Christopher Uyeda *Curriculum Vitae*

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EDUCATION

2005–2011 **Harvard University, Cambridge, MA**
A.M. Chemistry, May 2008
Ph.D. Chemistry, March 2011

2001–2005 **Columbia University, New York, NY**
B.S. Biomedical Engineering, *summa cum laude*, May 2005

ACADEMIC EXPERIENCE

2022–present **Richard B. Wetherill Professor**
2020–2022 **Richard B. Wetherill Associate Professor**
2019–2020 **Associate Professor**
2013–2019 **Assistant Professor**
Purdue University, Department of Chemistry, West Lafayette, IN

2011–2013 **NSF Center for Chemical Innovation Postdoctoral Fellow**
California Institute of Technology, Department of Chemistry, Pasadena, CA
Research Advisor: Professor Jonas Peters

2005–2010 **Graduate Research Assistant**
Harvard University, Department of Chemistry and Chemical Biology, Cambridge, MA
Research Advisor: Professor Eric N. Jacobsen
Dissertation: Catalysis of the Claisen Rearrangement by Hydrogen-Bond Donors

2002–2005 **Undergraduate Research Assistant**
Columbia University, Chemistry Department, New York, NY
Research Advisor: Professor Ronald Breslow

AWARDS AND HONORS

2021 Korean Chemical Society Emerging Researchers in Organic Chemistry Symposium Speaker
2020 Richard B. Wetherill Term Named Professorship
2019 Lilly Grantee Award
2019 Camille Dreyfus Teacher-Scholar Award
2019 Kavli Fellow
2019 Padwa Lecturer, Columbia University
2018 Purdue Seeds for Success Award
2018 Purdue College of Science Award for Outstanding Contributions to Undergraduate Teaching
2018 Thieme Chemistry Journals Award
2017 ACS Division of Organic Chemistry Young Investigator Symposium Speaker
2017 NIH Maximizing Investigators' Research Award
2016 Alfred P. Sloan Foundation Research Fellowship
2016 NSF CAREER Award
2015 ACS PRF Doctoral New Investigator
2011–2013 NSF Center for Chemical Innovation Postdoctoral Fellowship
2010 Fieser Lecture in the Chemical Sciences, Harvard University
2008 Christensen Prize for Outstanding Research Achievement
2006 Robert B. Woodward Fellow
2005 Tau Beta Pi Engineering Honor Society
2004 Pfizer Synthetic Organic Chemistry Summer Undergraduate Research Fellowship

PUBLICATIONS

*Corresponding author

(49) Berger, K. E.; Martinez, R. J.; Zhou, J. Uyeda, C. "Catalytic Asymmetric Cyclopropanations with Nonstabilized Carbenes." *J. Am. Chem. Soc.* **2023**, *145*, 9441–9446.
[ACS Editors' Choice]

(48) Rybak, C. J.; Andjaba, J. M.; Fan, C.; Zeller, M.; Uyeda, C.* "Dinickel-Catalyzed N=N Bond Rotation." *Inorg. Chem.* **2023**, *62*, 5886–5891.

(47) Wang, Z.; Andjaba, J. M.; Rybak, C.; You, L.; Uyeda, C.*; Mei, J.* "Black-to-Transmissive Dual Polymer Complementary Electrochromics with High Coloration Efficiency." *Chem. Eng. J.* **2023**, *456*, 141013.

(46) Uyeda, C.*; Kalb, A. E. "Catalytic Reductive Carbene Transfer Reactions." *Chem. Catal.* **2022**, *2*, 667–678.

(45) Kalb, A. E.; Liu, M.; Bosso, M. I.; Uyeda, C.* "A Dinickel-Catalyzed Three-Component Cycloaddition of Vinylidenes." *Chem. Sci.* **2022**, *13*, 11190–11196.

(44) Steiman, T. J.; Kalb, A. E.; Coombs, J. C.; Kirkland, J. K.; Torres, H.; Ess, D. H.; Uyeda, C.* "Dinickel-Catalyzed Vinylidene–Alkene Cyclization Reactions." *ACS Catal.* **2021**, *11*, 14408–14416.

(43) Uyeda, C.*; Farley, C. M. "Dinickel Active Sites Supported by Redox-Active Ligands." *Acc. Chem. Res.* **2021**, *54*, 3710–3719.

(42) Andjaba, J. M.; Rybak, C. J.; Wang, Z.; Uyeda, C.* "Catalytic Synthesis of Conjugated Azopolymers from Aromatic Diazides" *J. Am. Chem. Soc.* **2021**, *143*, 3975–3982.

(41) Kang, H.; Uyeda, C.* "Nickel-Catalyzed Vinylidene Insertions into O–H Bonds" *ACS Catal.* **2021**, *11*, 193–198.

(40) Maity, A. K.; Kalb, A. E.; Zeller, M.; Uyeda, C.* "A Dinickel Catalyzed Cyclopropanation without the Formation of a Metal Carbene Intermediate." *Angew. Chem., Int. Ed.* **2021**, *60*, 1897–1902.

(39) Biswas, S.; Pal, S.; Uyeda, C. "Nickel-Catalyzed Insertions of Vinylidenes into Si–H Bonds" *Chem. Commun.* **2020**, *56*, 14175–14178.
[2020 Emerging Investigators Issue]

(38) Powers, I. G.; Andjaba, J. M.; Zeller, M.; Uyeda, C.* "Catalytic C(sp^2)–H Amination Reactions Using Dinickel Imides." *Organometallics* **2020**, *39*, 3794–3801.

(37) Behlen, M. J.; Uyeda, C.* "C_2-Symmetric Dinickel Catalysts for Enantioselective [4 + 1]-Cycloadditions." *J. Am. Chem. Soc.* **2020**, *142*, 17294–17300.

(36) Farley, C. M.; Sasakura, K.; Zhou, Y.-Y.; Kanale, V. V.; Uyeda, C. "Catalytic [5 + 1]-Cycloadditions of Vinylcyclopropanes and Vinylidenes." *J. Am. Chem. Soc.* **2020**, *142*, 4598–4603.

(35) Werth, J.; Berger, K.; Uyeda, C.* "Cobalt Catalyzed Reductive Spirocyclopropanation Reactions." *Adv. Synth. Catal.* **2020**, *362*, 348–352.
[Dedicated to Prof. Eric Jacobsen on the occasion of his 60th birthday]

(34) Farley, C. M.; Uyeda, C.* "Organic Reactions Enabled by Catalytically Active Metal–Metal Bonds." *Trends in Chemistry* **2019**, *1*, 497–509.
[Invited Review: Special Issue on Transition Metal Catalysis]

(33) Adolph, C. M.; Lee, S. A.; Uyeda, C.* "Dinickel Catalyzed Carbonylation Reactions Using Metal Carbonyl Reagents as CO Sources." *Tetrahedron* **2019**, *75*, 3336–3340.
[Invited Contribution: Ryan Shenvi Tetrahedron Award Issue]

(32) Zhou, Y.-Y.; Uyeda, C.* "Catalytic Reductive [4 + 1]-Cycloadditions of Vinylidenes and Dienes." *Science* **2019**, 363, 857–862.

[Highlight in Synpacts by M. Lautens and E. Larin]
[Perspective in Science by K. Johnson and D. Weix]
[News Article in C&E News (Vol. 97, Issue 8)]

(31) Farley, C. M.; Zhou, Y.-Y.; Banka, N.; Uyeda, C.* "Catalytic Reductive Cyclopentanations of Enones." *J. Am. Chem. Soc.* **2018**, *140*, 12710–12714.
[Selected as an ACS Editor's Choice Article]

(30) Werth, J.; Uyeda, C.* "Transition Metal Catalyzed Reductive Dimethylcyclopropanations of 1,3-Dienes." *Angew. Chem., Int. Ed.* **2018**, *57*, 13902–13906.
[Highlight in Synpacts by P. Knochel and D. Ziegler]

(29) Maity, A. K.; Zeller, M.; Uyeda, C.* "Carbene Formation and Transfer at a Dinickel Active Site." *Organometallics* **2018**, *37*, 2437–2441.

(28) Powers, I. G.; Andjaba, J. M.; Luo, X.; Mei, J.; Uyeda, C.* "Catalytic Azoarene Synthesis by a Dinuclear Ni Complex" *J. Am. Chem. Soc.* **2018**, *140*, 4110–4118.

(27) Rounds, H. R.; Zeller, M.; Uyeda. C.* "Dinuclear Pathways for the Activation of Strained Three-Membered Rings" *Organometallics*, **2018**, *37*, 545–550.

(26) Werth, J.; Uyeda, C.* "Regioselective Simmons–Smith-Type Cyclopropanations of Polyalkenes Enabled by Transition Metal Catalysis" *Chem. Sci.* **2018**, *9*, 1604–1609.
[Highlight in Synpacts by P. Knochel and D. Ziegler]

(25) Hartline, D. R.; Zeller, M.; Uyeda, C.* "Catalytic Carbonylative Rearrangement of Norbornadiene via Dinuclear Carbon–Carbon Oxidative Addition" *J. Am. Chem. Soc.* **2017**, *139*, 13672–13675.

(24) Pal, S.; Zhou, Y.-Y.; Uyeda, C.* "Catalytic Reductive Vinylidene Transfer Reactions" *J. Am. Chem. Soc.* **2017**, *139*, 11686–11689.

(23) Kwon, D.-H.; Proctor, M.; Mendoza, S.; Uyeda, C.; Ess, D. H.* "Catalytic Dinuclear Nickel Spin Crossover Mechanism and Selectivity for Alkyne Cyclotrimerization" *ACS Catal.* **2017**, *7*, 4796-4804.

(22) Steiman, T. J.; Uyeda, C. "Dinickel, 1,1(-(1,8-Naphthyridine-2,7-diyl)bis[N-(2,6-diisopropylphenyl)ethan-1-imine](benzene)" *e-EROS* **2017**.

(21) Adolph, C. M.; Werth, J.; Selvaraj, R; Wegener, E. C.; Uyeda, C.* "Dehydrogenative Transformations of Imines Using a Heterogeneous Photocatalyst" *J. Org. Chem*. **2017**, *82*, 5959–5965.

(20) Powers, I. G.; Kiattisewee, C.§; Mullane, K. C.; Schelter, E. J.; Uyeda, C.* "A 1,2-Addition Pathway for C(sp^2)–H Activation at a Dinickel Imide" *Chem. Eur. J.* **2017**, *23*, 7694–7697.

(19) Powers, I. G.; Uyeda, C.* "Metal–Metal Bonds in Catalysis." *ACS Catal.* **2017**, *7*, 936–958.

(18) Behlen, M. J.; Zhou, Y.-Y.; Steiman, T. J.; Pal, S.; Hartline, D. R.; Zeller, M.; Uyeda, C.* "Dinuclear Oxidative Addition Reactions Using an Isostructural Series of Ni_2, Co_2, and Fe_2 Complexes." *Dalton Trans.* **2017**, *46*, 5493–5497.
[Invited contribution to a themed issue "Multimetallic Complexes: Synthesis and Applications"]

(17) Hartline, D. R.; Uyeda, C.* "Well-Defined Models for the Elusive Dinuclear Intermediates of the Pauson–Khand Reaction." *Angew. Chem., Int. Ed.* **2016**, *55*, 6084–6087.

(16) Zhou, Y.-Y.; Uyeda, C.* "Reductive Cyclopropanations Catalyzed by Dinuclear Nickel Complexes." *Angew. Chem., Int. Ed.* **2016**, *55*, 3171–3175.

(15) Uyeda, C.*; Steiman, T. J.; Pal, S. "Catalytically Active Nickel–Nickel Bonds Using Redox-Active Ligands." *Synlett* **2015**.

(14) Pal, S.; Uyeda, C.* "Evaluating the Effect of Catalyst Nuclearity in Ni-Catalyzed Alkyne Cyclotrimerizations." *J. Am. Chem. Soc.* **2015**, *137*, 8042–8045.

(13) Steiman, T. J.; Uyeda, C.* "Reversible Substrate Activation and Catalysis at an Intact Metal–Metal Bond Using a Redox-Active Supporting Ligand." *J. Am. Chem. Soc.* **2015**, *137*, 6104–6110.

(12) Zhou, Y.-Y.; Hartline, D. R.; Steiman, T. J.; Fanwick, P. E.; Uyeda, C.* "Dinuclear Nickel Complexes in Five States of Oxidation Using a Redox-Active Ligand." *Inorg. Chem.* **2014**, *53*, 11770–11777.

(11) Huo, P.; Uyeda, C.; Goodpaster, J. D.; Peters, J. C.; Miller III, T. F. "Breaking the Correlation between Energy Costs and Kinetic Barriers in Hydrogen Evolution via a Cobalt Pyridine-Diimine-Dioxime Catalyst." *ACS Catal.* **2016**, *6*, 6114–6123.

(10) Uyeda, C.; Peters, J. C.* "Selective Nitrite Reduction at Heterobimetallic CoMg Complexes." *J. Am. Chem. Soc.* **2013**, *135*, 12023–12031.

(9) Uyeda, C.; Tan, Y.; Fu, G. C.*; Peters, J. C.* "A New Family of Nucleophiles for Photoinduced, Copper-Catalyzed Cross-Couplings via Single-Electron Transfer: Reactions of Thiols with Aryl Halides under Mild Conditions (0 °C)." *J. Am. Chem. Soc.* **2013**, *135*, 9548–9552.

(8) Brown, A. R.; Uyeda, C.; Brotherton, C. A.; Jacobsen, E. N.* "Enantioselective Thiourea-Catalyzed Intramolecular Cope-Type Hydroamination." *J. Am. Chem. Soc.* **2013**, *135*, 6747–6749.

(7) Uyeda, C.; Peters, J. C.* "Access to Formally Ni(I) States in a Heterobimetallic NiZn System." *Chem. Sci.* **2013**, *4*, 157–163.

(6) McCrory, C. C. L.§; Uyeda, C.§; Peters, J. C.* "Electrocatalytic Hydrogen Evolution in Acidic Water with Molecular Cobalt Tetraazamacrocycles." *J. Am. Chem. Soc.* **2012**, *134*, 3164–3170. (§Equal Contributions)

(5) Uyeda, C.; Jacobsen, E. N.* "Transition State Charge Stabilization through Multiple Non-Covalent Interactions in the Guanidinium-Catalyzed Enantioselective Claisen Rearrangement." *J. Am. Chem. Soc.* **2011**, *133*, 5062–5075.

(4) Uyeda, C.; Rötheli, A. R.; Jacobsen, E. N.* "Catalytic Enantioselective Claisen Rearrangements of *O*-Allyl β-Ketoesters." *Angew. Chem. Int. Ed.* **2010**, *122*, 9947–9950.

(3) Uyeda, C.; Jacobsen, E. N.* "Enantioselective Claisen Rearrangements with a Hydrogen-Bond Donor Catalyst." *J. Am. Chem. Soc.* **2008**, *130*, 9228–9229.

(2) Uyeda, C.; Biscoe, M. R.; LePlae, P.; Breslow, R.* "Hydrophobically Directed Selective Reduction of Ketones using Amine Boranes." *Tetrahedron Lett.* **2005**, *47*, 127–130.

(1) Biscoe, M. R.; Uyeda, C.; Breslow, R.* "Requirements for Selective Hydrophobic Acceleration in the Reduction of Ketones." *Org. Lett.* **2004**, *6*, 4331–4334.

Patents

(1) Mei, J.; Uyeda, C.; Andjaba, J.; Rybak, C. "Conjugated Polymers Made from Aromatic Azides and Methods for Making Same." US-11692064-B2, Publication Date: July 4, 2023.

INVITED LECTURES

73. Massachusetts Institute of Technology, Cambridge, MA; Feb. 2024
72. Yale University, New Haven, CT; Nov. 2023
71. Merck Process Chemistry, Rahway, NJ, Aug. 2023
70. ACS National Meeting (Advances in Carbene Chemistry) San Francisco, CA; Aug. 2023
69. International Symposium on Carbene and Nitrene Chemistry, Amsterdam, Netherlands; July 2023
68. Utrecht University, Utrecht, Netherlands; July 2023
67. Institut Català d'Investigació Química, Tarragona, Spain; July 2023
66. Corteva, Indianapolis, IN; June 2023
65. Canadian Chemistry Conference and Exhibition (Synthesis of Complex Molecules North and South of the Border) Vancouver, CA; June 2023

64. ACS National Meeting (Theoretical and Experimental Approaches to Catalyst Development) Indianapolis, IN; March 2023
63. ACS National Meeting (Green Chemistry and Engineering: Designing and Discovering Innovative Solutions to Achieve a Sustainable Future) Indianapolis, IN; March 2023
62. Harvard University, Cambridge, MA; Feb. 2023
64. Duke University, Durham, NC; Jan. 2023
63. Winter In-Person Organic Symposium (WIPOS), Honolulu, HI; Dec. 2022
62. Shanghai University, China; Nov. 2022 (Virtual)
61. California Institute of Technology, Pasadena, CA; April 2022
60. Auburn University, Auburn, AL; Sept. 2021
59. Eli Lilly Grantee Symposium, Indianapolis, IN; Sept. 2021 (Virtual)
58. Imperial College, London, UK; April 2021 (Virtual)
57. Korean Chemical Society Meeting; *Emerging Researchers in Organic Chemistry Symposium*; April 2021 (Virtual)
56. Bristol-Myers Squibb, Lawrenceville, NJ, New Brunswick, NJ; Feb. 2021 (Virtual)
55. University of Pennsylvania, Philadelphia, PA; March 2021 (Virtual)
54. Virginia Tech, Blacksburg, VA; Feb. 2021 (Virtual)
53. Gilead, Foster City, CA; Dec. 2020 (Virtual)
52. Brandeis University, Waltham, MA; Nov. 2020 (Virtual)
51. Scripps Research Institute, La Jolla, CA; Nov. 2019
50. Loyola University Chicago, Chicago, Il; Oct. 2019
49. Baylor University, Waco, TX; Sept. 2019
48. Texas A&M, College Station, TX; Sept. 2019
47. University of Houston, Houston, TX; Sept. 2019
46. ACS National Meeting (Emerging Research in Molecular Synthesis and Catalysis) San Diego, CA; Aug. 2019
45. Gordon Research Conference (Inorganic Reaction Mechanisms) Galveston, TX; March 2019
44. Columbia University, New York, NY; *Padwa Lecture*; Jan. 2019
43. ExxonMobil, Baytown, TX; Nov. 2018
42. Merck Process Chemistry, Rahway, NJ; Nov. 2018
41. Boston College, Boston, MA; Oct. 2018
40. University of Wisconsin–Madison, WI; Sept. 2018
39. University of California–Berkeley, CA; Sept. 2018
38. University of Arizona, Tucson, AZ; Aug. 2018
37. ACS National Meeting (Symposium honoring Prof. Tianning Diao, Organometallics Distinguished Author Symposium); Boston, MA; Aug. 2018
36. Eli Lilly; Indianapolis, IN; July 2018
35. University of Chicago, Chicago, IL; May 2018
34. Stanford University, Palo Alto, CA; May 2018
33. Indiana University, Indianapolis, IN; April; 2018
32. University of North Carolina–Chapel Hill; April 2018
31. Ohio State University, OH; March 2018
30. University at Buffalo, NY; March 2018
29. University of Illinois–Urbana Champagne, IL; Feb. 2018
28. University of California–Santa Barbara, CA; Feb. 2018
27. University of California–Irvine, CA; Feb. 2018
26. University of Southern California, Los Angeles, CA; Feb. 2018
25. Michigan State University, East Lansing, MI; Feb. 2018
24. University of Minnesota, Minneapolis, MN; Jan. 2018
23. Brigham Young University, Provo, UT; Jan. 2018
22. Indo–US Bilaterial Meeting on Organometallic Chemistry, India; Dec. 2017
21. Indian Institute of Technology–Bombay, India; Dec. 2017
20. International Seminar for Young Chemists on Precisely Designed Catalysts, Japan; Nov. 2017
19. Osaka University, Japan; Nov. 2017
18. Kyoto University, Japan; Nov. 2017
17. University of Tokyo, Japan; Nov. 2017
16. University of Rochester, Rochester, NY; Oct. 2017
15. New York University, New York, NY; Oct. 2017
14. Princeton University, Princeton, NJ; Sept. 2017
13. ACS National Meeting; *Division of Organic Chemistry Young Investigator Symposium*; Washington, D.C.; Aug. 2017
12 Gordon Research Conference (Organic Reactions and Processes) Stonehill College, MA; July, 2017

11. ACS Green Chemistry and Engineering Conference (Making Our Way to a Sustainable Tomorrow); Washington, DC; April 2017
10. University of California–Riverside, Riverside, CA; April 2017
9. Gordon Research Conference (Inorganic Reaction Mechanisms) Short Talk, Galveston, TX; March 2017
8. Emory University, Atlanta, GA; Feb. 2017
7. Gordon Research Conference (Organometallics) Short Talk, Salve Regina, RI; July 2016
6. Dow AgroSciences, Indianapolis, IN; May 2016
5. ACS Central Regional Meeting (Frontiers in Organometallic Chemistry Symposium); Covington, KY; May 2016
4. ACS National Meeting (Alpha Olefins Symposium); San Diego, CA; March 2016
3. Eastern Illinois University, Charleston, IL; Nov. 2015
2. Ball State University, Muncie, IN; Feb. 2015
1. University of Texas at El Paso, El Paso, TX; Oct. 2014

PROFESSIONAL ACTIVITIES

2023	Symposium Chair; "Advances in Carbene Chemistry" ACS National Meeting; San Francisco, CA
2023	Discussion Leader, Organometallics GRC
2022–present	Associate Editor; *Science Advances*
2022–present	Consultant; Pfizer Process Chemistry Commercialization of our cyclopropanation reaction for the synthesis of Nirmatrelvir (for details, see: *ACS Cent. Sci.* **2023**, *9*, 849–857)
2021–present	Faculty Mentor for the Purdue Emerging Leader Science Scholar (ELSS) Program (program promoting excellence in high-performing students from underrepresented minority groups)
2017–2019	Summer Science Program (presented guest lectures on the organic chemistry of drug discovery to groups of high school students)
2014–2019	Served as a research mentor for local high school students through ACS Project SEED and my NSF CAREER award (CHE-1554787)
2018	Inorganic Chemistry GRS, Discussion Leader and Career Panelist'
2014–2017	Soybean Product Innovation Competition, Faculty Mentor

Manuscript Reviewer: >30 scientific journals

Grant Reviewer (Panels and ad hoc): NIH NIGMS Chemical Synthesis and Biosynthesis (CSB) Panel, NSF CAREER Program, NSF Catalysis Program, ACS PRF DNI and ND Programs, DOE BES Catalysis Program, Deutsche Forschungsgemeinschaft (German Research Foundation)

Industry Consulting and Research Visits: Dow AgroSciences, Eli Lilly, Merck Process Chemistry, ExxonMobil Chemical Company, Gilead Process Chemistry, Bristol Myers Squibb

Purdue University:

2023–present	Area Promotions Committee, Member
2022–present	Department of Chemistry Organic Chemistry Disciplinary Research Group, Chair
2022–present	Graduate Recruiting Committee, Chair
2021–present	Department Mental Health Committee, Member
2016–present	Service Course Committee, Member
2022	H.C. Brown Symposium, Chair
2019–2020	Inorganic Junior Faculty Search Committee, Chair
2019	College of Science Undergraduate Career Panel, Panelist
2018–2019	Inorganic Senior Faculty Search Committee, Chair
2017–2018	Organic Faculty Search Committee, Member
2014–2015	H.C. Brown Graduate Research Award Committee
2013–2016	Diversity Implementation Committee
2013–2019	H.C. Brown Symposium, Session Chair