-6, 2017*.
- Session chair for American Chemical Society National Meetings, *2013-present*.
- Session chair for Boston Symposium on Organic & Bioorganic Chemistry, *2013*.
- Organizer for "Supergroup" Meetings that take place between research groups from assistant/associate professors in the Boston area, *2012-present*.
- Vice-Chair Organometallics Gordon Research Seminar, *July 2012*.

Outreach and Education

- Co-creator of "Catalyzing eXploration in Chemistry (CXC)" in collaboration with the NSF Center for Integrated Catalysis. The CXC program is a remote program for high school Freshman and Sophomores designed to engage in a genuine research experience in the areas of sustainable plastics and renewable energy, *2021-present.*
- Collaborating with Jane Wissinger (U. Minnesota) to develop new lab activities that promote the use of sustainable polymers, *2017-present.*
- Co-founder of "Paper to Plastics", an interdisciplinary summer research program for high school students. This program provides high school students (particularly those underrepresented in STEM disciplines) the opportunity to undertake a research project converting cellulose in used office paper to the biodegradable polymer, poly(lactic acid). This program has been active since the Summer of 2012 and has enrolled >70 high school students in total, *2012-present*.
- Co-creator (with Jennifer Roizen, Duke) of BC-Duke Organic Chemistry Challenge, a weekly interactive competition between students in organic chemistry at Boston College and Duke designed to promote a more interactive classroom. This program was presented at the Cottrell Scholars conference, which resulted in further funding from Research Corporation to make the competition a nation-wide competition, *2015-2019.*
- Inventor of "Symm-Lab", an iPad application designed to teach students about molecular symmetry, *2017*.
- Presenter for family days at the American Academy for the Advancement of Science (AAAS) National Meeting, *January 2013*.
- Hoover School Science Fair: Served as judge and carried out scientific demonstrations illustrating principles of germane to catalysis and polymer chemistry, *2012-2014*.
- Presenter at the Center for Talented Youth, Boston College, *2014*.
- Participant in academic career panel at M.I.T., *2015*.

- Participated in several symposia at National American Chemical Society meetings to promote STEM education, *2014-present*.

Current Collaborators

Paula Diaconescu (University of California at Los Angeles) – NSF-CIC
Loi Do (University of Houston) – NSF-CIC
Chong Liu (University of California at Los Angeles) – NSF-CIC
John Matson (Virginia Tech)
Alexander Miller (University of North Carolina, Chapel Hill) – NSF-CIC
Michael Neidig (University of Rochester)
Jia Niu (Boston College)
Natalia Shustova (University of South Carolina)
Dunwei Wang (Boston College) – NSF-CIC
Jane Wissinger (University of Minnesota)
Yuan Yao (Yale University)
Mingjiang Zhong (Yale University)

Postdoctoral Scholars (4)

current: none

past (4): Stella Gonsales (postdoctoral fellow, University of Strasbourg), Aman Kaur (Phoenix Chemical, Inc), Cesar Manna (Stratasys Ltd.), Xiaofei Zhang (instructor, Florida Gulf Coast)

Graduate Students (21)

current (4): Connor F. Gallin, Stephanie Johnson, Jiangwei "Eric" Liu, William Thompson.

past (17: 11 Ph. D., 5 M.S.): Adam T. Bensalah (M.S. 2020, joint with Prof. Chia-Kuang Tsung), Ashley B. Biernesser (Ph. D. 2016, NSF-Graduate Research Fellow, La Mattina Fellow in Chemical Synthesis, The Webb Law Firm), Michael P. Crockett (Ph. D. 2020, postdoctoral scholar, Texas A&M), Kayla R. Delle-Chaie (Ph. D. 2018, Senior Scientist, Triton Systems Inc.), Jessica L. Drake (M.S. 2015, Middletown High School), Carolyn Heusser (M.S. 2013, Operations Management Coordinator, Novartis), Marcin Kazmierczak, Teresa M. Mako (M.S. 2017, Ph. D. U. Rhode Island, Chemist, C2Sense Inc), Hilan Z. Kaplan (Ph. D. 2014, La Mattina Fellow in Chemical Synthesis, Director of Knowledge, Knowde), Jeffrey A. Kehl (Ph. D., 2019, Halomine Inc.), Zhehui Li (Ph. D. 2019, joint with Prof. Chia-Kuang Tsung, Patent Specialist, Global Prior Art), Miao Qi (Ph. D. 2020, La Mattina Fellow in Chemical Synthesis, postdoctoral scholar, Texas A&M), Thomas M. Rayder (Ph. D. 2020, joint with Prof. Chia-Kuang Tsung, postdoctoral scholar, Ohio State University), Chet Tyrol (Ph. D. 2021, La Mattina Fellow in Chemical Synthesis, Pfizer Pharmaceuticals), Matthew S. Thompson (Ph. D. 2021, Cornell University), Alexander S. Wong (Ph. D. 2021, Abbvie Pharmaceuticals), Kexing Xiao (M.S. 2022, Akron University).

Undergraduate Students (22)

current (3): Won-Woo "Kyle" Lee, Josh McPherson, Natalia Rivera

past (19): Enric Adillon (B.S., Boston College 2020, Beckman Scholar, graduate student, Caltech), Kelton Beal (B.S., Boston College 2016), Carolina Battle (c/o 2022), Gretchen Brown (B.S., Boston College 2021, graduate student, University of California at Berkeley), Hee "Jason" Choi (Boston College c/o 2022), David Cote (B.S., Boston College 2014, Edward H. Finnegan, SJ, Award, MD Harvard University, neurosurgery resident, Keck Medicine of USC), Julia Curley (B.S. summa cum laude, Boston College 2016, NSF-Graduate Research Fellow, Yale), Audrey Hersman (B.A. Boston College 2019), Matias Horst (B.S. Duke 2018, graduate student, Stanford University), Greg Michalowski (B.S. Boston College 2017), Sewon "Jason" Oh (B.S. Boston College 2020, graduate student, Cornell University), Benjamin Reiner (B.S. Boston College 2013, Ph. D. Ohio State 2018, research scientist, DOW Chemical, Philadelphia, PA), Alexander Sudyn (B.S. Boston College 2018, medical student, Rutgers University), Michael Wojnar (B.S. Boston College 2013, Ph. D. University of California at Irvine 2019, postdoctoral scholar, Massachusetts Institute of Technology), Charlie Wolstenholme (B.S. Boston College 2016, Ph. D. Pennsylvania State University 2020, AR&D, Merck), Justin Wong (B.S. Boston College 2020), Vinou F. Val (Boston College, c/o 2022), Aristidis Vasilopoulos (B.S., Boston College 2015, Ph.D. Wisconsin University 2021, AbbVie), Lauren Yablon (B.S., Boston College 2015, Ph. D. Columbia University 2020, Technology Specialist, Fish and Richardson P.S.), Nang "Nancy" Yone (B.S., Boston College, 2020).