Sharon R. Neufeldt

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CURRENT POSITION

Associate Professor — 2023–present
Montana State University — Bozeman, MT

PREVIOUS POSITIONS

Assistant Professor — 2016–2023
Montana State University — Bozeman, MT

Cram Teacher-Scholar Postdoctoral Fellow — 2013–2016
University of California, Los Angeles — Los Angeles, CA
Advisor: Professor Kendall N. Houk

Postdoctoral Scholar — 2013
California Institute of Technology — Pasadena, CA
Advisor: Professor Rustem F. Ismagilov

EDUCATION

Ph.D. in Chemistry — 2007–2013
University of Michigan — Ann Arbor, MI
Advisor: Professor Melanie S. Sanford
Thesis title: Pd-Catalyzed Ligand-Directed C—H and C=C Bond Functionalization

B.S. *summa cum laude* in Chemistry — 2003–2006
Northern Arizona University — Flagstaff, AZ
Advisors: Professors Clinton F. Lane and Marin S. Robinson

AWARDS AND HONORS

MIRA Award, NIH	2020
Cottrell Scholar Award, Research Corporation for Science Advancement	2020
Thieme Chemistry Journals Award	2020
CAREER Award, NSF	2019
Hanson-Dow Teaching Award, UCLA	2015
Dan Su Travel Award, ACS	2015
Cram Teacher-Scholar Fellowship, UCLA	2013
Research Excellence Award, UM	2012
University Regents Award, UM	2007
McAlister Outstanding Senior Award, NAU	2006
College of Engineering & Natural Sciences Outstanding Senior Award, NAU	2006
Alumni Association Distinguished Scholar Award, NAU	2006
Vesto M. Slipher Award, NAU	2005
Hooper Undergraduate Research Fellowship, NAU	2004
Provost's Scholarship, NAU	2003
National Merit Scholarship	2003

INDEPENDENT PUBLICATIONS

18. Sloane, S. E.; Vang, Z. P.; Nelson, G.; Qi, L.; Sonstrom, R. E.; Alansari, I. Y.; Behlow, K. T.; Pate, B. H.*; Neufeldt, S. R.*; Clark, J. R.* Precision Deuteration Using Cu-Catalyzed Transfer Hydro-deuteration to Access Small Molecules Deuterated at the Benzylic Position. *JACS Au* **2023**, *3,* 1583-1589. DOI: 10.1021/jacsau.3c00053

17. Ibsen, G. M.; Menezes da Silva, V. H.; Pettigrew, J. C.; Neufeldt, S. R.* Triflate-Selective Suzuki Cross-Coupling of Chloro- and Bromoaryl Triflates Under Ligand-Free Conditions. *Asian J. Chem.* **2023**, *18*, e202300036. DOI: 10.1002/asia.202300036

16. Rehbein, S. M.; Kania, M. J.; Neufeldt, S. R.* $C_{(sp3)}$–H Oxidative Addition at Tantalocene Hydrides. *Organometallics* **2023**, *42*, 1179–1189. DOI: 10.1021/acs.organomet.2c00672

15. Norman, J. P.; Neufeldt, S. R.* The Road Less Traveled: Unconventional Site Selectivity in Pd-Catalyzed Cross-Couplings of Dihalogenated Heteroarenes. *ACS Catalysis* **2022**, *12*, 12014-12026. DOI: 10.1021/acscatal.2c03743

14. Norman, J. P.; Larson, N. G.; Neufeldt, S. R.* Different Oxidative Addition Mechanisms for 12- and 14-Electron Palladium(0) Explain Ligand-Controlled Divergent Site Selectivity. *ACS Catalysis* **2022**, *12*, 8822-8828. DOI: 10.1021/acscatal.2c01698 (highlighted in OPR&D, 10.1021/acs.oprd.2c00334)

13. Norman, J. P.; Larson, N. G.; Entz, E. D.; Neufeldt, S. R.* Unconventional Site-Selectivity in Palladium-Catalyzed Cross-Couplings of Dichloroheteroarenes under Ligand-Controlled and Ligand-Free Systems. *J. Org. Chem.* **2022**, *87*, 7414-7421. DOI: 10.1021/acs.joc.2c00665

12. Elias, E. K.; Rehbein, S. M.; Neufeldt, S. R.* Solvent coordination to palladium can invert the selectivity of oxidative addition. *Chem. Sci.* **2022**, *13*, 1618-1628. DOI: 10.1039/D1SC05862B (highlighted as *Chem. Sci.* Pick of the Week in January 2022)

11. Humke, J. N.; Daley, R. S.; Morrenzin, A. S.; Neufeldt, S. R.*; Topczewski, J. J.* Combined Experimental and Computational Mechanistic Investigation of the Palladium-Catalyzed Decarboxylative Cross-Coupling of Sodium Benzoates with Chloroarenes. *J. Org. Chem.* **2021**, *86*, 11419-11433. DOI: 10.1021/acs.joc.1c00910

10. Rehbein, S. M.; Kania, M. J.; Neufeldt, S. R.* Experimental and Computational Evaluation of Tantalocene Hydrides for C—H Activation of Arenes. *Organometallics* **2021**, *40*, 2666–2677. DOI: 10.1021/acs.organomet.1c00308

9. Daley, R. S.; Morrenzin, A. S.; Neufeldt, S. R.*; Topczewski, J. J.* Mechanistic Investigation into the Gold Catalyzed Decarboxylative Cross-Coupling of Iodoarenes. *ACS Catalysis* **2021**, *11*, 9578–9587. DOI: 10.1021/acscatal.1c01631

8. Russell, J. E. A.; Neufeldt, S. R.* C–O-Selective Cross-Coupling of Chlorinated Phenol Derivatives. *Synlett* **2021**, *32*, 1484-1491. DOI: 10.1055/a-1503-6330

7. Reeves, E. K.; Entz, E. D.; Neufeldt, S. R.* Chemodivergence Between Electrophiles in Cross-Coupling Reactions. *Chem. Eur. J.* **2021**, *27*, 6161–6177. DOI: 10.1002/chem.202004437

6. Entz, E. D.; Russell, J. E. A.; Hooker, L. V.; Neufeldt, S. R.* Small Phosphine Ligands Enable Selective Oxidative Addition of Ar−O over Ar−Cl Bonds at Nickel(0). *J. Am. Chem. Soc.* **2020**, *142*, 15454–15463. DOI: 10.1021/jacs.0c06995 (featured on *JACS* "most read" list in September 2020)

5. Daley, R. S.; Morrenzin, A. S.; Neufeldt, S. R.*; Topczewski, J. J.* Gold Catalyzed Decarboxylative Cross-Coupling of Iodoarenes. *J. Am. Chem. Soc.* **2020**, *142*, 13210–13218. DOI: 10.1021/jacs.0c06244

4. Reeves, E. K.; Bauman, O. R.; Mitchem, G. B.; Neufeldt, S. R.* Solvent Effects on the Selectivity of Palladium-Catalyzed Suzuki-Miyaura Couplings. *Isr. J. Chem.* **2020**, *60*, 406–409. DOI: 10.1002/ijch.201900082

3. Reeves, E. K.; Humke, J. N. Neufeldt, S. R.* *N*-Heterocyclic Carbene Ligand-Controlled Chemodivergent Cross Coupling. *J. Org. Chem.* **2019**, *84*, 11799–11812. DOI: 10.1021/acs.joc.9b01692 (featured on *J. Org. Chem.* "most read" list in October 2019, highlighted in *OPR&D* 10.1021/acs.oprd.9b00465, and highlighted in the February 11, 2020 ACS Virtual Issue "Celebrating Women in Organic Chemistry" https://pubs.acs.org/page/vi/women-organic-chemistry-2020)

2. Russell, J. E. A.; Entz, E. D.; Joyce, I. M.; Neufeldt, S. R.* Nickel-Catalyzed Stille Cross Coupling of C—O Electrophiles. *ACS Catalysis*, **2019**, *9*, 3304–3310. DOI: 10.1021/acscatal.9b00744 (featured on *ACS Catalysis* "most read" list in April 2019)

1. Hooker, L. V.; Neufeldt, S. R.* Ligation state of nickel during C—O bond activation with monodentate phosphines. *Tetrahedron*, **2018**, *74*, 6717–6725. DOI: 10.1016/j.tet.2018.10.025

MENTORED PUBLICATIONS

13. Neufeldt, S. R.; Jiménez-Osés, G.; Huckins, J. R.; Thiel, O. R.; Houk, K. N. Pyridine N-Oxide vs. Pyridine Substrates for Rh(III)-Catalyzed Oxidative C–H Bond Functionalization. *J. Am. Chem. Soc.* **2015**, *137*, 9843–9854.

12. Neufeldt, S. R.; Jiménez-Osés, G.; Comins, D. L.; Houk, K. N. A Twist on Facial Selectivity of Hydride Reductions of Cyclic Ketones: Twist-Boat Conformers in Cyclohexanone, Piperidone, and Tropinone Reactions. *J. Org. Chem.* **2014**, *79*, 11609–11618. DOI: 10.1021/jo5022635

11. Seigerman, C. K.; Micyus, T. M.; Neufeldt, S. R.; Sanford, M. S. Palladium-Catalyzed C–H Arylation Using Aryltrifluoroborates in Conjunction with a Mn(III) Oxidant under Mild Conditions. *Tetrahedron* **2013**, *69*, 5580–5587.

10. Neufeldt, S. R.; Seigerman, C. K.; Sanford, M. S. Mild Palladium-Catalyzed C–H Alkylation Using Potassium Alkyltrifluoroborates in Combination with MnF_3. *Org. Lett.* **2013**, *15*, 2302–2305.

9. Neufeldt, S. R.; Sanford, M. S. Asymmetric Chiral Ligand-Directed Alkene Dioxygenation. *Org. Lett.* **2013**, *15*, 46-49.

8. Neufeldt, S. R.; Sanford, M. S. Combining Transition Metal Catalysis with Radical Chemistry: Dramatic Acceleration of Palladium-Catalyzed C–H Arylation with Diaryliodonium Salts. *Adv. Synth. Catal.* **2012**, *354*, 3517–3522. DOI: 10.1002/adsc.201200738

7. Neufeldt, S. R. Ammonium Peroxydisulfate (First Update, **2012**). *Encyclopedia of Reagents for Organic Synthesis* [Online]. John Wiley & Sons Ltd., DOI: 10.1002/047084289X.ra096.pub2.

6. Neufeldt, S. R.; Sanford, M. S. Controlling Site Selectivity in Palladium-Catalyzed C–H Bond Functionalization. *Acc. Chem. Res.* **2012**, *45*, 936–946.

5. Kalyani, D.; McMurtrey, K. B.; Neufeldt, S. R.; Sanford, M. S. Room-Temperature C–H Arylation: Merger of Pd-Catalyzed C–H Functionalization and Visible-Light Photocatalysis. *J. Am. Chem. Soc.* **2011**, *133*, 18566–18569.

4. Neufeldt, S. R. Palladium, bis(benzo[h]quinolin-10-yl-□C,□N)di-μ-chlorodi– (**2011**), *Encyclopedia of Reagents for Organic Synthesis* [Online], John Wiley & Sons Ltd., DOI: 10.1002/047084289X.rn01397.

3. Neufeldt, S. R.; Sanford, M. S. O-Acetyl Oximes as Transformable Directing Groups for Pd-Catalyzed C–H Bond Functionalization. *Org. Lett.* **2010**, *12*, 532–535.

2. Grant, D. J.; Matus, M. H.; Anderson, K. D.; Camaioni, D. M.; Neufeldt, S. R.; Lane, C. F.; Dixon, D. A. Thermochemistry for the Dehydrogenation of Methyl-Substituted Ammonia Borane Compounds. *J. Phys. Chem. A* **2009**, *113*, 6121–6132.

1. Molander, G. A.; Sommers, E. M., Neufeldt, S. R. Palladium(0)-Catalyzed Synthesis of Chiral Ene-allenes Using Alkenyl Trifluoroborates. *J. Org. Chem.* **2006**, *71*, 1563–1568.

INVITED CONFERENCE PRESENTATIONS

13. "Unconventional Site Selectivity in Cross-Couplings of Dihaloheteroarenes," ***Sanford Chemistry Symposium*****,** Ann Arbor, MI, June 2023.
12. "Controlling Chemoselectivity of Cross-Coupling Reactions," ***Canadian Chemisry Conference & Exhibition***, Symposium: Total Synthesis of Complex Molecules North and South of the Border; Vancouver, BC, Canada June 2023
11. "Unconventional Site Selectivity in Cross-Couplings of Dihaloheteroarenes," ***Canadian Chemisry Conference & Exhibition***, Symposium: Innovative Approaches to Mechanistic Analysis; Vancouver, BC, Canada June 2023
10. "Unconventional Site Selectivity in Cross-Couplings of Dihaloheteroarenes," ***Umicore Catalysis Symposium***, San Fransisco, CA, May 2023
9. "Divergent oxidative addition mechanisms for Pd(0) and implications for selectivity." (Keynote speaker) ***Western Region Cottrell Scholar Meeting/Enhancing Science Courses by Integrating Python (ESCIP) Workshop****,* Santa Clara, CA, January 2023.
8. "Divergent oxidative addition mechanisms for Pd(0) and implications for selectivity." ***American Chemical Society Western Regional Meeting***, Las Vegas, NV, October 2022.
7. "Origin of ligand-controlled selectivity in cross-coupling of dichloroheteroarenes." ***Canadian Chemisry Conference & Exhibition***, Calgary, Alberta, Canada June 2022.
6. "Origin of ligand-controlled selectivity in cross-coupling of dichloroheteroarenes." ***American Chemical Society National Conference***, San Diego, CA, March 2022 (*withdrawn due to family emergency*).
5. "Controlling Site Selectivity in Cross Coupling Reactions on Heteroarenes." ***Florida Heterocyclic and Synthetic Conference****,* Gainesville, FL, March 2020.
4. "Tantalum-Based Metallocenes for Activation of Hydrocarbons." ***Future of C—H Functionalization Workshop***, Telluride, CO, July 2019.
3. "Using DFT to Study Transmetalation: Nickel-Catalyzed Stille Cross Coupling of C—O Electrophiles." ***American Chemical Society National Conference***, Orlando, FL, April 2019.
2. "New Ways to Control Selectivity in Cross Coupling." ***Accelerating Reaction Discovery Workshop***, Telluride, CO, July 2018.
1. "Origin of the Selectivity Difference between Pyridine N-Oxide and Pyridine Substrates for Rh(III)-Catalyzed C–H Functionalization." ***American Chemical Society Western Regional Meeting***, San Marcos, CA, November 2015.

INVITED ACADEMIC AND INDUSTRY SEMINARS

25. "Unconventional Site Selectivity in Cross-Couplings of Dihaloheteroarenes." ***Iowa State University***, *Department of Chemistry*, Ames, IA, April 2023.
24. "Unconventional Site Selectivity in Cross-Couplings of Dihaloheteroarenes." ***University of Virginia***, *Department of Chemistry*, Charlottesville, VA, April 2023.
23. "Unconventional Site Selectivity in Cross-Couplings of Dihaloheteroarenes." ***University of Michigan***, *Department of Chemistry*, Ann Arbor, MI, March 2023.
22. "Ligand Identity can Influence the Mechanism of Oxidative Addition at Pd(0)." ***Umicore****, R&D and Technical Sales,* Hanau, Germany, January 2023 (*virtual*).
21. "Divergent oxidative addition mechanisms for Pd(0) and implications for selectivity." ***Vanderbilt University***, *Department of Chemistry*, Nashville, TN, October 2022.
20. "Pushing Metals out of their Comfort Zone: Switching Selectivity in Cross-Coupling Reactions." ***Montana State University***, *Department of Chemistry and Biochemistry*, Bozeman, MT, September 2022.
19. "Ligand and Solvent-Controlled Site Selective Pd-Catalyzed Cross Coupling Reactions." ***Western Washington University****, Department of Chemistry*, Bellingham, WA, November 2021 (*virtual seminar*).

18. “Ligand and Solvent-Controlled Site Selective Pd-Catalyzed Cross Coupling Reactions.” ***Wayne State University****, Department of Chemistry*, Detroit, MI, November 2021 (*virtual seminar*).
17. “Ligand and Solvent-Controlled Site Selective Pd-Catalyzed Cross Coupling Reactions.” ***New York University****, Department of Chemistry*, New York, NY, November 2021 (*virtual seminar*).
16. “Ligand and Solvent-Controlled Site Selective Pd-Catalyzed Cross Coupling Reactions.” ***Merck****, Discovery and Process Chemistry*, *Early Career Consulting Series,* Kenilworth, NJ, October 2021 (*virtual seminar).*
15. “Ligand and Solvent-Controlled Site Selective Pd-Catalyzed Cross Coupling Reactions.” ***University of Delaware****, Department of Chemistry and Biochemistry*, Newark, DE, October 2021 (*virtual seminar*).
14. “Controlling Site Selectivity in Cross Coupling Reactions.” ***The Ohio State University****, Department of Chemistry and Biochemistry*, Columbus, OH, December 2020 (*virtual seminar*).
13. “Controlling Site Selectivity in Cross Coupling Reactions.” ***Cornell University****, Department of Chemistry and Chemical Biology*, Ithaca, NY, November 2020 (*virtual seminar*).
12. “Controlling Site Selectivity in Cross Coupling Reactions.” ***Marquette University****, Department of Chemistry*, Milwaukee, WI, October 2020 (*virtual seminar*).
11. “Controlling Site Selectivity in Cross Coupling Reactions.” ***University of Minnesota****, Department of Chemistry*, Minneapolis, MN, October 2020 (*virtual seminar*).
10. “Controlling Site Selectivity in Cross Coupling Reactions.” ***University of Vermont****, Department of Chemistry*, Burlington, VT, April 2020 (*cancelled due to COVID-19*).
9. “Controlling Site Selectivity in Cross Coupling Reactions.” ***Portland State University****, Department of Chemistry*, Portland, OR, February 2020.
8. “Controlling Site Selectivity in Cross Coupling Reactions.” ***West Virginia University****, Department of Chemistry and Biochemistry*, Morgantown, WV, October 2019.
7. “Controlling Site Selectivity in Cross Coupling Reactions.” ***Pittsburgh University****, Department of Chemistry*, Pittsburgh, PA, October 2019.
6. “Controlling Site Selectivity in Cross Coupling Reactions.” ***Northern Arizona University****, Department of Chemistry and Biochemistry*, Flagstaff, AZ, October 2019.
5. “Using *N*-Heterocyclic Carbene Ligands to Control Cross Coupling Selectivity.” ***University of Montana****, Department of Chemistry and Biochemistry*, Missoula, MT, March 2019.
4. “Designing a Catalytic System to Convert Methane to Heavier Alkanes.” ***Montana State University****, Center for Biofilm Engineering*, Bozeman, MT, April 2017.
3. “Designing a Catalytic System to Convert Methane to Heavier Alkanes.” ***Gonzaga University****, Department of Chemistry and Biochemistry*, Spokane, WA, March 2017.
2. “Mild Ligand-Directed Palladium-Catalyzed C–H Arylation and Alkylation.” ***UCLA****, Department of Chemistry and Biochemistry, Los Angeles*, CA, May 2013.
1. “Ligand-Directed Palladium-Catalyzed C–H Functionalization.” ***Northern Arizona University***, Department of Chemistry and Biochemistry, Flagstaff, AZ, February 2013.

SERVICE AND OUTREACH

Professional

Guest Editor for *J. Org. Chem.*, Special Issue "Next-Generation Cross-Coupling	Fall 2022 – present
Local Organizer, ACS DOC Graduate Research Symposium, Bozeman, MT	July 2023
Session Chair, ACS Northwestern Regional Meeting, Bozeman, MT	June 2023
Grant Review Panelist [NSF(x6), NIH(x1)]	January 2019 – present
Houk Research Conference (co-organizer)	Fall 2019 – Spring 2020
Ad hoc Grant Reviewer [DOE(x4), ACS-PRF(x6), NSF(x1), RCSA(x2)]	August 2016 – present
Manuscript Reviewer (ACS, RSC, Wiley, Nature, AAAS journals)	August 2016 – present

University/Departmental

Faculty Senate, Montana State University	Fall 2022 – present
REU program director, MSU Chemistry & Biochemistry	AY 18-19 – Summer 2022
Graduate Recruiting and Admissions Committee (member)	AY 16 – present
Faculty Hiring Committee member (Bioinorganic Chemistry)	AY 21-22
NSF CAREER Panelist (Center for Faculty Excellence)	02/20
Faculty Hiring Committee member (Theoretical Chemistry)	AY 19-20
Undergraduate Scholars Program Proposal Reviewer	AY 18-19 – AY 19-20
Graduate Student Association Travel Grant Reviewer	AY 16-17, AY 19-20
Hilleman Scholars Lab Day (host)	08/18, 07/19
Synthetic Chemistry Supergroup Meeting (organizer)	AY 18-19
RFP 17-18 Chemical Inventory Management System Committee (member)	Summer 2017
Women in Science and Engineering Conference (invited speaker)	09/17
Chemistry & Biochemistry Undergraduate Awards Ceremony (keynote speaker)	04/17