KEVIN H. SHAUGHNESSY
Professor

Contact Information:

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Education:

B. S. with Honors and Highest Distinction: Chemistry, University of Nebraska-Lincoln, 1992

Ph.D.: Organic Chemistry, Stanford University, 1998. Dissertation: "Synthetic and Mechanistic Studies of Metal-Catalyzed Diene Cyclizations"
Advisor: Prof. Robert M. Waymouth

Professional Experience:

2014-present	Professor of Chemistry & Biochemistry, The University of Alabama
1999-present	Full Member of the Graduate Faculty, The University of Alabama
2009-2019	Chair, Department of Chemistry & Biochemistry, The University of Alabama
2007-2009	Director of Undergraduate Studies in Chemistry, The University of Alabama
2005-2014	Associate Professor of Chemistry, The University of Alabama
1999-2005	Assistant Professor of Chemistry, The University of Alabama
1999-2014	Faculty Member, Center for Green Manufacturing, The University of Alabama
1997-1999	Postdoctoral Associate, Prof. John F. Hartwig, Yale University

Teaching Experience:

1999-present	Faculty member, The University of Alabama Undergraduate Classes: Organic Chemistry I and II, Organic Chemistry Laboratory I and II, Spectroscopic Techniques in Organic Chemistry, Intermediate Organic Chemistry, Organometallic Chemistry Graduate Classes: Organometallic Chemistry, Spectroscopic Techniques in Organic Chemistry, Physical Organic Chemistry
1992-1997	Graduate Teaching Assistant in Organic Chemistry, Stanford University
1990-1992	Undergraduate Teaching Assistant for General and Organic Chemistry lab classes, University of Nebraska.

University Service:

2016-present	McCullough Health Professional Scholars Program Executive Committee, College of Arts & Sciences
2007-present	Gamma Sigma Epsilon Faculty Advisor, Department of Chemistry and Biochemistry
2005-present	REU Program Committee, Department of Chemistry and Biochemistry

2002-present	Chair, Department of Chemistry Web Site Committee and Biochemistry
2019	Honors College Program Review Task Force, Honors College
2018	Director of the Center for Experimental Research in the Arts Search Committee, College of Arts & Sciences
2014-2017	NTRC Policy Committee, College of Arts & Sciences
2015-2016	Chair, Graduate Dean and Associate Provost Search Committee, University of Alabama
2015	Department of English NTRC Promotion Committee
2014-2016	Pre-Health Advising Professions Advisory Council, College of Arts & Sciences
2014-2015	Department of Mathematics Chair Search Committee, College of Arts & Sciences
2013-2015	SACS Reaffirmation Committee on Graduate Education, University of Alabama
2013	Outstanding Commitment to Teaching Award Selection Committee, University of Alabama Alumni Association
2013	Director of Health Professions Advising Program Search Committee, College of Arts and Sciences
2011-2013	University Technology and Learning Committee, University of Alabama
2009-2012	Undergraduate Program and Services Committee, University of Alabama
2007-2010	Distinguished Teaching Fellow, College of Arts & Sciences
2008-2009	Department of Biological Sciences Chair Search Committee
2007-2009	Chair, Undergraduate Curriculum Committee
2007-2009	Student Affiliates of the American Chemical Society, Faculty Advisor
2007-2009	Department of Chemistry, Arduengo Lecture Series Committee
2006-2009	Chair, Department of Chemistry Seminar Committee
2005-2009	Retention, Tenure, & Promotion Committee, Department of Chemistry
2007-2008	UA Scholarship of Teaching Team
2007-2008	Department of Chemistry, Alternative Energy Faculty Search Committee
2006-2007	University Lab Safety and Environmental Compliance Committee
2006-2007	New College, Science Faculty Search Committee
2005-2007	College of Arts and Sciences, Tenure and Promotion Committee
2002-2007	Department of Chemistry, Undergraduate Curriculum Committee
1999-2007	Department of Chemistry, Graduate Recruiting Committee
2004-2005	College of Arts and Sciences, Ramsay Chair Search Committee
2003-2004	College of Arts and Sciences, Technology Committee
2000-2003	Department of Chemistry, Organic Faculty Search Committee
2000-2002	Department of Chemistry, Web Site Subcommittee

Other Professional Activities:

- Member of Editorial Board, *Organic Reactions* (2018-present)
- Associate Editor, *Current Organic Chemistry* (2015-present)
- Award Committee Chair, Alabama Section of the American Chemical Society (2007-present)
- External Program Reviewer, Department of Chemistry and Biochemistry, University of Mississippi (2018)

- Alabama Science in Motion Steering Committee member (2007-2012)
- Editorial Board Member, 23rd Organic Reactions Catalysis Society Conference (2010)
- Reviewer for *Science, Journal of the American Chemical Society, Angewandte Chemie, Journal of Organic Chemistry, Organic Letters, Organometallics,* and many other journals.
- Panel review for the National Science Foundation: STEP, Technology for a Sustainable Environment, and Course, Curriculum, and Laboratory Improvement programs.
- Proposal review for private and government agencies, including the National Science Foundation, NSERC (Canada), Petroleum Research Fund, Office of Army Research, and Research Corporation.
- Content provider for companion websites to *Organic Chemistry* by Paula Y. Bruice and *Organic Chemistry* by L. G. Wade, Jr.

Professional Societies and Honors:

- Fulbright Scholar, Polish Academy of Science, Łodź (2020)
- Inducted to National Academy of Inventors, The University of Alabama Chapter (2016)
- Jim Salem Outstanding Department Chair Award, College of Arts & Sciences (2012-13)
- Honorary Member, Anderson Honors Society, The University of Alabama (2010)
- College of Arts & Sciences Distinguished Teaching Fellow (2007-2010)
- Outstanding Commitment to Teaching Award, UA Alumni Association (2007)
- Research Innovation Award, Research Corporation (2001)
- Phi Beta Kappa, Alpha Chapter of Nebraska, University of Nebraska-Lincoln (1992)
- Phi Lambda Upsilon, Rho Chapter, University of Nebraska-Lincoln (Chemistry Honorary Society, 1992)
- Regents Scholar, University of Nebraska (1988-1992)
- National Merit Scholar (1988)
- Member American Chemical Society (Divisions of Organic and Inorganic Chemistry)
- Member American Associate for the Advancement of Science
- Member Council on Undergraduate Research
- Member Alabama Academy of Science

Research Interests:

Organometallic reaction mechanisms; metal-catalyzed reactions, stereoselective catalysts, ligand design, alternative reaction media, environmentally benign catalyst systems, alternative energy generation and storage systems

Publications:

Peer-Reviewed Publications

h-index: 26

>3,800 citations

Publications at The University of Alabama

60. Hu, H.; Vasiliu, M.; Stein, T. H.; Qu, F.; Gerlach, D. L; Dixon, D. A.; Shaughnessy, K. H. "Synthesis, Structural Characterization, and Coordination Chemistry of (Trineopentylphosphine)palladium(aryl)bromide Dimer Complexes

([(Np_3P)Pd(Ar)Br]$_2$)," *Inorg. Chem.*, submitted.

59. Adhikari, R.; Kotbagi, T. V.; Shaughnessy, K. H.; Sherwood, J.; Bao, Y.; Bakker, Martin G. "A One-Pot Synthesis of Hierarchically Porous Carbon Monoliths Supporting Nickel Nanoparticles and use as Heterogeneous Catalyst," *Mol. Catal.* submitted
58. Shaughnessy, K. H. "Development of Palladium Precatalysts that Efficiently Generate LPd(0) Active Species," *Isr. J. Chem.* accepted.
    Invited review
57. Barnett, K. L.; Howard, J. R.; Treager, C. J.; Shipley, A. T.; Stullich, R. M.; Qu, F.; Gerlach, D. L.; Shaughnessy, K. H. "Air-Stable [(R_3P)PdCl$_2$]$_2$ Complexes of Neopentylphosphines as Cross-Coupling Precatalysts: Catalytic Application and Mechanism of Catalyst Activation and Deactivation," *Organometallics*, **2018**, *37*, 1410-1424. DOI: 10.1021/acs.organomet.8b00082
56. Kotbagi, T. V.; Shaughnessy, K. H.; LeDoux, C.; Cho, H.; Tay-Agbozo, S.; van Zee, J.; Bakker, M. G. "Copolymerization of Transition Metal Salen Complexes and Conversion into Metal Nanoparticles Supported on Hierarchically Porous Carbon Monoliths: A One Pot Synthesis," *J. Sol-Gel Sci. Technol.*, **2017**, *84*, 258-273. DOI: 10.1007/s10971017-4510-0
55. Hu, H.; Qu, F.; Gerlach, D. L.; Shaughnessy, K. H. "Mechanistic Study of the Role of Substrate Steric Effects and Aniline Inhibition on the Bis(trineopentylphosphine)-palladium(0)-Catalyzed Arylation of Aniline Derivatives," *ACS Catal.,* **2017**, 2516-2527. DOI: 10.1021/acscatal.7b00024
54. Lauer, M. G.; Headford, B. R.; Gobble, O. M.; Weyhaupt, M. B.; Gerlach, D. L.; Zeller, M.; Shaughnessy, K. H. "A Trialkylphosphine Derived Palladacycle as a Catalyst in the Selective Cross-Dimerization of Terminal Arylacetylenes with Terminal Propargyl Alcohols and Amides" *ACS Catal.*, **2016**, *6*, 5834-5842. DOI: 10.1021/acscatal.6b01541
53. Hu, C.; Shaughnessy, K. H.; Hartman, R. L. "Influence of water on the deprotonation and the ionic mechanisms of a Heck alkynylation and its resultant E-factors," *React. Chem & Eng.* **2016**, *1*, 65-72. DOI: 10.1039/c5re00034c
    Selected for cover image
52. Sabio, J. C.; Domier, R. C.; Moore, J. N.; Shaughnessy, K. H.; Hartman, R. L. "Palladium theory of aqueous-phase Heck alkynylations for intensification of discovery and manufacture," *Chem. Eng. Technol*, **2015**, *38*, 1717-1725. DOI: 10.1002/ceat.201500117
51. Shaughnessy, K. H., "Palladium-Catalyzed Modification of Unprotected Nucleosides, Nucleotides, and Oligonucleotides," *Molecules*, **2015**, *20*, 9419-9454. DOI: 10.3390/molecules20059419
    Invited review
50. Semmes, J. G.; Bevans, S. L.; Mullins, C. H.; Shaughnessy, K. H. "Arylation of diethyl malonate and ethyl cyanoacetate catalyzed by palladium/di-*tert*-butylneopentyl-phosphine," *Tetrahedron Lett.*, **2015**, *56*, 3447-3450. DOI: 10.1016/j.tetlet.2015.01.072
49. Moore, J. N.; Laskay, N. M.; Duque, K. S.; Kelley, S. P.; Rogers, R. D.; Shaughnessy, K. H. "Synthesis of 4-Sulfonatobenzylphosphines and Their Application in Aqueous-Phase Palladium-Catalyzed Cross-Coupling," *J. Organomet. Chem.* **2015**, *777*, 16-24. DOI: 10.1016/j.jorganchem.2014.11.011
48. Lauer, M. G.; Thompson, M. K.; Shaughnessy, K. H. "Controlling Olefin Isomerization in the Heck Reaction with Neopentyl Phosphine Ligands," *J. Org. Chem.*, **2014**, *79*,

10837-10848. DOI: 10.1021/jo501840u
Highlighted in: "Highlights from the Literature," *Org. Proc. Res. Dev.*, **2015**, *19*, 250-258. DOI: 10.1021/op500387k

47. Raders, S. M.; Jones, J. M.; Semmes, J. G.; Kelley, S. P.; Rogers, R. D; Shaughnessy, K. H. "Di-*tert*-butylneopentylphosphine (DTBNpP): An Efficient Ligand in the Palladium-Catalyzed α-Arylation of Ketones," *Eur. J. Org. Chem*. **2014**, 7395-7404. DOI: 10.1002/ejoc.201402474
46. Bhattarai, B. T. Adhikari, S.; Kimball, E. A.; Moore, J. N.; Shaughnessy, K. H.; Snowden, T. S.; Fronczek, F. R.; Dolliver, D. D. "Palladium-catalyzed *ortho*-halogenation of diaryl oxime ethers," *Tetrahedron Lett*. **2014**, *55*, 4801-4806. DOI: 10.1016/j.tetlet.2014.06.080
45. Domier, R. C; Moore, J. N.; Shaughnessy, K. H..; Hartman, R. L. "Kinetic Analysis of Aqueous-Phase Pd-Catalyzed, Cu-Free Direct Arylation of Terminal Alkynes Using a Hydrophilic Ligand," *Org. Proc. Res. Dev.*, **2013**, *17*, 1262-1271. DOI: 10.1021/op4001274
44. Raders, S. M.; Moore, J. N.; Parks, J. K.; Miller, A. D.; Leißing, T. M.; Kelley, S. P.; Rogers, R. D.; Shaughnessy, K. H. "Trineopentylphosphine: A Conformationally Flexible Ligand for the Coupling of Sterically Demanding Substrates in the Buchwald-Hartwig Amination and Suzuki-Miyaura Reaction," *J. Org. Chem.*, **2013**, *78*, 4649-4664. DOI: 10.1021/jo400435z. **Featured Article**
Highlighted in: "Highlights from the Literature," *Org. Proc. Res. Dev.*, **2013**, *17*, 952-962. DOI: 10.1021/op400159x
43. Dolliver, D. D.; Bhattarai, B. T.; Pandey, A.; Lanier, M. L.; Bordelon, A. S.; Adhikari, S.; Dinser, J. A.; Flowers, P. F.; Wills, V. S.; Schneider, C. L.; Shaughnessy, K. H.; Moore, J. N.; Raders, S. M.; Snowden, T. S.; McKim, A. S.; Fronczek, F. R. "Stereospecific Suzuki, Sonogashira, and Negishi coupling reactions of N-alkoxyimidoyl iodides and bromides," *J. Org. Chem*, **2013**, *78*, 3676-3687. DOI: 10.1021/jo400179u
42. Sayler, F. M.; Grano, A. J.; Scogin, W.; Sanders, P.; Smått, J.-H.; Shaughnessy, K. H.; Bakker, M. G. "Formation and Applications of Hierarchically Porous Carbon, Metals and Metal Oxides Formed by Nanocasting", *MRS Proc.*, **2012**, *1389*. DOI: 10.1557/opl.2012.493
41. Cho, J. H.; Shaughnessy, K. H. "Aqueous-phase Sonogashira alkynylation to synthesize 5-substituted pyrimidine and 8-substituted purine nucleosides," *Curr. Prot. Nucleic Acid Chem.* **2012**, *49*, 1.27.1-10. DOI: 10.1002/0471142700.nc0127s49
40. Cho, J. H.; Shaughnessy, K. H. "Aqueous-Phase Heck Coupling of 5-Iodouridine and Alkenes under Phosphine-Free Conditions." *Synlett* **2011**, 2963-2966. DOI: 10.1055/s-0031-1289886
39. Vongsutilers, V.; Phillips, D. J.; Train, B. C.; McKelvey, G. R.; Thomsen, N. M.; Shaughnessy, K. H.; Lewis, J. P.; Gannett, P. M. "The Conformational Effect of para-Substituted *C*8-Arylguanine Adducts on the B/Z/-DNA Equilibrium," *Biophys. Chem.*, **2011**, *154*, 41-48. DOI: 10.1016/j.bpc.2010.12.006
38. Hill, L. L.; Crowell, J. L.; Tutwiler, S. L., Massie, N. L., Hines, C. C.; Griffin, S. T.; Rogers, R. D.; Shaughnessy, K. H.; Grasa, G. A.; Johansson Seechurn, C. C. C.; Li, H.; Colacot, T. J.; Chou, J.; Woltermann, C. J. "Synthesis and X-ray Structure Determination of Highly Active Pd(II), Pd(I), and Pd(0) Complexes of Di(*tert*-butyl)neopentylphosphine

(DTBNpP) in the Arylation of Amines and Ketones," *J. Org. Chem.* **2010**, *75*, 6477–6488. DOI: 10.1021/jo101187q

37. Cho, J. H.; Prickett, C. D.; Shaughnessy, K. H. "Efficient Sonogashira Coupling of Unprotected Halonucleosides in Aqueous Solvents Using Water-Soluble Palladium Catalysts," *Eur. J. Org. Chem.* **2010**, 3678-3683. DOI: 10.1002/ejoc.201000313
36. Craciun, R.; Vincent, A. J.; Shaughnessy, K. H.; Dixon, D. A. "Prediction of Reliable Metal–PH_3 Bond Energies for Ni, Pd, and Pt in the 0 and +2 Oxidation States" *Inorg. Chem.*, **2010**, *49*, 5546-5553. DOI: 10.1021/ic1004853
35. Vongsutilers, V.; Daft, J. R.; Shaughnessy, K. H.; Gannett, P. M. "A General Synthesis of C8-Arylpurine Phosphoramidites," *Molecules*, **2009**, *14*, 3339-3352. DOI: 10.3390/molecules14093339
34. Shaughnessy, K. H. "Hydrophilic Ligands and Their Application in Aqueous-Phase Metal-Catalyzed Reactions," *Chem. Rev.* **2009**, *109*, 643-710. DOI: 10.1021/cr800403r.
Invited review for Special Thematic Issue on Facilitated Chemical Synthesis.
Highlighted in: "Highlights from the Literature," *Org. Proc. Res. Dev.*, **2009**, *13*, 364-370. DOI: 10.1021/op9001005
33. Brown, W. S.; Boykin, D. D.; Sonnier, M. Q., Jr.; Clark, W. D.; Brown, F. V.; Shaughnessy, K. H. "Sterically-Demanding, Zwitterionic Trialkylphosphonium Sulfonates as Air-Stable Ligand Precursors for Efficient Palladium-Catalyzed Cross-Couplings of Aryl Bromides and Chlorides," *Synthesis*, **2008**, 1965-1970. DOI: 10.1055/s-2008-1067095.
Invited manuscript.
32. Hill, L. L.; Smith, J. M.; Brown, W. S.; Moore, L. R.; Guevara, P. J.; Pair, E. S.; Porter, J. E.; Chou, J.; Woltermann, C. J.; Craciun, R.; Dixon, D. A.; Shaughnessy, K. H. "Neopentylphosphines as effective ligands in palladium-catalyzed cross-couplings of aryl bromides and chlorides" *Tetrahedron*, **2008**, *64*, 6920-6934. DOI: 10.1016/j.tet.2008.02.037.
Invited manuscript.
31. Moore, L. R.; Western, E. C.; Craciun, R.; Spruell, J. M.; Dixon, D. A.; O'Halloran, K. P.; Shaughnessy, K. H. "Sterically Demanding, Sulfonated, Triarylphosphines: Application to Palladium-Catalyzed Cross-Coupling, Steric and Electronic Properties, and Coordination Chemistry," *Organometallics*, **2008**, *27*, 576-593. DOI: 10.1021/om7008606
30. Cho, J. H.; Brown, F. V.; Shaughnessy, K. H. "A Selective and Tin-Free Pd-Catalyzed Phenylselenylation of Aryl Bromides" *Main Group Chem.* **2007**, *6*, 201-214. DOI: 10.1080/10241220801967367.
Invited symposium paper.
29. Moore, L. R.; Cooks, S. M; Anderson, M. S.; Schanz, H.-J.; Griffin, S. T.; Rogers, R. D.; Kirk, M. C; Shaughnessy, K. H. "Synthesis and Characterization of Water-Soluble Silver and Palladium Imidazol-2-ylidene Complexes with Non-Coordinated Anionic Substituents, *Organometallics*, **2006**, *25*, 5151-5158. DOI: 10.1021/om050442b
28. Huang, R. and Shaughnessy, K. H. "Water-Soluble Palladacycles as Precursors to Highly Recyclable Catalysts for the Suzuki Coupling of Aryl Bromides in Aqueous Solvents," *Organometallics*, **2006**, *25*, 4105-4112. DOI: 10.1021/om050940y
#2 top downloaded *Organometallics* article, 3rd quarter 2006

27. Hill, L. L.; Moore, L. R.; Huang, R.; Craciun, R.; Vincent, A. J.; Dixon, D. A.; Chou, J.; Woltermann, C. J.; Shaughnessy, K. H. "Bulky Alkylphosphines with Neopentyl Substituents as Ligands in the Amination of Aryl Bromides and Chlorides," *J. Org. Chem.* **2006**, *71*, 5117-5125. DOI: 10.1021/jo060303x
26. Shaughnessy, K. H. "Beyond TPPTS: New Approaches to the Development of Efficient Palladium-Catalyzed Aqueous-Phase Cross-Coupling Reactions," *Eur. J. Org. Chem.* **2006**, 1827-1835. DOI: 10.1002/ejoc.200500972
Invited review. Cover graphic.
Among 10 most cited *EJOC* articles from 2006.
25. Huang, R.; Shaughnessy, K. H. "*t*-Bu-Amphos-$RhCl_3 \cdot 3H_2O$: A Highly Recyclable Catalyst System for the Cross-Coupling of Aldehydes and Aryl- and Vinylboronic Acids in Aqueous Solvents," *Chem. Commun.* **2005**, 4484-4486. DOI: 10.1039/b509406b
24. Western, E. C.; Shaughnessy, K. H. "Inhibitory Effects of the Guanine Moiety on Suzuki Couplings of Unprotected Nucleosides in Aqueous Media," *J. Org. Chem.* **2005**, *70*, 3678-3688. DOI: 10.1016/jo0508321
23. Klingshirn, M. A.; Rogers, R. D.; Shaughnessy, K. H. "Palladium-Catalyzed Hydroesterification of Styrene Derivatives in the Presence of Ionic Liquids," *J. Organomet. Chem.* **2005**, *690*, 3620-3626. DOI: 10.1016/j.jorganchem.2005.05.031
Special Issue on Ionic Liquids
#25 most downloaded article, 3rd quarter 2005.
22. Sliger, M. D.; P'Pool, S. J.; Traylor, R. K.; McNeill, J., III; Young, S. H.; Hoffman, N. W.; Klingshirn, M. A.; Rogers, R. D.; Shaughnessy, K. H. "Promoting Effect of Ionic Liquids on Ligand Substitution Reactions." *J. Organomet. Chem.*, **2005**, *690*, 3540-3545. DOI: 10.1016/j.jorganchem.2005.02.018
Special issue on Ionic Liquids
21. P'Pool, S. J.; Klingshirn, M. A.; Rogers, R. D.; Shaughnessy, K. H. "Kinetic Study of the Oxidative Addition of Methyl Iodide to Vaska's Complex in Ionic Liquids," *J. Organomet. Chem.* **2005**, *690*, 3522-3528. DOI: 10.1016/j.jorganchem.2005.02.024
Special issue on Ionic Liquids
20. Shaughnessy, K. H.; DeVasher, R. B. "Palladium-Catalyzed Cross-Coupling in Aqueous Media: Recent Progress and Current Applications." *Curr. Org. Chem.* **2005**, *9*, 585-604.
Invited review.
19. Sliger, M. D; Shaughnessy, K. H.; Broker, G. A.; Griffin, S. T.; Rogers, R. D. "Di-*t*-butyl(ferrocenylmethyl)phosphine: air-stability, structural characterization, coordination chemistry, and application to palladium-catalyzed cross-coupling reactions." *J. Organomet. Chem.*, **2005**, *690*, 1478-1486. DOI: 10.1016/j.jorgan.chem.2004.12.022. #7 most downloaded article, 1st quarter 2005.
18. DeVasher, R. B.; Spruell, J. M.; Dixon, D. A.; Broker, G. A.; Griffin, S. T.; Rogers, R. D.; Shaughnessy, K. H. "Experimental and Computational Study of Steric and Electronic Effects on the Coordination of Sterically Demanding, Water-Soluble Alkylphosphines to Palladium under Reducing Conditions: Correlation to Catalytic Activity." *Organometallics*, **2005**, *24,* 962-971. DOI: 10.1021/om049241w
17. DeVasher, R. B.; Moore, L. R.; Shaughnessy, K. H. "Aqueous-Phase, Palladium-Catalyzed Cross-Couplings of Aryl Bromides Under Mild Conditions Using Water-Soluble, Sterically Demanding Alkylphosphines." *J. Org. Chem.* **2004**, *69*, 7919-7927. DOI: 10.1021/jo048910c

16. Moore, L. R. and Shaughnessy, K. H. "Efficient Aqueous-Phase Heck and Suzuki Couplings of Aryl Bromides using Tri(4,6-dimethyl-3-sulfonatophenyl)phosphine Trisodium Salt (TXPTS)." *Org. Lett.* **2004**, *6*, 225-228. DOI: 10.1021/ol0360288
15. Gannett, P. M.; Heavner, S.; Daft, J. R. Shaughnessy, K. H.; Epperson, J. D.; Greenbaum, N. L. "Synthesis, Properties and NMR Studies of a C8-Phenylguanine Modified Oligonucleotide that Preferentially Adopts the Z-DNA Conformation." *Chem. Res. Tox.* **2003**, *16*, 1384-1395. DOI: 10.1021/tx034023d
14. Shaughnessy, K.H.; Klingshirn, M. A.; P'Pool, S. J.; Holbrey, J. D.; Rogers, R. D. "Polar, Non-Coordinating Ionic Liquids as Solvents for Coordination Polymerization of Olefins," in *Ionic Liquid as Green Solvents: Progress and Prospects,* Rogers, R. D.; Seddon, K. R. Eds,, **2003**, pp 300-313, American Chemical Society Symposium Series 85*6*, Washington, DC.
13. Western, E. C.; Daft, J. R.; Johnson, E. M., II; Gannett, P. M.; Shaughnessy, K. H. "Efficient One-Step Suzuki Arylation of Unprotected Halonucleosides using Water-Soluble Palladium Catalysts," *J. Org. Chem.*, **2003**, *68*, 6767-6774. DOI: 10.1021/jo034289p
12. Shaughnessy, K. H.; Huang, R. "Acid-Mediated, Chromium-Catalyzed Allylation of Aldehydes," *Synth. Comm.* **2002**, *32*, 1923-1928. DOI: 10.1081/SCC-120004841
11. Klingshirn, M. A.; Broker, G. A.; Holbrey, J. D.; Shaughnessy, K. H.; Rogers, R. D. "Polar, Non-Coordinating Ionic Liquids as Solvents for the Alternating Copolymerization of Styrene and CO Catalyzed by Cationic Palladium Catalysts," *Chem. Commun*, **2002**, 1394-1395. DOI: 10.1039/b203367d
10. Shaughnessy, K. H.; Booth, R. S. "Sterically Demanding, Water-Soluble Alkylphosphines as Ligands for High Activity Suzuki Couplings in Aqueous Solvents," *Org. Lett*, **2001**, *3,* 2757-2759. DOI: 10.1021/ol0163629

Post-Doctoral Publications and Patents

9. Stambuli, J.P; Stauffer, S. R.; Shaughnessy, K. H.; Hartwig, J. F. "Screening of Homogeneous Catalysts by Fluorescence Resonance Energy Transfer. Identification of Catalysts for Room Temperature Heck Reactions," *J. Am. Chem. Soc.*, **2001**, *123*, 2677-2678. DOI: 10.1021/ja0058435
8. Hartwig, J. F.; Kawatsura, M.; Hauck, S. I.; Shaughnessy, K. H.; Alcazar-Roman, L. M. "Transition metal-catalyzed process for preparing N-aryl compounds," (Yale University), US Patent 6,100,398 (2000)
7. Hartwig, J. F.; Kawatsura, M.; Hauck, S. I.; Shaughnessy, K. H.; Alcazar-Roman, L. M. "Room temperature palladium-catalyzed amination of aryl bromides and chlorides and extended scope of aromatic C-N bond formation with a commercial ligand." *J. Org. Chem.*, **1999**, *64*, 5575-5580. DOI: 10.1021/jo990408i
6. Shaughnessy, K. H.; Kim, P.; Hartwig, J. F. "A fluorescence assay for high-throughput screening of coupling reactions. Application to Heck coupling processes." *J. Am. Chem. Soc.* **1999**, *121*, 2123-2131. DOI: 10.1021/ja983419m
5. Shaughnessy, K. H.; Hamann, B. C.; Hartwig, J. F. "Palladium catalyzed inter-and intramolecular α-arylation of amides. Application of intramolecular amide arylation to the synthesis of oxindoles." *J. Org. Chem.*, **1998**, *63*, 6546-6553. DOI: 10.1021/jo980611y

Ph.D. Publications

4. Shaughnessy, K. H.; Waymouth, R. M. “Enantio- and diastereoselective catalytic carboalumination of 1-alkenes and α,ω-dienes with cationic zirconocenes: scope and mechanism.” *Organometallics*, **1998**, *17*, 5728-5745. DOI: 10.1021/om9807811
3. Shaughnessy, K. H.; Waymouth, R. M. "Highly regioselective cyclocarboxylation of nonconjugated dienes catalyzed by palladium." *Organometallics*, **1997**, *16*, 1001-1007. DOI: 10.1021/om9607513
2. Shaughnessy, K. H.; Waymouth, R. M. "Carbometalation of α,ω-dienes and olefins catalyzed by zirconocenes." *J. Am. Chem. Soc.* **1995**, *117*, 5873-5874. DOI: 10.1021/ja00126a036

Undergraduate Publications

1. Zhu, L-S.; Shaughnessy, K. H.; Rieke, R. D. "A facile method for the preparation of functionalized 2-halo-1-olefins." *Synth. Comm.*, **1993**, *23*, 525-529. DOI: 10.1080/00397919308009808

Patents at UA

2. "Synthesis of a Hierarchically Porous Monoliths By A Cogelation Method," Bakker, M. G.; Kotbagi, T. V.; Shaughnessy, K. H. US Patent, 10,195,587, February 5th, 2019.
1. "Catalysis by Metal Nanoparticles Dispersed Within a Hierarchically Porous Carbon Material, Bakker," M.G.; Sayler, F.M.; Shaughnessy, K.H., US Patent 9,233,366, January 12, 2016, continuation US Patent 9,669,388, June 6, 2017.

Books

1. Shaughnessy, K. H.; Ciganek, B.; DeVasher, R. B. *Copper-Catalyzed Amination of Aryl and Alkenyl Electrophiles*, 2017, John Wiley & Sons, Hoboken, NJ, 696 pp. ISBN: 978-1-119-34598-5

Invited Book Chapters at UA

7. Hartwig, J. F.; Shaughnessy, K. H.; Shekhar, S.; Green, R. A. "Palladium-Catalyzed Amination of Aryl Halides," in *Organic Reactions*, vol 100, Denmark, S. ed., John Wiley and Sons, **2020**, in press.
6. Shaughnessy, K. H. "Introduction of water-solubility in palladacycles and their catalytic application," in *Palladacycles: Catalysis and Beyond*, Kapdi, A.; Maiti, D. eds., Burlington: Elsevier, **2019**, 225-247, ISBN 978-0-12-815505-9
5. Shaughnessy, K. H. "Application of water-soluble Palladium-catalyst systems for introduction of C-C bonds in nucleosides," in *Palladium-Catalyzed Modification of Nucleosides, Nucleotides and Oligonucleotides*, Kapdi, A. R.; Maiti, D.; Sanghvi, Y. S., eds. Elsevier, **2018**, pp 247-268. https://doi.org/10.1016/B978-0-12-811292-2.00008-8
4. Shaughnessy, K. H. "Greener Approaches Cross-Coupling," in *New Trends in Cross-Coupling: Theory and Applications.* Colacot, T. J. ed., RSC Publishing, **2015**, pp 645-696. DOI: 10.1039/9781782620259-00645
3. Shaughnessy, K. H.; Ciganek, B.; DeVasher, R. B." Copper-Catalyzed Amination of Aryl and Alkenyl Electrophiles," in *Organic Reactions*, vol. 85, Denmark, S. Ed., John Wiley and Sons, **2014**, 668 pp. DOI: 10.1002/0471264180.OR085.01

2. Shaughnessy, K. H. "Cross-Coupling Reactions in Aqueous Media," in *Palladium-Catalyzed Cross-Coupling Reactions - Practical Aspects and Future Developments*, Molnár, Á. Ed., Wiley-VCH, **2013**, pp 235-286. ISBN: 978-3-527-33254-0
1. Shaughnessy, K. H. "Metal-Catalyzed Cross-Couplings of Aryl Halides to Form C–C Bonds in Aqueous Media," in *Metal-Catalyzed Reactions in Water*, Dixneuf, P.; Cadierno, V. Eds., Wiley-VCH, **2013**, pp 1-46. ISBN: 978-3-527-33188-8

Non-Peer-Reviewed Publications at UA

10. Shaughnessy, K. H. "Tri(neopentyl)phosphine" *Electronic Encyclopedia of Reagents for Organic Synthesis (e-EROS)*, **2014**. DOI: 10.1002/047084289X.rn01717
9. Shaughnessy, K. H. "1-Trimethylammonium-2-(di-*t*-butyl)phosphino)ethane chloride, *t*-Bu-Amphos" *Electronic Encyclopedia of Reagents for Organic Synthesis (e-EROS)*, **2013**. DOI: 10.1002/047084289X.RN01518
8. Shaughnessy, K. H. "Bis(1,1-dimethylethyl)2,2-dimethylpropylphosphine," *Electronic Encyclopedia of Reagents for Organic Synthesis (e-EROS)*, **2010**. DOI: 10.1002/047084289X.rn01224
7. Shaughnessy, K. H. "2-(Pentafluorophenyl)-1,3-bis(2,4,6-trimethylphenyl)-imidazolidine," *Electronic Encyclopedia of Reagents for Organic Synthesis (e-EROS)*, **2008**. DOI: 10.1002/047084289X.rn00907
6. Shaughnessy, K. H. "Tri-*tert*-butylphosphine tetrafluoroborate," *e-EROS*. **2008**. DOI: 10.1002/047084289X.rn00869
5. Shaughnessy, K. H. "Palladium, bis(tris-(1,1-dimethylethyl)phosphine," *e-EROS*, **2008**. DOI: 10.1002/047084289X.rn00776
4. Shaughnessy, K. H. "On *Comprehensive Organic Reactions in Aqueous Media* by Chao-Jun Li and Tak-Hang Chan" *Angew. Chem. Int. Ed.* **2008**, *47*, 1988. DOI: 10.1002/anie.200785542. (Book Review)
3. Shaughnessy, K. H. "Tri-*tert*-butylphosphine," *e-EROS*. **2007**. DOI: 10.1002/9780470842898.rn00703
2. Shaughnessy, K. H.; P'Pool, S. J.; Klingshirn, M. A.; Rogers, R. D. "Coordination Polymerization of Alkenes in Ionic Liquids." *Polymer Prepr.* **2004**, *45*, 317-318.
1. Holbrey, J. D.; Shaughnessy, K. H.; Klinshirn, M. A.; Broker, G. A.; Rogers, R. D. "Transition Metal Catalyzed CO/Olefin Co-Polymerization in Room Temperature Ionic Liquids," in *Molten Salts XIII,* Delong, H. C.; Bradshaw, R. W.; Matsunaga, M.; Stafford, G. R.; Trulove, P. C. Eds. **2002**, *2002-19,* pp 213-223, The Electrochemical Society Proceedings Series, Pennington, NJ.

Presentations at Regional, National and International Meetings: (since joining UA faculty)

Invited Talks

22. "Alkylphosphine cyclometallation as a mode of catalyst deactivation and a source of active catalysts," 255th National Meeting of the American Chemical Society, New Orleans, LA, Marc 18-22, 2018. CATL 207
21. "From Mechanistic Understanding to Catalyst Application: Developing New Catalysts for Bond-Forming Reactions," Prof. A. M. Bains Memorial Lecture, Emerging Trends in Drug Development and Natural Products Conference, University of Delhi, New Delhi, Rajanistan, India, January 12-14, 2018.

20. "From Mechanistic Understanding to Catalyst Application: Developing New Catalysts for Bond-Forming Reactions," 24th Indian Society of Chemists and Biologists Conference, Jaipur, Rajanistan, India, January 11-13, 2018, Plenary Lecture. PL-10
19. "Unraveling The Impact Of Ligand Steric Electronic Properties On Metal-Catalyzed Bond-Forming Reactions," 23rd Indian Society of Chemistry and Biology Conference, Chennai, Tamil Nadu, India, February 8th-10th, 2017, Plenary Lecture. PL-1.
18. "Ligand design in palladium-catalyzed cross-coupling reactions to control catalyst performance, selectivity, and recovery," Central Regional Meeting of the American Chemical Society, Pittsburgh, PA, October 29th-November 1st, 2014. Paper 210.
17. "Ligand design for metal-catalyzed cross-coupling reactions: the role of size, flexibility, and electron donation in determining catalyst performance," 246th National Meeting of the American Chemical Society, Indianapolis, IN, September 8th-12th, 2013. CATL 32.
16. "Understanding the Role of Conformationally Flexible Phosphine Ligands in Promoting Cross-Coupling Reactions of Challenging Substrates," Global Conference on Catalysis, Dalian, China, June 29-July 1, 2013.
15. "Effect of ligand conformational flexibility on palladium-catalyzed cross-coupling reactions," 18th International Symposium on Homogeneous Catalysis, Toulouse, France, July 9-14th, 2012. OC-11. Selected oral contribution.
14. "Design and Application of Recoverable Aqueous-Phase Catalysts for Cross-Coupling Reactions," Shaughnessy, K. H.; 241st National Meeting of the American Chemical Society, Anaheim, CA, March 27-31st, 2011. I&EC 115.
13. "Aqueous-Phase Palladium-Catalyzed Cross-Coupling: Seeking Highly Active, Easily Recovered, and Recyclable Catalyst Systems," Shaughnessy, K. H., Green Chemistry Symposium, 39th Central Regional Meeting of the American Chemical Society, Columbus, OH, June 12th, 2008, Paper #241.
12. "Effects of Ligand Steric and Electronic Properties on Metal-Catalyzed Cross-Coupling Reactions," Shaughnessy, K. H., Homogeneous Catalysis Symposium, 39th Central Regional Meeting of the American Chemical Society, Columbus, OH, June 11th, 2008, Paper #106.
11. "Aqueous-Phase Palladium-Catalyzed Cross-Coupling: Seeking Highly Active, Easily Recovered, and Recyclable Catalyst Systems," Shaughnessy, K. H., 2nd International Symposium on Green Processing in the Pharmaceutical and Fine Chemical Industries, New Haven, CT May 29th, 2008.
10. "Effects of Ligand Steric and Electronic Properties on Metal-Catalyzed Cross-Coupling Reactions," Shaughnessy, K. H., Organometallics in the Southeast Symposium, 59th Southeastern Regional Meeting of the American Chemical Society, Greenville, SC, October 26th, 2007, Paper #448.
9. "Development of a Palladium-Catalyzed Coupling of Aryl Halides and in situ-Generated Aryl Chalcogenides," Shaughnessy, K. H.; Cho, J.-H., S and Se in the Southeast Symposium, 59th Southeastern Regional Meeting of the American Chemical Society, Greenville, SC, October 25th, 2007, Paper #94.
8. “Organometallic Reaction Mechanisms in Non-Traditional Solvents: Fundamental Studies and Applications to Catalysis,” Shaughnessy, K. H., Gordon Research Conference on Inorganic Reaction Mechanisms, Ventura, CA, February 21st, 2007.
7. “Steric and Electronic Properties of Sterically Hindered Hydrophilic Phosphines, Their Coordination Chemistry, and Catalytic Applications." Shaughnessy, K. H.,

Organometallic Reaction Mechanisms Symposium Honoring Jack Norton, Northwest Regional Meeting of the American Chemical Society, Reno, NV, June, 28th, 2006. Paper #81.

6. "Ionic Liquid Solvent Effects on Fundamental Organometallic Reactions." Shaughnessy, K. H., Ionic Liquids: Perspectives on the Present, Visions for the Future (Symposium #170), International Chemical Congress of Pacific Basin Societies, Honolulu Hawaii, December 18th, 2005, ENV-421
5. "Ionic Liquid Solvent Effects on the Rate and Mechanism of Fundamental Organometallic Reactions." Shaughnessy, K. H., Symposium on the Use of N-Heterocyclic Carbenes in Catalysis, 228th National Meeting of the ACS, Philadelphia, PA, August 25th, 2004. INOR-634.
4. "Coordination Polymerization of Alkenes in Ionic Liquid Solvents." Shaughnessy, K. H.; P'Pool, S. J.; Klingshirn, M. A.; Rogers, R. D., Ionic Liquids in Polymer Systems Symposium, 227th National Meeting of the ACS, Anaheim, CA, March 31st, 2004, POLY-600.
3, "Homogeneous Catalysis in Alternative Reaction Media: Applications and Mechanistic Studies." Shaughnessy, K. H., Organometallic and Materials Chemistry in the Southeast Symposium, 55th Southeast Regional Meeting of the ACS, Atlanta, GA, November 18th, 2003, Paper #460.
2. "Fundamental Studies and Applications of Alternative Reaction Media in Metal-Catalyzed Reactions," Shaughnessy, K. H., Organometallic Chemistry Symposium, 54th Southeast Regional Meeting of the ACS, Charleston, SC, November 15th, 2002, Paper 0588.
1. "Polar, Non-Coordinating Ionic Liquids as Solvents for Coordination Polymerization of Olefins," Shaughnessy, K.H.; Klingshirn, M. A.; P'Pool, S. J.; Holbrey, J. D.; Rogers, Robin D., Symposium on Ionic liquids as Green Solvents: Progress and Prospects, 224th National Meeting of the American Chemical Society (ACS), Boston, MA, August 21st, 2002, IEC-121.

Contributed Talks

34. "Generation of active palladium(0) catalyst species from air-stable palladium(II) precatalysts and their application in cross-coupling reactions," Shaughnessy, K. H., Gordon Research Conference on Organometallic Chemistry, Newport, RI, July 7-12, 2019.
33. "Catalytic Applications and Mechanistic Understanding of Conformationally Flexible Phosphines in Bond-Forming Reactions," Shaughnessy, K. H., Gordon Research Conference on Organometallic Chemistry, Newport, RI, July 8-13, 2018.
32. "Conformational flexibility as a design element in ligand design for palladium-catalyzed bond-forming reactions," Shaughnessy, K. H.; 253rd National Meeting of the American Chemical Society, April 2-6, 2017, San Francisco, CA. ORGN-368
31. "Catalytic Application and Mechanistic Studies of Neopentylphoshine Ligands in Pd-Catalyzed Coupling Reactions," Shaughnessy, K. H.; Gordon Research Conference on Organometallic Chemistry, Newport, RI, July 5-10, 2016.
30. "Control of reaction selectivity in palladium-catalyzed transformations through fine tuning of ligand structures." Shaughnessy, K. H., The International Chemical Congress of Pacific Basin Societies 2015, Honolulu, HI, December 15-20, 2016. INOR 658

29. "Control of reaction selectivity in palladium-catalyzed transformations through tuning of ligand structures." Shaughnessy, K. H., 250th National Meeting of the American Chemical Society, Boston, MA, August 16th-20th, 2015. ORGN-474
28. "Ligand-controlled product selectivity in palladium-catalyzed cross-coupling using neopentylphosphines," Shaughnessy, K. H., Organic Reactions and Processes Gordon Conference, Bryant University, July 13th-17th, 2014.
27. "Effect of ligand conformational flexibility on palladium-catalyzed cross-coupling reactions" Shaughnessy, K. H., 17th International Symposium on Organometallic Chemistry Directed Towards Organic Synthesis, Fort Collins, CO July 28th-August 1st, 2013.
26. "Hierarchically porous carbon monolith-supported palladium nanoparticles (ThruPore-STC-Pd): An air-stable and recyclable catalyst system," Shaughnessy, K. H.; Wiggins, W. C.; Speak, S. K.; Semmes, J. G.; Raders, S. M.; Sayler, F.; Yue, S.; Bakker, M. G. 245th National Meeting of the American Chemical Society, New Orleans, LA, April 7th-11th, 2013. ORGN 111
25. "Effect of Ligand Conformational Flexibility on Palladium-Catalyzed Cross-Coupling Reactions" Shaughnessy, K. H. 243rd National Meeting of the American Chemical Society, San Diego, CA, March 25th-29th, 2012. ORGN 423.
24. "Conformationally Flexible Alkylphosphines: Structural Studies and Catalytic Applications," Shaughnessy, K. H. Gordon Research Conference on Organometallic Chemistry, Newport, RI, July 10-15, 2011.
23. "Conformationally Flexible Phosphine Ligands in Palladium-Catalyzed cross-Coupling Reactions," Shaughnessy, K. H.; 241st National Meeting of the American Chemical Society, Anaheim, CA, March 27-31st, 2011. ORGN 99.
22. "Phosphine Steric and Electronic Effects on Pd-Catalysis: Reconciling Computational and Experimental Results," Shaughnessy, K. H., Gordon Research Conference on Organometallic Chemistry, Newport, RI, July 13th, 2009.
21. "The Role of Ligand Steric and Electronic Properties in Coordination Chemistry and Metal-Catalyzed Cross-Coupling Reactions," Shaughnessy, K. H., Gordon Research Conference on Organometallic Chemistry, Newport, RI, July 10th, 2007.
20. “Ligand Steric and Electronic effects on Catalyst Activity in Cross-Coupling Reactions,” Shaughnessy, K. H., National Meeting of the American Chemical Society, Chicago IL, March25th, 2007, INOR-59
19. "Steric and Electronic Properties of Sterically Hindered Hydrophilic Phosphines, Their Coordination Chemistry, and Catalytic Applications." Shaughnessy, K. H., National Meeting of the American Chemical Society, Atlanta, GA, March 26th, 2006, INOR-90.
18. "Efficient and Recyclable Catalysts for Palladium- and Rhodium-Catalyzed Cross-Coupling Reactions in Aqueous Solvents." Shaughnessy, K. H., Organic Reactions in Neoteric Media (Symposium #38), International Chemical Congress of Pacific Basin Societies, Honolulu Hawaii, December 18th, 2005, ORG-1368.
17. "Hydrophilic Catalysts for Cross-Coupling Reactions: Catalyst Development and Mechanistic Studies," Shaughnessy, K. H., Organometallic Gordon Conference (Poster), Newport, RI, July 13th-14th, 2005.
16. "New Ligands for Aqueous-Phase, Palladium-Catalyzed Cross-Coupling: Catalyst Activity and Application to Nucleoside Modification." Shaughnessy, K. H.; DeVasher, R.

B.; Moore, L. R.; Western, E. C.; Cho, J.-H. 228th National Meeting of the ACS, Philadelphia, PA, August 25th, 2004. ORGN-67

15. "Sterically Demanding, Water-Soluble Alkylphosphines: Coordination Chemistry an Applications to Pd-Catalyzed Cross- Coupling," Shaughnessy, K. H.; Booth, R. S.; Moore, L. R., 14th International Symposium on Homogeneous Catalysis, Munich, Germany, July 5-9th, 2004, P-0154.
14. "Ionic Liquid Solvent Effects on Fundamental Organometallic Reactions." Shaughnessy, K. H.; P'Pool, S. J.; Sliger, M. D., 14th International Symposium on Homogeneous Catalysis, Munich, Germany, July 5-9th, 2004, P-0153.
13. "Ionic Liquid Solvent Effects on Fundamental Organometallic Reactions." Shaughnessy, K. H.; P'Pool, S. J.; Sliger, M. D., 227th National Meeting of the ACS, Anaheim, CA, April 1st, 2004, INOR-943.
12. "Sterically Demanding, Water-Soluble Alkylphosphines: Coordination Chemistry and Applications to Pd-Catalyzed Cross-Coupling." Shaughnessy, K. H.; Booth, R. S., 227th National Meeting of the ACS, Anaheim, CA, March 31st, 2004, INOR-826.
11. "Sterically Demanding, Water-Soluble Alkylphosphines: Fundamental Studies and Applications," Shaughnessy, K. H., Organometallic Gordon Conference (Poster), Newport, RI, July 23rd-24th, 2003.
10. "Ionic Liquid Solvent Effect on Organometallic Reactions," Shaughnessy, K. H., Organometallic Gordon Conference (Poster), Newport, RI, July 23rd-24th, 2003.
9. "New Ligands for Aqueous-Phase Palladium Catalyzed Cross-Couplings: Catalytic Activity and Applications to Biomolecule Modification." Shaughnessy, K. H.; Booth, R. S.; Western, E. C.; Sliger, M. D.; Moore, L. R. 225th ACS National Meeting, New Orleans, LA, March 23rd, 2003, ORGN-55.
8. "Metal-Catalyzed Olefin Polymerization in Polar, Non-Coordinating Ionic Liquids," Shaughnessy, K. H.; P'Pool, S. J.; Klingshirn, M. A.; Holbrey,J. D.; Rogers, R. D. 224th ACS National Meeting, Boston, MA, August 20th, 2002, INOR-524.
7. "Modification of Unprotected Nucleosides using Water-Soluble Palladium Catalysts," Shaughnessy, K. H.; Western, E. C.; Gannett, P. M.; Daft, J. R.; Johnson II, E. M. 224th ACS National Meeting, Boston, MA, August 20th, 2002, ORGN-649.
6. "Synthesis of Bulky, Water-Soluble Alkylphosphines: Properties and Application to Palladium-Catalyzed Coupling Reactions." Shaughnessy, K. H.; Booth, R. S., and Ricketts, J. I., 53rd Southeast ACS Regional Meeting, Savannah, GA, September 2001, Paper 288.
5. "Bulky Water-Soluble Alkylphosphines for High-Activity Palladium-Catalyzed Coupling Reactions in Aqueous Solvents." Shaughnessy, K. H.; Booth, R. S.; and Ricketts, J. I., 53rd Southeast ACS Regional Meeting, Savannah, GA, September 2001, Paper 408.
4. "Bulky Water-Soluble Alkylphosphines for High-Activity Palladium-Catalyzed Coupling Reactions in Aqueous Solvents." Shaughnessy, K. H. and Booth, R. S., 222nd ACS National Meeting, Chicago, IL, August 2001, ORGN-604.
3. "Synthesis, Reactivity, and Application of Bulky, Water-Soluble Alkylphosphines." Shaughnessy, K. H. and Booth, R. S., 222nd ACS National Meeting, Chicago, IL, August 2001, INOR-477.
2. "Palladium Complexes of Water-Soluble Sterically Demanding Alkylphosphines: Structure and Aqueous-Phase Catalytic Activity." Shaughnessy, K. H. and Booth, R. S., Organometallic Gordon Research Conference, Newport, RI, July 2001.

1. "Synthesis and Application of Bulky, Water-Soluble Trialkylphosphines to Palladium-Catalyzed C-C Bond Forming Reactions." Shaughnessy, K. H., 52nd Southeast/56th Southwest Combined ACS Regional Meeting, New Orleans, LA, December 2000.

Contributed Talks Presented by Collaborators and Student Co-Authors:

98. "Effects of Ongoing Professional Learning Communities on Preservice Secondary Science Educators' Self-Efficacy Beliefs and Teaching Practices," Tawbush, R.; Sunal, D.;* Sunal, C.; O'Donnell, J.; Schad, R.; Shaughnessey, K. H.; Harville-York, H. Southeastern Association of Science Teacher Educators Meeting, Carollton, GA, October 3-6, 2019.
97. "Acquisition of a Single Crystal X-Ray Diffractometer for Structure Determination and Diffuse Scattering on Small Molecules, Macromolecules, and Materials," Papish, E. T.;* Allred, J. M.; Dunkle, J. A.; Rupar, P.; Shaughnessy, K. H., 70th Southeastern Regional Meeting of the American Chemical Society, August, GA, October 31-November 3, 2018. Poster #406
96. "Application of air-stable palladium(II) precatalysts to Suzuki cross-coupling reactions and C-H activation pf pyridine *N*-oxides." Howard, J. R.; Barnett, K. L; Shaughnessy, K. H.* 255th National Meeting of the American Chemical Society, New Orleans, LA, March 18-22, 2018. CHED 337
95. "Phosphine-free palladium catalysts for the direct arylation of heterocyclic aromatic compounds," Franklin, C.; Alaniz, S. A.; Shaughnessy, K. H.* 255th National Meeting of the American Chemical Society, New Orleans, LA, Marc 18-22, 2018. CHED 1572
94. "Synthesis and catalytic application of asymmetrically substituted 1,3-diphosphines," Headford, B. R.; Shaughnessy, K. H.* 255th National Meeting of the American Chemical Society, New Orleans, LA, Marc 18-22, 2018. ORGN 145
93. "Methods to reduce Pd(II) precatalysts to Pd(0) for cross-coupling reactions" Hu, H.; Shaughnessy, K. H.* 255th National Meeting of the American Chemical Society, New Orleans, LA, Marc 18-22, 2018. ORGN 31
92. "Application of air-stable palladium(II) precatalysts to Suzuki cross-coupling reactions and C-H activation pf pyridine *N*-oxides." Howard, J. R.; Barnett, K. L; Shaughnessy, K. H.* 69th Southeastern Regional Meeting of the American Chemical Society, Charlotte, NC, November 9-11, 2017. Paper 1122
91. "Mechanistic investigations of palladium(II) precatalysts: Effects of reaction conditions on precatalyst activity in the Suzuki cross-coupling of aryl bromides," Barnett, K. L.; Shaughnessy, K. H.* 253rd National Meeting of the American Chemical Society, April 2-6, 2017, San Francisco, CA. INOR-1164
90. "Mechanistic study of the bis(trineopentylphosphine)palladium catalyzed Buchwald-Hartwig amination reaction," Hu, H.; Shaughnessy, K. H.* 253rd National Meeting of the American Chemical Society, April 2-6, 2017, San Francisco, CA. INOR-814
89. "The E-Factor of the Thin Film and Its Characterization to Understand Why Water Influences a Heck Alkynylation," Hu, C.; Shaughnessy, K. H.; Hartman, R. L.* American Institute of Chemical Engineers National Meeting, San Francisco, CA, November 13-18, 2016.
88. "Mechanistic study of the effect of aryl halide and aryl amine steric properties on $Pd(PNp_3)_2$ catalyzed Buchwald-Hartwig amination," Hu, H., Shaughnessy, K. H. 68th Southeastern Regional Meeting of the American Chemical Society, Columbia, SC October 24-26th, 2016. Paper 1125

87. "Incorporation of transition metal complexes into polymers and their conversion to metal nanoparticles supported on hierarchically porous carbons," Bakker, M. G.*;, Kotgabi, T.; Shaughnessy, K.H.; Le Doux, C.; Cho, H.; van Zee, J. 68th Southeastern Regional Meeting of the American Chemical Society, Columbia, SC, October 24-26th, 2016. Paper 587
86. "Study on the effect of ligand incorporated metal on the graphitization and electrical conductivity of hierarchically porous monolithic carbon," Kotbagi, T.; Le Doux, C.; Cho, H.; van Zee, J.; Shaughnessy, K. H.; Bakker, M. G.* 67th Southeast/71st Southwest Joint Regional Meeting of the American Chemical Society, Memphis, TN, November 4-8, 2015, Paper 911
85. "Trialkylphosphines-derived palladacycle as a catalyst in the selective cross-dimerization of two terminal alkynes," Lauer, M. G.; Gobble, O.; Shaughnessy, K. H.* 250th National Meeting of the American Chemical Society, Boston, MA, August 16th-20th, 2015. AEI-72.
84. "Palladium-catalyzed coupling of *O*-benzylbenzimidoyl iodides and boronic acids," Sharma, P.; Binit, A.; Suraj, K.; Li, Z.; Shaughnessy, K. H.; Snowden, T. S.; Dolliver, D. D.* 249th ACS National Meeting, Denver, CO, March 22-26, 2015. CHED-1076
83. "Palladium Theory for Aqueous-Phase Catalyzed Cu-Free Sonogashira Couplings," Domier, R. C.; Alaniz, S.; Moore, J. N.; Shaughnessy, K. H.; Hartman, R. L.* American Institute of Chemical Engineers National Meeting, Atlanta, GA, November 16-21st, 2014. Paper 385710.
82. "Synthesis of air-stable monoligated palladium precatalysts and their applications in cross-coupling reactions," Barnett, K. L.; Pierce, H.; Wang, J.; Shaughnessy, K. H.* 248th National Meeting of the American Chemical Society, San Francisco, CA, August 10-14th, 2014. ORGN 0532.
81. "Utilizing neopentylphosphine ligands to control regioselectivity in the palladium-catalyzed Heck reaction of cyclic olefins," Lauer, M. G.; Shaughnessy, K. H.* 248th National Meeting of the American Chemical Society, San Francisco, CA, August 10-14th, 2014. ORGN 0084.
80. "Ortho-alkoxylation of diaryl ketoxime ethers," Kimball, E.; Pandey, A.; Dolliver, D. D.*; Shaughnessy, K. H.; Snowden, T. S. 247h National Meeting of the American Chemical Society, Dallas, TX, March 16-20th, 2014. CHED 1034.
79. "Continuous Fine Chemicals Processing With Aqueous Phase Organic Synthesis," Hartman, R. L.*; Flowers, B.; Domier, R. C.; Moore, J. N.; Shaughnessy, K. H.; American Institute of Chemical Engineers National Meeting, San Francisco, CA, November 3rd-8th, 2013. Paper 330917.
78. "Structural studies and activation mechanisms for air-stable neopentylphosphine palladium pre-catalysts," Welch, C. N.; Shaughnessy, K. H.* 245th National Meeting of the American Chemical Society, New Orleans, LA, April 7th-11th, 2013. INOR 1327
77. "Use of 2, 3, and 4 coordinate oxo-ligands in modeling the semiconductor interface of TiO_2 based dye-sensitized solar cells," Fraser, D. D.; Shaughnessy, K. H.* 245th National Meeting of the American Chemical Society, New Orleans, LA, April 7th-11th, 2013. INOR 1334
76. "Application of conformationally flexible neopentylphosphine ligands to palladium-catalyzed cross-coupling reactions of malonates with aryl halides," Semmes, J. G.;

Shaughnessy, K. H.* 245th National Meeting of the American Chemical Society, New Orleans, LA, April 7th-11th, 2013. ORGN 574

75. "Air-stable trialkylphosphine palladium complexes as precatalysts for cross-coupling reactions," Welch, C. N.; Shaughnessy, K. H.* 245th National Meeting of the American Chemical Society, New Orleans, LA, April 7th-11th, 2013. ORGN 450.
74. "Synthesis of new neophylphosphine palladium complexes and their use in Pd-catalyzed cross-coupling reactions," Jones, J. M.; Raders, S. M.; Shaughnessy, K. H.* 245th National Meeting of the American Chemical Society, New Orleans, LA, April 7th-11th, 2013. CHED 997
73. "Neophylphosphine-supported palladium catalysts for cross-coupling reactions," Thompson, M. K.; Raders, S. M.; Shaughnessy, K. H.* 245th National Meeting of the American Chemical Society, New Orleans, LA, April 7th-11th, 2013. CHED 993
72. "Synthesis of tridentate and tetradentate oxo-ligands used in octahedral titanium(IV) complexes," Brechtelsbauer, L. D.; Fraser, D. D.; Shaughnessy, K. H.* 245th National Meeting of the American Chemical Society, New Orleans, LA, April 7th-11th, 2013. CHED 1044
71. "Stereospecific Suzuki coupling reactions of *N*-alkoxyimidoyl iodides," Bhattarai, B. T.; Pandey, A.; Lanier, M. L.; Bordelon, A. S.; Adhikari, S.; Dinser, J. A.; Flower, P. F.; Wills, V. S.; Schneider, C. L.Dolliver, D. D.*; Shaughnessy, K. H.; Moore, J. N.; Raders, S. M.; Snowden, T. S.; McKim, A. S.; Fronczek, F. R. 245th National Meeting of the American Chemical Society, New Orleans, LA, April 7th-11th, 2013. CHED 932.
70. "Sonogashira coupling reactions of *N*-alkoxybenzimidoyl iodides and bromides," Pandey, A.; Bhattarai, B. T.; Adhikari, S.; Dolliver, D. D.*; Shaughnessy, K. H.; Moore, J. N.; Raders, S. M.; Snowden, T. S.; McKim, A. S.; Fronczek, F. R. 245th National Meeting of the American Chemical Society, New Orleans, LA, April 7th-11th, 2013. CHED 933.
69. "Negishi coupling reactions of *N*-alkoxybenzimidoyl iodides and bromides," Adhikari, S.; Bhattarai, B. T.; Pandey, A.; Dolliver, D. D.*; Shaughnessy, K. H.; Moore, J. N.; Raders, S. M.; Snowden, T. S.; McKim, A. S. 245th National Meeting of the American Chemical Society, New Orleans, LA, April 7th-11th, 2013. CHED 934.
68. "Application of new water-soluble phosphine ligands in palladium-catalyzed coupling reactions," Laskay, N. M.; Duque, K. S.; Moore, J. N.; Shaughnessy, K. H.* 245th National Meeting of the American Chemical Society, New Orleans, LA, April 7th-11th, 2013. CHED 994
67. "Synthesis and application of new water-soluble phosphine ligands in palladium-catalyzed reactions," Moore, J. N.; Shaughnessy, K. H.*; Duque, K. S.; Laskay, N. M.; 245th National Meeting of the American Chemical Society, New Orleans, LA, April 7th-11th, 2013. ORGN 110
66. "Formation of Hierarchically Porous Carbons and Application as Catalyst Supports." Yue, S.; Sayler, F. M.; Wiggins, C.; Raders, S. M.; Shaughnessy, K. H.; Bakker, M. G.* 64th Southeast Regional Meeting of the American Chemical Society, Raleigh, NC, November 14th-17th, 2012. Talk #574
65. "Heck Coupling Reactions on a Novel Palladium Catalyst" Wiggins, C.; Sayler, F. M.; Raders, S. M.; Yue, S.; Spear, S.; Bakker, M. G.*; Shaughnessy, K. H.* 64th Southeast Regional Meeting of the American Chemical Society, Raleigh, NC, November 14th-17th, 2012. Talk #321

64. "Novel Porous Materials as Catalysts and Catalyst Supports: Improving Heterogeneous Catalysis through Higher Surface Area and More Efficient Mass Transport" Sayler, F. M.; Spear, S.; Shaughnessy, K. H; Scogin, W.; Wiggins, C.; Raders, S. M.; Yue, S.; Bakker, M. G.* 64th Southeast Regional Meeting of the American Chemical Society, Raleigh, NC, November 14th-17th, 2012. Talk #185
63. "Novel Porous Materials as Catalysts and Catalyst Supports: Improving Heterogeneous Catalysis through Higher Surface Area and More Efficient Mass Transport" Bakker, M. G.*; Sayler, F. M.; Spear, S.; Shaughnessy, K. H; Scogin, W.; Wiggins, C.; Raders, S. M.; Yue, S. 68th Southwest Regional Meeting of the American Chemical Society, Baton Rouge, LA, November 4th-6th, 2012. Talk #310
62. "Heck Coupling Reactions on a Novel Palladium Catalyst" Wiggins, C.; Sayler, F. M.; Raders, S. M.; Yue, S.; Spear, S.; Bakker, M. G.*; Shaughnessy, K. H.* 68th Southwest Regional Meeting of the American Chemical Society, Baton Rouge, LA, November 4th-6th, 2012. Talk #310
61. "Negishi reaction of N-alkoxybenzimidoyl halides" Adhikari, S.; Bhattarai, B. T.; Pandey, A; Dolliver, D. D.*; Shaughnessy, K. H.; Moore, J. N.; McKim, A S. 68th Southwest Regional Meeting of the American Chemical Society, Baton Rouge, LA, November 4th-6th, 2012. Talk #81
60. "Sonogashira reactions of O-alkylbenzimidoyl iodides and bromides" Pandey, A; Bhattarai, B. T.; Adhikari, S.; Dolliver, D. D.*; Shaughnessy, K. H.; Moore, J. N.; McKim, A S. 68th Southwest Regional Meeting of the American Chemical Society, Baton Rouge, LA, November 4th-6th, 2012. Talk #80
59. "Synthesis of single geometric isomers of oxime ethers through palladium-catalyzed Suzuki cross coupling reactions" Bhattarai, B. T.; Pandey, A; Adhikari, S.; Dolliver, D. D.*; Shaughnessy, K. H.; Moore, J. N.; McKim, A S. 68th Southwest Regional Meeting of the American Chemical Society, Baton Rouge, LA, November 4th-6th, 2012. Talk #80
58. "Synthesis of new bisphosphine ligands and their use in various palladium-catalyzed cross-coupling reactions," Raders, S. M.; Semmes, J. G.; Bevans, S. L.; Shaughnessy, K. H.* 244th National Meeting of the American Chemical Society, Philiadelphia, PA, August 20th-24th, 2012. ORGN 727.
57. "Synthesis of (*t*-Bu_2PNeophyl)Pd(allyl)Cl and its use in palladium-catalyzed cross-coupling reactions," Raders, S. M.; Jones, J. M.; Shaughnessy, K. H.* 244th National Meeting of the American Chemical Society, Philiadelphia, PA, August 20th-24th, 2012. ORGN 679.
56. "Synthesis of New Water-Soluble Phosphine Ligands for Environmentally Benign Reactions" Moore, J. N.; Catt, E. J.; Hamilton, A,; and Shaughnessy, K. H.* 243rd National Meeting of the American Chemical Society, San Diego, CA, March 25th-29th, 2012. ORGN 705.
55. "Organometallic Models of the Semiconductor Interface of TiO_2-Based Dye Sensitized Solar Cells" Fraser, D. D.; and Shaughnessy, K. H.* 243rd National Meeting of the American Chemical Society, San Diego, CA, March 25th-29th, 2012. INOR 1043.
54. "3-(Di-*tert*-butylphosphonium)propane sulfonate as a recyclable ligand for palladium-catalyzed cross-coupling reactions of aryl bromides and chlorides" Mustain, R. T.; Moore, J. N.; and Shaughnessy, K. H.* 243rd National Meeting of the American Chemical Society, San Diego, CA, March 25th-29th, 2012. CHED-961.
53. "Synthesis of new sterically-demanding, flexible neophyl phosphines and their use in

palladium-catalyzed cross-coupling reactions," Raders, S. M.; Miller, A. D.; Coleman, K. M.; and Shaughnessy, K. H.* 242nd National Meeting of the American Chemical Society, Denver, CO, August 28th-September 1st, 2011. ORGN 268.

52. "Synthesis of ferrocenyl phosphines for the use in transition-metal catalyzed reactions," Raders, S. M. and Shaughnessy, K. H.* 242nd National Meeting of the American Chemical Society, Denver, CO, August 28th-September 1st, 2011. ORGN 259.
51. "Synthesis of air-stable palladium precatalysts and their reactivity in cross-coupling reactions," Welch, C. N. and Shaughnessy, K. H.* 242nd National Meeting of the American Chemical Society, Denver, CO, August 28th-September 1st, 2011. ORGN 231.
50. "Use of neopentylphosphines as efficient ligands in the palladium-catalyzed α-arylation of aryl bromides and chlorides with ketones," Raders, S. M.; Jones, J. M.; Shaughnessy, K. H.*, 66th Southwest and 62nd Southeast Regional Meeting of the American Chemical Society, New Orleans, LA, November 30th-December 1st, 2010. Talk # 634
49. "Use of trineopentylphosphine in the formation of sterically hindered diaryl amines in the Buchwald-Hartwig amination," Raders, S. M.; Parks, J. K.; Leißing, T. M.; Shaughnessy, K. H.*, 66th Southwest and 62nd Southeast Regional Meeting of the American Chemical Society, New Orleans, LA, November 30th-December 1st, 2010. Talk # 633
48. "Suzuki coupling of sterically hindered substrates using alkyl phosphine ligands: How conformational flexibility and steric factors can influence catalytic ability," Moore, J. N.; Shaughnessy, K. H.*, 66th Southwest and 62nd Southeast Regional Meeting of the American Chemical Society, New Orleans, LA, November 30th-December 1st, 2010. Poster # 543
47. "Syntheses of organometallic complexes that model the semiconductor interface of TiO_2 based dye-sensitized solar cells" Fraser, D. D.; Shaughnessy, K. H.*, 66th Southwest and 62nd Southeast Regional Meeting of the American Chemical Society, New Orleans, LA, November 30th-December 1st, 2010. Poster # 542
46. "Synthesis and Reactivity of Neopentylphosphine Palladium Dichloride Dimers," Welch, C. N.; Shaughnessy, K. H.*, 66th Southwest and 62nd Southeast Regional Meeting of the American Chemical Society, New Orleans, LA, November 30th-December 1st, 2010. Poster # 237
45. "Development of highly active palladium complexes for organic cross-coupling reactions" Corbin, W. C; Shaughnessy, K. H.*, 239th National Meeting of the American Chemical Society, San Francisco, CA, March 21-25th, 2010. CHED-815
44. "Palladium-Catalyzed Carbonylation of Trifluoromethylated Arenes and Heteroarenes using an Water-Soluble, Air-Stable Phosphine Ligand System," Hennek, M. D.; Brown, W. S.; Pair, E. S.; Sonnier, M. Q.; Khan, M.; Thrasher, J. S.; Shaughnessy, K. H.* 19th International Symposium on Fluorine Chemistry, Jackson Hole, WY, August 26th, 2009.
43. "Synthesis of Water-Soluble Phosphines and Their Application to Recyclable, Aqueous-Phase Palladium Catalysts," Box, H. K.; Shaughnessy, K. H.* 86th Annual Meeting of the Alabama Academy of Science, Livingston, AL, March 25th-27th, 2009. **1st Place, Undergraduate Poster Competition, Chemistry Division.**
42. "The cyanation of aryl halides under mild conditions using bulky neopentyl phosphine ligands," Hill, L. L.; Shaughnessy, K. H.* 235th National Meeting of the American Chemical Society, New Orleans, LA, April 9th, 2008, ORGN 692.
41. "Palladium catalyzed carbonylation with neopentyl phosphine and water-soluble phosphine ligands to promote activation of aryl halides," Brown, W. S.; Shaughnessy, K.

H.* 235th National Meeting of the American Chemical Society, New Orleans, LA, April 9th, 2008, ORGN 637.

40. "Palladium/phosphine catalyzed coupling of aryl bromides with phenyl selenolates: Synthesis of asymmetric diaryl selenides," Brown, F. V.; Shaughnessy, K. H.* 235th National Meeting of the American Chemical Society, New Orleans, LA, April 7th, 2008, CHED 572.
39. "Palladium catalyzed Suzuki coupling with water-soluble phosphine ligands to promote activation of aryl halides," Sonnier, M. Q.; Brown, W. S.; Shaughnessy, K. H.* 235th National Meeting of the American Chemical Society, New Orleans, LA, April 7th, 2008, CHED 569.
38. "Palladium catalyzed Sonogashira coupling with water-soluble phosphine ligands to promote activation of aryl halides," Boykin, D. D.; Brown, W. S.; Shaughnessy, K. H.* 235th National Meeting of the American Chemical Society, New Orleans, LA, April 7th, 2008, CHED 568.
37. "Palladium catalyzed coupling reactions using water-soluble phosphine ligands: DTBPSP and DAPSP and their ability to promote coupling reactions," Killian, M. E.; McLendon, S. E.; Brown, W. S.; Shaughnessy, K. H.* 235th National Meeting of the American Chemical Society, New Orleans, LA, April 7th, 2008, CHED 567.
36. "Investigations of Hartwig-Buchwald amination reactions in air with new bulky neopentyl phosphine palladium catalysts," Crowell, J. L.; Tutwiler, S.; Hill, L. L.; Shaughnessy, K. H.* 235th National Meeting of the American Chemical Society, New Orleans, LA, April 7th, 2008, CHED 537.
35. "Palladium catalyzed coupling reactions using water-soluble phosphine ligands: DTBPSP and DAPSP and their ability to promote Suzuki-Miryaura, Heck, Sonagashira, and Carbonylation reactions," Brown, W. S.; Sonnier, M. Q.; Killian, M. E.; McLendon, S. E.; Boykin, D. D.; Shaughnessy, K. H.* 235th National Meeting of the American Chemical Society, New Orleans, LA, April 7th, 2008, ORGN 253.
34. "Palladium catalyzed Suzuki coupling with water-soluble phosphine ligands to promote activation of aryl halides," Sonnier, M. Q.; Shaughnessy, K. H.* 85th Alabama Academy of Science Meeting, Birmingham, AL, March 20th, 2008. **1st Place, Undergraduate Paper Competition.**
33. "Synthesis and characterization of new palladium complexes containing neopentyl phosphine ligands," Hill, L. L.; Shaughnessy, K. H.* 85th Alabama Academy of Science Meeting, Birmingham, AL, March 20th, 2008. **2nd Place, Poster Competition**
32. "Palladium catalyzed coupling reactions using water-soluble phosphine ligands: DTBPSP and DAPSP and their ability to promote Suzuki-Miryaura, Heck, Sonagashira, and Carbonylation reactions," Brown, W. S.; Sonnier, M. Q.; Killian, M. E.; McLendon, S. E.; Boykin, D. D.; Shaughnessy, K. H.* 85th Alabama Academy of Science Meeting, Birmingham, AL, March 20th, 2008.
31. "Palladium catalyzed coupling reactions using water-soluble phosphine ligands: DTBPSP and DAPSP and their ability to promote coupling reactions," Killian, M. E.; McLendon, S. E.; Brown, W. S.; Shaughnessy, K. H.* 85th Alabama Academy of Science Meeting, Birmingham, AL, March 20th, 2008.
30. "Investigations of cross coupling reactions using new bulky neopentylphosphine ligands," Hill, L. L.; Shaughnessy, K. H.* 234th National Meeting of the American Chemical Society, Boston, MA, August 19-23rd, 2007.

29. "Synthesis and Characterization of New Palladium Complexes Containing Neopentylphosphine Ligands," Hill, L. L.; Shaughnessy, K. H.* 233rd National Meeting of the American Chemical Society, Chicago, IL, March 26th, 2007, INOR-949.
28. "Mechanistic Insight into the Rhodium/Phosphine Catalyzed Coupling of Aldehydes and Phenylboronic Acid Derivatives," Brown, W. S.; Shaughnessy, K. H.* 233rd National Meeting of the American Chemical Society, Chicago, IL, March 26th, 2007, INOR-612.
27. "Palladium-Catalyzed Coupling of Amines and Aryl Halides Using Functionalized Neopentylphosphines," Smith, J. M.; Shaughnessy, K. H.* 233rd National Meeting of the American Chemical Society, Chicago, IL, March 26th, 2007, CHED-767.
26. "Palladium-Catalyzed Suzuki-Miyaura Coupling Reactions using Neopentylphosphines," Brown, W. S.; Pair, E.; Sonnier, M. Q.; Khan, M.; Shaughnessy, K. H.* 233rd National Meeting of the American Chemical Society, Chicago, IL, March 25th, 2007, ORGN-149.
25. "Hartwig-Buchwald Amination under Mild Conditions using Neopentyl Alkylphosphine Ligands." Hill, L. L.; Moore, L. R.; Huang, R.; Shaughnessy, K. H.* 231st National Meeting of the American Chemical Society, Atlanta, GA, March 27th, 2006, ORGN-561.
24. "Design and Applications of Water-Soluble Ligands for Coupling Reactions." Moore, L. R. and Shaughnessy, K. H.* 231st National Meeting of the American Chemical Society, Atlanta, GA, March 27th, 2006, ORGN-453.
23. "Effects of ionic liquids on Oxidative Addition to Square Planar Iridium and Rhodium Complexes." P'Pool, S. J. and Shaughnessy, K. H.* 231st National Meeting of the American Chemical Society, Atlanta, GA, March 29th, 2006, INOR-648.
22. "Studies on the TXPTS-Pd Aqueous-Phase Catalyst System." O'Halloran, K. P. and Shaughnessy, K. H.* 231st National Meeting of the American Chemical Society, Atlanta, GA, March 27th, 2006, CHED-951.
21. "Palladium-Catalyzed Reactions for Nucleoside Modification." Prickett, C. D.; Cho, J.-H.; and Shaughnessy, K. H.* 231st National Meeting of the American Chemical Society, Atlanta, GA, March 27th, 2006, CHED-453.
20. "Evaluation of a Cellulose Supported Palladium Catalyst." Carmichael, F. T. and Shaughnessy, K. H.* 231st National Meeting of the American Chemical Society, Atlanta, GA, March 27th, 2006, CHED-392.
19. "Palladium-Catalyzed Reactions for Nucleoside Modification." Prickett, C. D.; Cho, J.-H.; and Shaughnessy, K. H.* 83rd Meeting of the Alabama Academy of Science, Troy, AL, March 16th, 2006, Chemistry, Section II, #11. **First place, student poster competition.**
18. "Evaluation of a Cellulose Supported Palladium Catalyst." Carmichael, F. T. and Shaughnessy, K. H.* 83rd Meeting of the Alabama Academy of Science, Troy, AL, March 16th, 2006, Chemistry, Section II, #9.
17. "Synthesis of New Water-Soluble Metal-*N*-Heterocyclic Carbene Complexes," Cooks, S. M.; Moore, L. R.; Shaughnessy, K. H.* 229th National Meeting of the American Chemical Society, San Diego, CA, March 14th, 2005.
16. "Synthesis of New Water-Soluble Metal-*N*-Heterocyclic Carbene Complexes," Cooks, S. M.; Moore, L. R.; Shaughnessy, K. H.* 56th Southeast Regional Meeting of the American Chemical Society, Research Park Triangle, NC, November 14th, 2004, Paper #714.
15. "Palladium-Catalyzed Hydroesterification of Styrene in Ionic Liquids." Klingshirn, M. A.; P'Pool, S. J.; Shaughnessy, K. H.*; Rogers, R. D.*, 227th National Meeting of the ACS, Anaheim, CA, March 30th, 2004, INOR-770.

14. "Efficient Palladium-Catalyzed Cross-Coupling Reactions of Halonucleosides in Aqueous Media using Water-Soluble Phosphines." Western, E. C. and Shaughnessy, K. H.*, 55th Regional Meeting of the ACS, Atlanta, GA, November 18th, 2003, Paper #686.
13. "Water-Soluble Palladacycles for Suzuki-Miyaura Cross-Couplings in Water." Huang, R. and Shaughnessy, K. H.*, 55th Regional Meeting of the ACS, Atlanta, GA, November 18th, 2003, Paper #660.
12. "New Applications for Water-Soluble Alkylphosphine Ligands in Palladium-Catalyzed Cross-Coupling Reactions." Booth, R. S. and Shaughnessy, K. H.*, 55th Regional Meeting of the ACS, Atlanta, GA, November 18th, 2003, Paper #654.
11. "Kinetic Study of Oxidative Addition in Ionic Liquids." P'Pool, S. J. and Shaughnessy, K. H.*, 55th Regional Meeting of the ACS, Atlanta, GA, November 18th, 2003, Paper #634.
10. "Palladium-Catalyzed Cross-Coupling Reactions using Water-Soluble, Ortho-Substituted Arylphosphine Ligands." Moore, L. R. and Shaughnessy, K. H.*, 55th Regional Meeting of the ACS, Atlanta, GA, November 18th, 2003, Paper #630.
9. "Structural Investigation of Water-Soluble Alkylphosphines Palladium Catalysts and Applications for Cross-Coupling Reactions." Booth, R. S. and Shaughnessy, K. H.*, 55th Regional Meeting of the ACS, Atlanta, GA, November 17th, 2003, Paper #382.
8. "Di-*tert*-butyl(ferrocenylmethyl)phosphine: Properties and use in Palladium-Catalyzed Cross-Coupling Reactions." Sliger, M. D. and Shaughnessy, K. H.*, 55th Regional Meeting of the ACS, Atlanta, GA, November 17th, 2003, Paper #381.
7. "Synthesis of Novel Chelating Water-Soluble Diphosphines." Sandrock, D. L.; Sliger, M. D.; Shaughnessy, K. H.*, 55th Regional Meeting of the ACS, Atlanta, GA, November 16th, 2003, Paper #935.
6. "Polar, Non-Coordination Ionic Liquids as Solvents for Coordination Polymerization of Olefins," P'Pool, S. J.; Klingshirn, M. A.; Holbrey, J. D.; Rogers, R. D., Shaughnessy, K. H.*, 225th ACS National Meeting, New Orleans, LA, March 23rd, 2003, ORGN-57.
5. "Efficient One-Step Suzuki Arylation of Unprotected Bromonucleosides using Water-soluble Palladium Catalysts," Western, E. C.; Shaughnessy, K. H.*, 225th ACS National Meeting, New Orleans, LA, March 23rd, 2003, ORGN-56.
4. "Water-Soluble Alkylphosphines Ligands for Palladium-Catalyzed Cross-Coupling Reactions," Booth, R. S.; Moore, L. R.; Shaughnessy, K. H.*, 54th Southeast Regional Meeting of the ACS, Charleston, SC, November 14th, 2002, Paper 0277.
3. "Polar, Non-Coordinating Ionic Liquids as Novel Solvents for Coordination Polymerization of Olefins," P'Pool, S. J.; Klingshirn, M. A.; Holbrey, J. D.; Rogers, R. D.; Shaughnessy, K. H.*, 54th Southeast Regional Meeting of the ACS, Charleston, SC, November 14th, 2002, Paper 0275.
2. "Palladium-Catalyzed Cross-Coupling Reactions of Unprotected Halonucleosides using Water-Soluble Phosphines," Western, E. C.; Shaughnessy, K. H.*, 54th Southeast Regional Meeting of the American Chemical Society (ACS), Charleston, SC, November 14th, 2002, Paper 0270.
1. "Palladium-Catalyzed CO/Alkene Copolymerization in Room-Temperature Ionic Liquids." Rogers, R. D.; Klingshirn, M. A.; Broker, G. A.; Holbrey, J. D.; Shaughnessy, K. H.*, 222nd ACS National Meeting, August 2001, Chicago, IL, IEC-21.

Presenting author is underlined and principle investigator is indicated with an asterisk.

General Interest Talks:

4. "Chemistry's Role in a Sustainable Future," UAB Student Chapter of the American Chemical Society, Birmingham, AL, March 16th, 2015
3. "Chemistry's Role in a Sustainable Future," UAB Student Chapter of the American Chemical Society, Birmingham, AL, April 14th, 2014.
2. "Sustainable (Green) Chemistry," UAB Student Chapter of the American Chemical Society, Birmingham, AL, April 15th, 2013.
1. "Chemistry's Role in a Sustainable Future: How to Make the Things We Need With Minimal Environmental Impact," Meeting of the Alabama Section of the American Chemical Society, Birmingham, AL, November 7th, 2007.

Invited Seminars:

52. University of Havana, Faculty of Chemistry, March 2019
51. Mississippi College, October 2018
50. Tulane University, November 2016
49. Aristotle University, Thessaloniki, Greece, May 2015
48. Truman State University, March 2015
47. Vanderbilt University, September 2014
46. Tennessee Technical University, March 2014
45. Georgia Southern University, February 2014
44. Mississippi State University, April 2013
43. Florida International University, November 2012
42. University of South Alabama, September 2012
41. Spring Hill College, September 2012
40. Ball State University, December 2011
39. Northwest Normal University, Lanzhou China, October 2011
38. State Key Laboratory in Applied Organic Synthesis, Lanzhou University, China, October 2011
37. University of Southern Mississippi, September 2011
36 Auburn University, November 2010
35. University of Mississippi, April 2010
34. Hitachi Maxell, Japan July 2010
33. Mitsubishi Chemical Corporation, Japan July 2010
32. University of Missouri-St. Louis, March 2010
31. Murray State University, February 2010
30. Mercer University, January 2009
29. CCNY-CUNY, October 2008
28. Tennessee State University, March 2008
27. Rose-Hulman Institute of Technology, October 2007
26. University of Illinois-Springfield, October 2007
25. FMC, Lithium Division, September 2007
24. University of Tennessee-Chattanooga, February 2007
23. Union University, April 2006
22. University of Alabama at Huntsville, December 2005
21. Mississippi State University, April 2005
20. University of Delaware, March 2005
19. Shippensburg State University, March 2005

18. Texas A&M University, February 2005
17. University of Kansas, January 2005
16. FMC Lithium Division, November 2004
15. University of Utah, October 2004
14. University of Kansas, October 2004
13. University of Alabama at Birmingham, October 2004
12. University of Southern Mississippi, September 2004
11. College of William and Mary, April 2004
10. Virginia Commonwealth University, April 2004
9. U.S. Naval Academy, April 2004
8. West Virginia University, October 2003
7. University of Nevada-Reno, October 2003
6. University of Nebraska, September 2003
5. The Ohio State University, May 2003
4. Auburn University, November 2002
3. University of Mississippi, October 2002
2. University of South Alabama, October 2001
1. University of Tennessee-Chattanooga, January 2000

Current and Pending Support:

- ACS-PRF, "Cooperative Bond Activation Promoted by Metal Complexes of Ligands Containing Proximal Basic Sites," PI, $110,000, 8/15/18-8/31/20.
- NSF-MRI (CHE-1828078), "MRI: Acquisition of a Single Crystal X-Ray Diffractometer for Structure Determination and Diffuse Scattering on Small Molecules, Macromolecules, and Materials," co-PI (PI, Elizabeth Papish), $339,587, 7/15/18-7/14/20.
- NSF (DUE-1660557), "The University of Alabama Noyce Teaching Fellows Program," co-PI (PI, Dennis Sunal), $1,495,000, 6/1/17-5/31/23.

Prior External Funding:

- NSF (DUE-1340069), "Noyce Scholars Program at The University of Alabama," co-PI (PI, Dennis Sunal), $1,450,000, 10/1/13–9/30/18.
- ThruPore Technology (NSF Subcontract), " Increasing Production of Palladium Supported on Hierarchically Porous Carbon," PI, $89,000, 10/1/16-9/30/17.
- NSF (CBET-1264630), "Microreaction Engineering of Aqueous-Phase Metal-Catalyzed Reactions," co-PI (PI, Ryan Hartman), $353,830, 8/15/13 – 7/31/16.
- ThruPore Technology (NSF subcontract), SBIR Phase 1: Development and Validation Of Palladium Supported On Hierarchically Porous Monolithic Carbon Catalysts," PI, $26,482, 1/1/14-12/31/14.
- Research Stimulation Program, University of Alabama "Acceleration and Intensification of Microreactor Development and Commercialization," co-PI (PI, Dr. Martin Bakker), $70,000, 3/1/13-2/28/15.
- NSF (CHE-1058984), "Experimental and Theoretical Study of Ligand Steric Effects in Catalysis," PI (co-PI, David Dixon), $348,000, 10/1/11-9/30/15.
- NSF (RUI-1111916): Synthesis of Single Geometric Isomers of N-Substituted Ketimines: Starting Materials for the Synthesis of Asymmetric Amines, co-PI (PI, Debra Dolliver, SE Louisiana U), $218,000, 9/1/11 – 8/31/15.

- College Academy for Research and Creative Activity, "Model Study of Dye-TiO_2 Interactions in Dye-Sensitized Solar Cells," PI, $11,400.
- College Academy for Improving Student Success, "Pilot Study of Peer-Led Mentoring in CH 101," PI (co-PIs Joseph Thrasher, Thomas Vaid), $9,000
- NSF-MRI, "Acquisition of a Liquid Chromatograph-Mass Spectrometer," co-PI (PI, Carolyn Cassady), $348,093, 02/01/07-01/31/09.
- NSF, "REU Site: Research Experiences for Undergraduates in Chemistry at the University of Alabama," program committee (PD, John Vincent and Stephen Woski), $567,385, 02/01/07 – 01/31/10.
- FMC, Lithium Division, "Synthesis and Catalytic Application of Sterically Demanding, Chelating Diphosphines and Water-Soluble Phosphines," PI, $49,500, 2/1/08-12/31/09.
- FMC, Lithium Division, "Functionalized Neopentylphosphines as Ligands in Pd-Catalyzed Coupling Reactions," PI, $22,623, 12/1/06-12/31/07
- UA, Research Activity Council, "Metal-Catalyzed Electrophilic Aromatic Fluorination", PI, $5,000, 5/1/2006 – 4/31/2008
- NSF—Course, Curriculum, and Laboratory Improvement, "NMR Spectroscopy as a Cornerstone Technique in the Undergraduate Chemistry Curriculum," PI (co-PI, Russell Timkovich), $120,728, 9/1/03 – 8/31/06.
- FMC, Lithium Division, "Evaluation of Neopentylphosphines as Ligands in Pd-Catalyzed Cross-Coupling Reactions," PI, $19,500, 8/150/05 – 1/31/06.
- ACS-PRF "Ionic Liquid Solvent Effects on Fundamental Organometallic Transformations," PI, $40,000, 5/1/04 – 8/31/05
- NSF—Technologies for a Sustainable Environment (CHE-0124255), "High Activity Catalysts for Carbon-Carbon Bond Formation in Water Based on Bulky Water-Soluble Alkylphosphines," PI, $5,100 (REU supplement), 6/1/04-8/15/04.
- NSF—Technologies for a Sustainable Environment (CHE-0124255), "High Activity Catalysts for Carbon-Carbon Bond Formation in Water Based on Bulky Water-Soluble Alkylphosphines," PI, $5,100 (REU supplement), 6/1/03-8/15/03.
- NSF—Technologies for a Sustainable Environment (CHE-0124255), "High Activity Catalysts for Carbon-Carbon Bond Formation in Water Based on Bulky Water-Soluble Alkylphosphines," PI, $336,000, 1/01/02 - 12/31/04.
- Research Corporation, Research Innovation Awards, "Development, and Application to Catalyst Discovery, of a Parallel, High Throughput Assay for Measuring Reaction Yield and Enantioselectivity," PI, $34,549, 5/1/01-12/31/03.
- University of Alabama—Innovative Instructional Development Program, "Development of Web-Based, Interactive Organic Reaction Mechanism Tutorials," PI, $4,970, 1/103-8/15/03.
- University of Alabama—School of Mines and Energy Development, "Development of new catalysts for environmentally benign, aqueous-phase reactions," PI, $19,783, 5/1/01-4/30/02.
- DuPont Corporation, Aid to Education Grant, PI, $10,000, 5/1/01.
- The University of Alabama Research Activity Council, "Development of a Fluorometric, High-Throughput Assay for Determination of Activity and Enantioselectivity in Metal-Catalyzed Reactions," PI, $4,790, 4/1/00-3/31/02

Collaborators:

- Martin G. Bakker, Dept. of Chemistry & Biochemistry, The University of Alabama

- Thomas Colacot, Johnson-Matthey
- Pierre Dixneuf, University of Rennes
- David A. Dixon, Dept. of Chemistry & Biochemistry, The University of Alabama
- James Gleason, Dept. of Mathematics, The University of Alabama
- JW Harrell, Physics, The University of Alabama
- Ryan L Hartman, Chemical Engineering, NYU
- Árpad Molnár, Dept. of Organic Chemistry, Szeged University, Hungary
- Elizabeth Papish, Dept. of Chemistry & Biochemistry, The University of Alabama
- Franchessa Sayler, ThruPore Technologies
- Denis Sunal, Secondary Education, The University of Alabama
- Cynthia Sunal, Secondary Education, The University of Alabama
- Rainer Schad, Dept. of Physics, The University of Alabama
- Jeremy Zelkowski, Mathematics, The University of Alabama

Students Mentored:

Current:

Graduate (6): Spencer Alaniz (2013-present), Benjamin Headford (2013-present), Corrie Burlas (2016-present), Jordan Pierce (2017-present), Andrea Nuñez-Leon (2019-present), Matthew Delahay (2019-present)

Undergraduate (2): Tomascz Gruchala (fall 2018-present), Madeline Plunkett (spring 2019-present)

Former

- Post-doctoral Associate (4):
    - Huaiyuan "Ethan" Hu (2017-present):
    - Dr. Matthew Lauer (2013-2015): PharmAgra Labs, Inc.
    - Dr. Steven Raders (2010-2012): Lubrizol
    - Dr. Michael Sliger (2002-2004): Duracell, Bethell, CT.
- Graduate (15):
    - Kerry Barnett, PhD (2013-2017): Assistant Professor, University of Central Arkansas
        - *Air-Stable Palladium(II) Precatalysts: Synthesis, Properties, and Applications in Cross-Coupling Reactions*
          Department of Chemistry Outstanding Dissertation Award
    - Huaiyuan "Ethan" Hu, PhD (2015-2016): Post-doctoral fellow, Shaughnessy group
        - *Part A: Arenepolythiols Synthesis And Doping Study Of Semiconducting Metal-Organic Framework; Part B: Mechanistic Study Of The Bis(Trineopentylphosphine)Palladium Catalyzed Buchwald-Hartwig Amination*
    - Jeffrey Semmes (2011-2016): unknown
    - Dayne Fraser, MS, non-thesis, (2008-2015): quality control chemist, Coca-Cola
    - Jane N. Moore, MS, PhD (2009-2014): student, UA School of Dentistry
        - *Synthesis and Application of Sterically Flexible and Water-Soluble Phosphine Ligands in Palladium Catalysis*
    - Nigel Welch, MS, non-thesis (2008-2013): unknown

- Rambhoopal Kantam, MS, non-thesis (2011-2012): IT Developer, Informatica
- William Scott Brown, PhD (2004-2009): Teacher, Trigg County Public Schools
  - *Design and Synthesis of Phosphine Ligands for Palladium-Catalyzed Coupling Reactions*
- Lensey L. Hill, PhD (2004-2009): Daikin America
  - *Investigations of Cross Coupling Reactions: Synthesis and Scope of New Neopentyl Phosphine Ligands and Pre-formed Palladium Catalysts*
- Joon-Hyung Cho, PhD (2002-2007): ThruPore Technologies
  - Dissertation Title: *Part I. Palladium -Catalyzed Alkenylation and Alkynylation of Nucleosides in Aqueous Media. Part II. Palladium-Catalyzed Carbon-Selenium Bond formation for Unsymmetrical Diselenides*
- Lucas R. Moore, MS, PhD (2002-2006): Manager, Technical Customer Service Group, ArrMaz
  - Dissertation Title: *Ligand Design and Application Toward Palladium-Catalyzed Cross-Coupling Reactions*
- S. Justin P'Pool, MS, PhD (2001-2006): Adjunct Professor, University of Indianapolis
  - Dissertation Title: *Polar, Weakly Coordinating Ionic Liquids as Solvents for Fundamental Organometallic Reactions*
- Elizabeth Western, MS, PhD (2001-2005): Medical Doctor, Druid City Medicine
  - Thesis Title: *Efficient Modification of Halonucleosides Using Suzuki-Miyaura Coupling in Aqueous Media*
    - **College of Arts & Sciences Outstanding Thesis, 2004**
  - Dissertation Title: *Palladium-Catalyzed Modification of Halonucleosides: Methodology Development and Mechanism Determination*
    - **University of Alabama Outstanding Dissertation Award, 2007**
- Rongcai Huang, MS, PhD (2000-2005): Olon Ricerca Bioscience LLC
  - Dissertation Title: *Part I. Asymmetric Hydrosilylation of Acetophenone Using Titanium Catalysts; Part II. Synthesis of Water-Soluble Palladacycles and Their Applications to the Suzuki Reaction; Part III. Rhodium-Catalyzed Addition of Aryl and Alkenylboronic Acids to Aldehydes*
- Rebecca B. DeVasher, PhD (2000-2004): Associate Professor, Rose-Hulman Institute, Terre Haute, IN
  - Dissertation Title: *Water-Soluble Alkylphosphines as Ligands in Palladium-Catalyzed Aqueous-Phase Cross-Coupling Reactions: Mechanistic Advances and Catalytic Activity*

- Undergraduate (99):
  - Michael Palmer (2000): Earned MD from UA School of Medicine. Completed residency in internal medicine at Tulane. Currently on fellowship to study gastroenterology at Tulane.
  - Julie Pigza (2000 REU student): Assistant Professor, Dept. of Chemistry, University of Southern Mississippi
  - Andrew Reed (2001): Earned masters degree at UA with Prof. Michael Jennings, currently in Naval Officer's Training
  - Carrie Freeman (2001): Earned MD at UA School of Medicine. Practicing at University of Mississippi Medical Center

- Jennifer Ricketts Bunting (2001 REU): Altria Compounds, LLC
- Ashlie Wrenne (2002 REU): Earned MS at University of Kentucky, currently teaching at the St. Paul School for Girls in Brooklandville, MD
- Bret Largue (2003): Pursuing MBA at University of South Alabama.
- Heather Scott (2003): Earned MD at University of Alabama School of Medicine. Currently pediatric anesthesiologist at Augusta University.
- Deidre Sandrock (2003 REU): Earned PhD at University of Pennsylvania working under Prof. Gary Molander. Employed at Milliken & Co.
- Marne Harris (2003-2004): Earned chemistry degree from UA
- Jason Spruell (2004): PhD with Fraser Stoddardt, Northwestern; post-doc with Craig Hawker, UCSB; employed at Milliken & Co.
- Alan Allgood (2004): Earned DMD at University of Alabama, School of Dentistry
- Sheritta Cooks Fagbodun (2004 REU): Earned PhD in Integrative Biosciences Program at Tuskegee University. Currently on Biology faculty at Tuskegee
- Patricia Moore (2004-2005): Earned chemistry degree at UA in 2007.
- Kevin O'Halloran (2005 REUt): PhD, Emory University; assistant professor at Georgia Gwinnett College
- Benjamin Self (2005): Unknown
- Fatima Carmichael (2005-2006): High school chemistry teacher
- Maryam Khan (2005-2006): Physicians assistant
- Emily Pair Litman (2005-2006): Earned DO degree at Lincoln Memorial University, Medical doctor
- Jake Porter (2006): Employed by Pine Cove Christian Camps
- Brent Graves (2006): Entered Pikeville School of Osteopathic Medicine
- Joanna Smith (2006-2007, 2006 REU): Earned PharmD at Samford University
- Caitlin Prickett (2004-2007): Earned MS degree at Philadelphia College of Osteopathic Medicine in Atlanta. Earned DO degree at William Carey University School of Osteopathic Medicine.
- Paul Guevara (2007): Earned MBA at UA
- Jason Crowell (2007-2008): Earned MD at UA School of Medicine
- Ellie Killian (2007-2008): Earned MD at University of Alabama, School of Medicine
- Strudwick Tutwiler (2007-2008): Earned DMD at University of Alabama, School of Dentistry
- Nick Massie (2008): Earned PharmD at Harrison School of Pharmacy at Auburn. Pharmacy resident at Huntsville Hospital
- Jane Moore (2008 REU student): Earned PhD in chemistry at UA. Enrolled in UA School of Dentistry
- Quentin Sonnier (2006-2008): Student in the graduate program in Biomedical Sciences at Philadelphia College of Osteopathic Medicine in Atlanta
- Fallon Brown (2006-2008): Earned DO Philadelphia College of Medicine, Atlanta; resident at LSU Health Science Center
- Sarabeth McLendon (2007-2008): Registered Nurse at Helen Keller Hospital
- William Clark (2008): Mercedes Benz International
- Denise Boykin (2007-2009): Earned MD at UA School of Medicine. Physician at Shelby Baptist Medical Center

- Joel Schoenberg (2008-2009): Earned DO degree at Nova Southeastern University. Resident at Guthrie Robert Packer Hospital
- Tyler James (2008-2009): Natural Science Teacher, Instituto Jorge Robledo
- Dana Suich (2009): PharmD at ETSU. Pharmacist at Mercy Health in TN
- Cody Corbin (REU 2009): Earned PhD at in chemistry at the University of Arizona. Post-doctoral associate at Sandia National Laboratory
- Emily Wayman (2008-2009 ESP):Studying in Physicians Assistant program at the Medical University of South Carolina
- Austin Doss (2009): Earned MD at UA School of Medicine
- Jordan Entrekin (2009): Earned PhD in Chemistry at UA.
- Joseph Randall (2009): Earned DMD
- Hannah Box (2008-2010): Earned PhD in chemistry at Mississippi State University
- Zachary Hawkins (2008-2010 ESP): unknown
- Jackie Parks (2009-2010): Earned MD at UA School of Medicine
- Hanna Welch (2009-2010): Earned PharmD at the University of Michigan. Pharmacy resident at University of Pittsburgh Medical Center
- Zane Hyde (2009-2010): Earned MD at UA School of Medicine
- David Beasley (2009-2010): Earned law degree from UA School of Law
- Duncan Harmon (2009-2010): Earned MD at UA School of Medicine
- Thomas Leißing (2010, DAAD RISE): Completing masters degree in chemistry at TU-Munich
- Kristy Bearden (2009-2010): Earned DO degree at Philadelphia College of Medicine, Atlanta, currently a resident physician
- Ashley Miller (2009-2011): Working as a chemist at TTL, Inc
- Rachel Mustain (2011 REU): Earned BS in chemistry at Mississippi State University
- Will Scogin (2011 REU): Studied Physical Therapy at UAB
- Phuong "John" Nguyen (2011): Completed chemistry degree at UA
- Kali Coleman (2011-2012 ESP): Attending UA School of Physical Therapy
- Emma Catt (2011-2012): Nurse at Children's Hospital of Alabama
- Aaron Coleman (2011-2012): Earned MD at South Alabama, resident at UAB Medicine
- Bhijay Bhattarai (2012 RUI): PhD program in chemistry at the University of Michigan
- Arjun Pandey (2012 RUI): Earned BS chemistry degree at SELU.
- Alfred Hamilton III (2011-2012): Pursuing Masters in Biomedical Sciences at Geisinger Commonwealth School of Medicine
- Mallory Thompson (2012): Registered nurse at Vanderbilt University Medical Center
- Jessica Jones (2010-2013, ESP): Toxicologist, National Center for Pain Management and Research
- Luke Brechtelsbauer (2011-2013): PhD program in Chemical Engineering at MIT
- Sarju Adhikari (2012, 2013 RUI): Completing BS chemistry degree at SELU
- Elizabeth Kimball (2013 RUI): PhD program in chemistry at LSU
- Apsana Shrestha (2013 RUI): Completing BS chemistry degree at SELU
- Stephanie Bevans (2011-2013): Earned MD at UA School of Medicine, dermatology resident at UAB
- Kevin Duque (2012-2013): Attending University of Puerto Rico School of Dentistry

- Nicholas Laskay (2012-2013): Attending UA School of Medicine
- Jason Wang (2011-2013): Attending University of Washington School of Medicine
- Hudson Pierce (2012-2013): Attending medical school at Cornell University
- Sara Frese (2014): Attending UA School of Medicine
- Megan Johnston (2013-2015 ESP): Earned BS Chemistry degree at UA
- Jordan Kurdi (2014-2015 ESP): Earned BS Chemistry degree at UA
- Rachel VanOsdol (2015, REU): Chemistry PhD program, University of Colorado
- Haddon Mullins (2013-2016): Attending UA School of Medicine
- Russell Macoon (2014-2016): Pursuing PhD in Medicinal Chemistry at the University of Florida
- Adam Shipley (2014-2016): Enrolled at UA School of Medicine
- Colin Treager (2015-2017): Enrolled in MBA program at UA
- Olivia Gobble (2015-2017): Enrolled in UA School of Medicine
- Renee Stullich (2015-2017): Enrolled in Medical University of South Carolina
- Jacob Trull (2015-2017): Doing venture capital internship in New York
- Michelle Weyhaupt (2015-17): Enrolled in Vanderbilt Medical School
- Nathan Smith (2016): Completing Chemical Engineering degree at UA
- Joseph Burke (2017, REU): Completing chemistry degree at University of the Cumberlands
- James Howard (2016-2018): Enrolled in PhD program in Chemistry at the University of Texas-Austin
- Connar Franklin (2016-2018): Enrolled in MBA program at The University of Alabama
- David Jade Kelley (spring 2017-fall 2018): Enrolled in University of Texas School of Dentistry
- Zoe Ziegenhorn (2018): Studying holistic medicine in Thailand
- Wayne Brent Kuhnfeld (2017-2019):
- Sabrina Curley (2017-2019): Enrolled in PhD program in Materials Engineering at Michigan State University

DAAD-RISE: Visiting student from Germany as part of DAAD-RISE program
ESP: Emerging Scholars Program, The University of Alabama
HHMI: HHMI undergraduate research program participant
REU: Participant in NSF-funded REU program at UA
RUI: Participant in Research for Undergraduate Institution grant