

Oswaldo Gutierrez, Ph.D.

Professor of Chemistry and Biochemistry

Faculty Director of UCLA-CSRC's Hispanic Serving Institution (HSI) STEM Initiatives

President of the Alliance for Diversity of Science and Engineering (ADSE)

University of California, Los Angeles (UCLA)
Department of Chemistry and Biochemistry
607 Charles E. Young Drive, East
Los Angeles, CA 90095-1569

Born August 10, 1983, Salamanca, Guanajuato, Mexico

Citizenship: Mexican and United States

Education and Training:

Postdoctoral Fellow, University of Pennsylvania, Organic/Organometallic Chemistry, 2012-2016

Advisor: Professor Marisa C. Kozlowski

Ph.D., University of California-Davis, Physical Organic Chemistry, 2009-2012

Advisor: Professor Dean J. Tantillo

B.S. and M.S., University of California-Los Angeles, Organic Chemistry, 2006-2009

Advisor: Professor Kendall N. Houk

Sacramento City College, Chemistry, 2001-2006

Professional History:

Professor, University of California-Los Angeles (UCLA), Department of Chemistry and Biochemistry, January 2025-present

Professor, Texas A&M University, Department of Chemistry, September 2024-December 2024

Associate Professor, Texas A&M University, Department of Chemistry, August 2021- August 2024

Associate Professor, University of Maryland-College Park, Department of Chemistry and Biochemistry, July 2021-August 2021

Nathan Drake Assistant Professor, University of Maryland-College Park, Department of Chemistry and Biochemistry, July 2019-2021

Assistant Professor, University of Maryland-College Park, Department of Chemistry and Biochemistry, June 2016-2019

Teaching:

Texas A&M University. Chem 6/46446 Physical Organic Chemistry (Fall 2023, Fall 2024), Chem 228 Organic Chemistry III (Spring 2024), Chem228 Organic Chemistry II (Fall 2022, Spring 2023), Chem120-H General Chemistry Honors (Spring 2022).

University of Maryland-College Park. Chem441/641 Physical Organic Chemistry (Fall 2016, Fall 2017, Fall 2018), Chem237 Organic Chemistry Majors (Spring 2018, Spring 2019, Spring 2020), Chem231 Organic Chemistry (Fall 2019).

University of Pennsylvania. Chem242 Organic Chemistry II (Fall 2014, Spring 2015, Summer 2015), Chem241 Organic Chemistry I (Summer 2015), Chem241 Organic Chemistry II (Fall 2015).

University of California-Davis. Introduction to General Chemistry (Spring 2012)

Sacramento City College. Teaching Assistant for Organic Chemistry II (Spring 2005)

Awards and Honors:

Camille Dreyfus Teacher Scholar Award, 2021

Chemical and Engineering News (C&EN) Talented 12, 2020

ACS Division of Organic Chemistry Academic Young Investigator, 2020

NIGMS Maximizing Investigator's Research Award, 2020

Nathan Drake Faculty Fellow, University of Maryland, 2019

["the faculty fellowship provides support for the recruitment and/or retention of an outstanding junior faculty member in the field of organic chemistry."](#)

O. Gutierrez, c.v. October 2023

CMNS Board of Visitors Junior Faculty Award, University of Maryland, 2019

“This fund provides an annual award in recognition of the outstanding contributions of tenure track assistant professors who have completed their first three-year term in the College of Computer, Mathematical, and Natural Sciences”

NSF CAREER Award, 2018

University of Chicago Rising Stars in Chemistry, 2015

Dow BEST Symposium Travel Award, 2013

UC MEXUS Collaborative Grant, University of California-Davis, 2012

UCD & Humanities Graduate Research Award in Chemistry, University of California-Davis, 2012

R. B. Miller Graduate Fellowship, University of California-Davis, 2012

David and Ruth Volman Graduate Fellowship, University of California-Davis, 2012

Dolores Cannon Southam Award for Excellence in Research, University of California-Los Angeles, 2009

Whitman Summer Research Fellowship, University of California-Los Angeles, 2008

Scrubs Unlimited Summer Research Fellowship, University of California-Los Angeles, 2007

Honoric/Named Lectureships:

CSE Distinguish Scientist Seminar, University of Minnesota Twin Cities, 2024

Norvatis Keynote Speaker, Norvatis Symposium, University of Michigan, 2024

26th Dowd Lecture, University of Pittsburgh, 2023

Caltech's Diversity in Chemistry Initiative Student Invited Speaker, Caltech, 2023

Organic Chemistry Day Keynote Speaker, University of Missouri, 2022

The Paquette Workshop Keynote Speaker, The Ohio State University, 2022

NUBonD: Faces of Science Student Invited Speaker, Northwestern University, 2022

SACNAS Student Invited Speaker, University of Illinois-Urbana Champagne. 2022 *via* Zoom

ADSE Student Invited Speaker, University of Oregon. 2021

Barrio Logan Institute's "What Do Scientists Actually Do?" Panelist on life as a scientist, education while undocumented, and everything that entail. 2021 *via* Zoom

U.S. National Chemistry Olympiad-Study Camp. University of Maryland-College Park. 2021 *via* Zoom

SACNAS Student Invited Speaker, Louisiana State University. 2021 *via* Zoom

ADSE Student Invited Speaker, University of Colorado. 2020 *via* Zoom

Student Invited Speaker, Sacramento City College, 2019

Prince George's Community College STEM WEEK Speaker, Prince Georges Community College, 2018

ADSE Student Invited Speaker, Drexel University, 2017

Professional Activities:

Faculty Director of UCLA-CSRC's Hispanic Serving Institution (HSI) STEM, UCLA, January 2025-present

Committee of Visitors, NSF Division of Chemistry, 2024

Member, The Catalysis Innovation Consortium, 2024-current

Advisory Board, *Organic Letters*, 2022-current

President, Alliance for Diversity in Science and Engineering (ADSE), 2021-current

Co-organizer, NSF's Chemistry Early Career Investigator Workshop, 2023

Advisory Board, Alliance for Diversity in Science and Engineering (ADSE), 2014-current

Governing Board, *Reaction and Mechanisms Conference*, 2023-2029

Co-organizer, ADSE's "Young Researchers Conference", 2023

Co-organizer, "ICARBON Computational Summer Program" *via* zoom, Summer 2022

Co-organizer, "Breaking Barriers Through Chemistry" *via* zoom, 2021

Co-organizer, ADSE's "Young Researchers Conference," 2022

Co-organizer, ADSE's "Young Researchers Conference" *via* zoom 2021

Organizer, ADSE's "Young Researchers Conference," 2019

Organizer, ADSE's "Young Researchers Conference," 2018

Organizer, ADSE's "Young Researchers Conference," 2017

Advisory Board, McNair Scholars Program at the University of Maryland-College Park, 2016-2021

Scientific Advisory Board, Prince Georges' Community College, 2017-current

Faculty Mentor, ADSE local chapter at the University of Maryland-College Park, 2017-2021.

Reviewing Activities for Agencies and Foundations

Standing Panel member for NIH NIGMS Chemical Synthesis and Biosynthesis, 2024-current
Reviewer for NSF ASCEND Fellowship Program, 2023
Panel member for NIH NIGMS Chemical Synthesis and Biosynthesis, 2023
Panel member for NIH NIGMS ESI MIRA, 2023
Reviewer for ACS Petroleum Research Fund, 2023
Panel member for NIH NIGMS Fellowship, 2022
Early Career *ad hoc* member. National Advisory General Medical Sciences Council (NIGMS) winter meeting, 2022
Early Career panel member for NIH NIGMS SBC-A Panel, 2019.
Reviewer for NSF Graduate Research Fellowship Program, 2019
Panel Member for NSF CAREER; Chemistry CSDM-B, 2019
Panel Member for NSF CAREER; Chemistry CSDM-B, 2018
Panel Member for NSF; Chemistry CSDM-B, 2018
Reviewer for NSF Graduate Research Fellowship Program, 2017
Reviewer for NSF: Excellence in Research (EiR) Proposal, 2018
Office of Naval Research: MURI Naval Materials Division, 2017

Professional Committee Activities within UCLA:

Department of Chemistry and Biochemistry

Professional Committee Activities within Texas A&M University:

Department of Chemistry

Chair, Division of Organic Chemistry (2022 – current)
Member, Executive Committee (2022 – current)
Member, Faculty Search Committee (2023 – 2024)
Member, Department of Chemistry Proactive Recruitment Operations (PRO_{PS}) Committee (2022-current)
Member, Department of Chemistry Diversity/Climate Committee (2022-2023)
Organic Division Representative, Department of Chemistry Academic Operations Council Committee (2023-current)

Professional Committee Activities within University of Maryland:

Department of Chemistry

Racial Diversity & Inclusion Steering Committee (2020-2022)
Graduate Admissions Committee (2016-2019)
Merit pay and awards committee (2017-2020)
Undergraduate honors and Awards (2019-2020),
Milligan symposium fellowship selection committee (2017-2019)

University of Maryland

CMNS Diversity Council (2020-2021)
McNair advisory board (2017–2021),
McNair fellowship selection committee (2017)
Graduate school endowed fellowship selection committee (2018)

Research Interests: Our group combines computational and experimental approaches to advance our understanding of open-shell organic/organometallic reaction mechanisms with a focus Fe-catalyzed multicomponent radical cross-couplings and (metallo)photoredox-catalyzed carbon-carbon bond formations. In turn, this information is used to guide the design of new sustainable, catalytic, and asymmetric transformations that can be adapted by the organic, organometallic, and bio(in)organic in the synthesis of medicinally active compounds.

Publications (peer-reviewed):

Submitted-

99. Perea, M. A.; Bucci, E. M.; Lalissee, R. F.; Mukherjee, P.; Raab, T. J.; Valloli, L. K.; Bird, M. J.;

O. Gutierrez, c.v. October 2023

Gutierrez, O.;# Doyle, A. D.#

Submitted.

"Leveraging Cooperative Dual Ni Catalysis for Photoredox-Enabled Alkyl–Alkyl Cross-Coupling"

[Link to paper](#)

98. Sookezian, A.; Dong, W.; Lalissee, R. L.; Renteria-Gomez, A.; Gutierrez, O.;# Molander, G. A.#

Submitted.

"Metallaphotoredox of thianthrenium salts enables aryl-alkyl couplings via radical sorting"

[Link to paper](#)

In press-

97. Wu, F.-P.; Lenz, M.; Suresh, A.; Gogoi, A. R.; Typer, J. T.; Daniliuc, C. G.; Gutierrez, O.;# Glorius, F.#

Chem. Sci. **2024**, *15*, 15205-15211.

"Nitrogen-to-functionalized carbon atom transmutation of pyridine"

[Link to paper](#)

96. Maity, Tapas.;* Rentería-Gómez, Á.;* Gutierrez, O.#

ACS Catal. **2024**, *14*, 13049–13054

"Stereoselective Fe-catalyzed Decoupled Cross-couplings: Chiral vinyl oxazolidinones as effective radical lynchpins for diastereoselective C(sp²)-C(sp³) bond formation "

[Link to paper](#)

95. Guerrero, M.;* Rentería-Gómez, Á.;* Das, D.; Gutierrez, O.#

Org. Lett. **2024**, *26*, 7015-7020.

"Fe-catalyzed Fluoroalkyl(hetero)arylation of Vinyl Azaarenes: Rapid and Modular Synthesis of Unsymmetrical 1,1-Bis(hetero)aryllkanes "

[Link to paper](#)

94. Rentería-Gómez, Á.; Gutierrez, O.;#

Nature **2024**, *631*, 30-31.

"Atom-swap chemistry speeds synthesis of compounds for drug discovery"

[Link to paper](#)

93. Masson-Makdissi, J.;* Lalissee, R. F.;* Gutierrez, O.;# Levin, M. D.#

J. Am. Chem. Soc. **2024**, *146*, 17719-17727.

"Evidence for Dearomatizing Spirocyclization and Dynamic Effects in the Quasi-Stereospecific Nitrogen Deletion of Tetrahydroisoquinolines"

[Link to paper \(ChemRxiv\)](#)

92. Sun, P. B.; Pomfret, M. N.; Elardo, M. J.; Lalissee, R. F.; Suresh, A.; Rentería-Gómez, Á.; Keating, S.; Chen, C.; Hilberg, S. L.; Chakma, P.; Wu, Y.; Bell, R. C.; Rowan, S. J.; Gutierrez, O.;# Golder, M. R.#

J. Am. Chem. Soc. **2024**, *146*, 19229-19238.

"Molecular Ball Joints: Mechanochemical Perturbation of Bullvalene Hardy-Cope Rearrangements in Polymer Networks"

[Link to paper](#)

91. Targos, K.; Gogoi, A. R.; Rentería-Gómez, Á.; Kim, M. K.; Gutierrez, O.;# Wickens, Z. K.#

J. Am. Chem. Soc. **2024**, *146*, 13689-13696.

"Mechanism of Z-Selective Allylic Functionalization via Thianthrenium Salts"

[Link to paper \(ChemRxiv\)](#)

90. Laskar, R.; Dutta, S.; Spies, J. C.; Mukherjee, P.; Rentería-Gómez, Á.; Thielemann, R. E.; Daniliuc, C.G.; Gutierrez, O.;# Glorius, F.#

J. Am. Chem. Soc. **2024**, *146*, 10899-10907.

"Gamma-Amino Alcohols through EnT-Enabled Brook Rearrangement"

O. Gutierrez, c.v. October 2023

[Link to paper \(PubMed\)](#)

89. Wu, D.; Martin, R. T.; Piña, J.; Kwon, J.; Crockett, M. P.; Thomas, A. A.; Gutierrez, O.; Park, N. H.; Hedrick, J. L.; Campos, L. M.#

Angew. Chem. Int. Ed. **2024**, *63*, e202401281.

"Cyclopropenimine-Mediated CO₂ Activation for the Synthesis of Polyurethanes and Small-Molecule Carbonates and Carbamates"

[Link to paper \(PubMed\)](#)

88. Alvarez, E. M.; Ullah, M.; Stewart, G.; Lalissee, R.; Gutierrez, O.; Malapit, C. A.

J. Am. Chem. Soc. **2024**, *146*, 3591–3597.

"Site-selective electrochemical arene C–H amination"

[Link to paper \(PubMed\)](#)

87. Wu, F.-W.; Chintawar, C. C.; Lalissee, R.; Mukherjee, P.; Dutta, S.; Tyler, J.; Daniluc, C. G.; Gutierrez, O.;# Glorius, F.#

Nature Catal. **2024**, *7*, 242–251.

"Ring expansion of indene by photoredox-enabled functionalized carbon-atom insertion"

[Link to paper](#)

- Highlighted in Nature Catalysis by Paolo Costa "Drug design via single-carbon atom insertion": [LINK](#)
- Highlighted in Chem Europe "Chemists develop new approach to inserting single carbon atoms": [LINK](#)

86. Lin, L. Q.; Rentería-Gómez, A.; Martin, R.; Ong, K. Z. W.; Parris, A.; Gutierrez, O.;#Koh, M. J.#

Angew. Chem. Int. Ed. **2024**, *63*, e202317935

"Selective 1,2-Hydroarylation (Alkenylation) of gem-Difluoroalkenes to Access (CF₂H) Motifs"

[Link to paper \(PubMed\)](#)

85. Wei, S.; Smith-Jones, J.; Lalissee, R. F.; Hestenes, J. C.; Chen, D.; Danielsen, S. P. O.; Bell, R. C.; Churchill, E. M.; Munich, N. A.; Marbella, L. E.; Gutierrez, O.; Rubinstein, M.; Nelson, A.; Campos, L. M.
Adv. Mat. **2024**, e2113961. DOI: 10.1002/adma.202313961

"Light-Induced Living Polymer Networks with Adaptive Functional Properties"

[Link to paper \(PubMed\)](#)

84. Chen, W.; Elumalai, P.; Mamlouk, H.; Rentería-Gómez, A.; Veeranna, Y.; Shetty, S.; Kumar, D.; Al-Rawashdeh, M.; Gupta, S. S.; Gutierrez, O.;# Zhou, H.;# Madrahimov, S. T.#

Adv. Sci. **2024**, i2309540. DOI: 10.1002/advs.202309540

"Monodentate-phosphinoamine Nickel complex supported on Metal-Organic Framework for high performance ethylene dimerization"

[Link to paper \(PubMed\)](#)

83. Mandal, H.; Ogunyemi, O.; Nicholson, J.; Orr, M. E.; Lalissee, R. F.; Rentería-Gómez, Á.; Gogoi, A. R.; Gutierrez, O.;# Michaudel, Q.; Goodson III, T.#

J. Phys. Chem. C. **2024**, *128*, 6, 2518–2528

"Linear and Nonlinear Optical Properties of All-cis and All-trans Poly(p-phenylene vinylene)"

[Link to paper \(PubMed\)](#)

82. Youshaw, C. R.; Yang, M.-H.; Gogoi, A. R.; Rentería-Gómez, Á.; Liu, L.; Morehead, L. K.; Gutierrez, O.;#
Org. Lett. **2023**, *25*, 8320–8325

"Iron-Catalyzed Enantioselective Multicomponent Cross-Couplings of α -Boryl Radicals"

[Link to paper](#)

81. Sar, D.; Yin, S.;* Grygus, J.;* Rentería-Gómez, Á.;* Garcia, M.; Gutierrez, O.#

Chem. Sci. **2023**, *14*, 13007–13013.

"Expanding Chemical Space of Enol Silyl Ethers: Catalytic Dicarbofunctionalization Enabled by Iron Catalysis"

[Link to paper](#)

O. Gutierrez, c.v. October 2023

80. Usman, F. O.; Gogoi, A. R.; Mixdorf, J. C.; Gutierrez, O.;# Nguyen, H. N.#

Angew. Chem. Int. Ed. **2023**, *62*, e202314843.

“Rhodium-Catalyzed Asymmetric Synthesis of 1,2-Disubstituted Allylic Fluorides”

[Link to paper](#)

79. Renteria-Gomez, A.; Guerrero, M.;* Ramirez-Lopez, M.;* Gutierrez, O.#

Org. Lett. **2023**, *25*, 7440-7445.

“Regioselective Fluoroalkylation of Enamides Enabled by an Iron-Catalyzed Multicomponent Radical Cross-Coupling Strategy”

[Link to paper \(ChemRxiv\)](#)

78. Andreetta, P.; Martin, R. T.; Souliah, C.; Rentería-Gómez, Á.; Song, Z.; Khorramshashi Bayat, Y.; Ivlev, S.; Gutierrez, O.;# Casitas, A.#

Angew. Chem. Int. Ed. **2023**, *135*, e202310129.

“Experimental and Computational Studies on Cobalt(I)-Catalyzed Regioselective Allylic Alkylation Reactions”

[Link to paper](#)

77. Aguilera, M. C.; Gogoi, A. R.; Lee, W.; Liu, L.; Brennessel, W.; Gutierrez, O.;# Neidig, M. L.#

ACS Catal. **2023**, *13*, 8987.

“Insight into Radical Initiation, Solvent Effects and Biphenyl Production in Iron-Bisphosphine Cross-Couplings”

[Link to paper](#)

76. Crockett, M. P.; Piña, J.; Gogoi, A. R.; Lalisce, R. F.; Nguyen, A. V.; Gutierrez, O.;# Thomas, A. A. #

J. Am. Chem. Soc. **2023**, *145*, 10743-10755.

“Breaking the *tert*-Butyllithium Contact Ion Pair: A Gateway to Alternative Selectivity in Lithiation Reactions”

[Link to paper](#)

75. Peng, Q.; Gogoi, A. R.; Renteria-Gomez, A.; Gutierrez, O.;# Scheidt, K. A. #

Chem **2023**, *9*, 1983-1993.

“Visible Light-Induced Coupling of Carboxylic Acids with Alcohols and Amines”

[Link to paper](#)

74. Day, C. S.; Renteria-Gomez, A.; Ton, S. J.; Gogoi, A.; Gutierrez, O.;# Martin, R. #

Nat. Catal. **2023**, *6*, 244-253.

“Elucidating Electron Transfer Events in Polypyridine Nickel Complexes”

[Link to paper](#)

• Highlighted in *Nature Catalysis*: [LINK](#)

73. Zhou, M.; Tsien, J.; Dykstra, R.; Hughes, J. M.; Peters, B. K.; Merchant, R. R.; Gutierrez, O.;# Quin, T. #

Nat. Chem. **2023**, *15*, 550-559.

“Alkyl Sulfinates as Cross-Coupling Partners: Programmable and Stereospecific Installation of C(sp³) Bioisosteres”

[Link to paper](#)

72. Yang, Y.; Tsien, J.; Dykstra, R.; Chen, S.-J.; Wang, J. B.; Merchant, R. R.; Hughes, J. M. E.; Peters, B. K. Gutierrez, O.;# Quin, T. #

Nat. Chem. **2023**, in press, doi.org/10.1038/s41557-023-01342-7

“Exploring Uncharted Chemical Space: Programmable Late-Stage Functionalization of Bridge-substituted BCP bis-Boronates”

[Link to paper](#)

71. Matsuo, B.; Majhi, J.; Granados, A.; Sharique, M.; Martin, R. T.; Gutierrez, O.;# Molander, G. A. #

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Chem. Sci. **2023**, *14*, 2379-2385.

“Transition Metal-Free Photochemical C-F Activation for the Preparation of Difluorinated-Oxindoles Derivatives”

[Link to paper](#)

70. Zhu, J. L.; Schull, C. R.; Tam, A. T.; Renteria-Gomez, A.; Gogoi, A. R.; Gutierrez, O.;[#] Scheidt, K. A.[#]
J. Am. Chem. Soc. **2023**, *145*, 1535-1541.

“Photoinduced Acylations Via Azolium-Promoted Intermolecular Hydrogen Atom Transfer”

[Link to paper](#)

69. Dherange, B. D.; Yuan, M.; Kelly, C. B.;[#] Reiher, C. A.; Grosanu, C.; Berger, K. J.; Gutierrez, O.;[#] Levin, M.[#]

J. Am. Chem. Soc. **2023**, *145*, 17-24.

“Direct Deaminative Functionalization”

[Link to paper](#)

68. Li, X.; Yuan, M.; Chen, F.; Quing, F.-L.; Gutierrez, O.;[#] Chu, L.[#]

Chem **2023**, *9*, 154-169.

“Three-component enantioselective alkenylation of organophosphonates via nickel metallaphotoredox catalysis”

[Link to paper](#)

67. Tan.; G.; Paulus, F.; Renteria-Gomez, A.; Lalisse, R.F.; Daniliuc, C. G.; Gutierrez, O.;[#] Glorius, F.[#]

J. Am. Chem. Soc. **2022**, *144*, 21664-21673.

Highly Selective Radical Relay 1,4-Oxyimination of Two Electronically Differentiated Olefins”

[Link to paper](#)

66. Dhungana, R. K.; Granados, A.; Ciccone, V.; Martin, R. T.; Majhi, J.; Sharique, M.; Gutierrez, O.;[#] Molander, G. A.[#]

ACS Catal. **2022**, *12*, 15750-15757.

“Trifunctionalization of Cinnamyl Alcohols Provides Access to Brominated α,α -Difluoro- γ -Lactones via Photoinduced Radical-Polar-Radical Mechanism”

[Link to paper](#)

65. Altundas, B.; Alwedi, E.; Song, Z.; Gogoi, A. R.; Dykstra, R.; Gutierrez, O.;[#] Fleming, F. F.[#]

Nat. Commun. **2022**, *13*, 6444.

“Dearomatization of Aromatic Asmic Isocyanides to Complex Cyclohexadienes”

[Link to paper](#)

64. Renteria-Gomez, A.; Lee, W.; Yin, S.; Davis, M.; Gogoi, A. R.; Gutierrez, O.[#]

ACS Catal. **2022**, *12*, 11547-11556.

“General and Practical Route to Diverse 1-(Difluoro)alkyl-3-aryl Bicyclo[1.1.1]pentanes Enabled by an Fe-Catalyzed Multicomponent Radical Cross-Coupling Reaction”

[Link to paper](#) ([ChemRxiv](#))

63. Majhi, J.; Dhungana, R. K.; Renteria-Gomez, A.; Sharique, M.; Li, Dong, W.; Gutierrez, O.;[#] Molander, G. A.[#]

J. Am. Chem. Soc. **2022**, *144*, 15871-15878.

“Metal-Free Photochemical Imino-Alkylation of Alkenes with Bifunctional Oxime Esters”

[Link to paper](#)

62. Wen, Y.; Renteria-Gomez, A.; Day, G. S.; Smith, M. F.; Yan, T.-H.; Osman K., R.; Gutierrez, O.;[#] Sharma, V. K.;[#] Ma, X.;[#] Zhou, H.-C.[#]

J. Am. Chem. Soc. **2022**, *144*, 11840-11850.

“Integrated Photocatalytic Reduction and Oxidation of Perfluorooctanoic Acid by Metal–Organic Frameworks: Key Insights into the Degradation Mechanisms.”

O. Gutierrez, c.v. October 2023

[Link to paper](#)

61. Wang, H.; Liu, C.F.; Martin, R. T.; Gutierrez, O.;[#] Koh, M. J. [#]

Nat. Chem. **2022**, *14*, 188-195.

“Directing-group-free catalytic dicarbofunctionalization of unactivated alkenes.”

[Link to paper](#)

60. Rotella, M. E.; Sar, D.; Liu, L.; Gutierrez, O. [#]

Chem. Commun. **2021**, *57*, 12508-12511.

“Fe-Catalyzed dicarbofunctionalization of electron-rich alkenes with Grignard reagents and (fluoro)alkyl halides.” Part of the 2021 Emerging Investigators Issue.

[Link to paper](#)

59. Liu, L.; Aguilera, M. C.; Lee, W.; Youshaw, C. R.; Neidig, M. L.;[#] Gutierrez, O. [#]

Science **2021**, *374*, 432-439.

“General method for iron-catalyzed multicomponent radical cascades-cross-couplings.”

[Free-Access Link to the Paper](#)

- Highlighted in *Science*: [LINK](#)
- Highlighted by the National Science Foundation under NSF Research News "Low-Cost Iron Catalyst Produces Less Expensive Pharmaceutical Compounds!" [LINK](#)
- Highlighted by the NSF as The Discovery Files episode [GIVING PRESCRIPTIONS IRON!](#) The Discovery Files radio feature is distributed nationally by the CBS Radio Network and carried by other radio stations across the country, from Los Angeles to Washington, D.C. The radio series is also distributed internationally to 177 countries by the American Forces Network.
- Featured in Texas A&M Science by Shana K. Hutchins "Texas A&M Chemist Helps Pave Way for Cheaper, Faster, Safer Chemical Synthesis Using Iron as Catalyst" [LINK](#)
- This work was highlighted by the University of Rochester "A big leap forward in using iron catalysts for pharmaceuticals" [LINK](#)

58. Berger, K. J.; Driscoll, J. L.; Yuan, M.; Dherange, B. D.; Gutierrez, O.;[#] Levin, M. D. [#]

J. Am. Chem. Soc. **2021**, *143*, 17366-17373.

“Direct Deamination of Primary Amines via Isodiazene Intermediates.”

[Link to paper](#)

57. **Review.** Yuan, M.; Gutierrez, O. [#]

WIREs Comput Mol Sci. **2021**;e1573.

“Mechanisms, Challenges, and Opportunities of Dual Ni/Photoredox Catalyzed C(sp²)-C(sp³) Cross-Couplings.”

(Invited Article)

[Link to paper](#)

56. Liu, C.F.; Wang, H.; Martin, R. T.; Gutierrez, O.;[#] Koh, M. J. [#]

Nat. Catal. **2021**, *4*, 674-683.

“Olefin functionalization/isomerization enables stereoselective alkene synthesis.”

[Link to paper](#)

55. Thompson, R. R.; Rotella, M. E.; Zhou, X.; Fronczek, F. R.; Kumar, R.; Gutierrez, O. [#] Lee, S. [#]

J. Am. Chem. Soc. **2021**, *143*, 9026-9039.

“Impact of Ligands and Metals on the Formation of Metallacyclic Intermediates and a Non-traditional Mechanism for Group VI Alkyne Metathesis Catalysts.”

[Link to paper](#)

54. DeMuth, J. C.; Song, Z.; Carpenter, S. H.; Boddie, T. E.; Radovic, A.; Baker, T. M.; Gutierrez, O.;[#] Neidig, M. L. [#]

Chem. Sci. **2021**, *12*, 9398-9407.

O. Gutierrez, c.v. October 2023

“Experimental and Computational Studies of the Mechanism of Iron-Catalysed C-H Activation/Functionalisation with Allyl Electrophiles.”

[Link to paper](#)

53. Lipp, A.; Badir, S.; Dykstra, R.; Gutierrez, O.;[#] Molander, G. A.[#]

Adv. Synth. Catal. **2021**, 363, 3507-3520.

“Catalyst-Free Decarbonylative Trifluoromethylthiolation Enabled by Electron Donor–Acceptor Complex Photoactivation.”

[Link to paper](#)

- Highlighted with VIP (Very Important Publication) designation

52. Agrawal, T.; Martin, R.; Collins, S.; Wilhelm, Z.; Edwards, M. D.; Gutierrez, O.;[#] Sieber, J. D.[#]

J. Org. Chem. **2021**, 86, 5026-5046.

“Access To Chiral Diamine Derivatives through Stereoselective Cu-Catalyzed Reductive Coupling of Imines and Allenamides.”

[Link to paper](#)

51. Campbell, M. W.; Yuan, M.; Polites, V. C.; Gutierrez, O.;[#] Molander, G. A.[#]

J. Am. Chem. Soc. **2021**, 143, 3901-3910.

“Photochemical C–H Activation Enables Nickel-Catalyzed Olefin Dicarbofunctionalization.”

[Link to paper](#)

50. Guo, L.; Yuan, M.; Zhang, Y.; Wang, F.; Zhu, S.; Gutierrez, O.;[#] Chu, L.[#]

J. Am. Chem. Soc. **2020**, 142, 20390-20399.

“General Method for Enantioselective Three-Component Carboarylation of Alkenes Enabled by Visible-Light Dual Photoredox/Nickel Catalysis.”

[Link to paper](#)

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[Link to paper](#)

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[Link to paper](#)

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- Highlighted in SYNFACTS by Paul Knochel and Juri Skotnitzki! [LINK](#)
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O. Gutierrez, c.v. October 2023

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O. Gutierrez, c.v. October 2023

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Research Presentations:

84. University of Minnesota-Twin Cities, Minneapolis, MN. 10/3/2024
“The advent and recent developments of Fe-catalyzed multicomponent cross-coupling reactions”
88. CSE Distinguished Scientist Seminar, University of Minnesota-Twin Cities, Minneapolis, MN. 10/2/2024
“A Dreamer’s Pathway to Become a Professor: Tips and Tricks”
87. University of Notre Dame, South Bend, IN 2024. 9/11/24
“A Dreamer’s Pathway to Become a Professor: Tips and Tricks”
86. Beyond CCHF: The Catalysis Innovation Consortium, ZOOM, 8/26/2024
“New Directions in Open-Shell C-C Bond Formations Enabled by Merging Modern Computational and Experimental Methods”
85. 45th International Conference of Coordination Chemistry, Synthetic Coordination Chemistry for Future Applications, Fort Collins, CO, 7/30/2024
“Multicomponent Fe-catalyzed radical cross-couplings: Past and Future”
84. University of California-Los Angeles (UCLA), Los Angeles, CA. 5/31/202
“UCLA CSRC HSI Senior STEM Faculty Director Vision Talk: La Unión Hace la Fuerza” and “Fe-Catalyzed Radical Cross-Coupling Reactions”
83. Novartis Keynote Speaker, Novartis Symposium, University of Michigan, 2024.
“Decoupled Fe-Catalyzed Cross-Coupling Reactions”
82. ACS New Orleans “Iron Catalysis and Biocatalysis for Organic Synthesis.” New Orleans, LA .2024. 3/20/24
81. University of California-Santa Barbara, Santa Barbara, CA 2024. 3/15/24
80. California State University-Sacramento, Sacramento, CA 2024. 3/12/24
“A Dreamer’s Pathway to Become a Professor: Tips and Tricks”
79. NAS_Kavli Frontiers of Science Symposium, Irvine, CA. 3/8/2024
78. University of Southern California, Los Angeles, CA. 1/23/2024
77. Winter-in-Person Organic Symposium (WIPOS), Honolulu, HI. 12/19/2023
76. University of Texas Southwestern, Dallas, TX. 11/16/2023
75. Diversity in Chemistry Mini-Symposium, Rutgers University, Newark, NJ. 10/23/2023
“A Dreamer’s Pathway to Become a Professor: Tips and Tricks”
74. University of Illinois-Chicago, Chicago, IL. 9/19/2023
“A Dreamer’s Pathway to Become a Professor: Tips and Tricks”
73. ACS National Meeting, Cross-Coupling with C(sp³) Fragments Symposium, San Francisco, CA, 8/16/2023.
72. ACS National Meeting, Catalyzing Collaboration: Bridging the Gap between Machine Learning, Computational Modeling, and Experimental Chemistry for Catalyst Design, San Francisco, CA, 8/15/2023.
71. ACS National Meeting, Houk 80th Birthday Symposium, San Francisco, CA, 8/15/2023.
70. Oxford University, Oxford, England. 7/13/2023
69. Chimie ParisTech, Paris, France. 7/11/2023
68. The Institute of Chemical Research of Catalonia (ICIQ), Tarragona, Spain. 7/6/2023
67. GRC Physical Organic Conference. Holderness, NH. 6/28/2023
66. Pittsburgh University, Pittsburgh, PA. 6/13/2023
65. University of Rochester, Rochester, NY. 3/22/2023
64. Caltech University, Pasadena, CA. 3/15/2023-3/16/2023
“A Dreamer’s Pathway to Become a Professor: Tips and Tricks”
63. Kansas State University, Manhattan, KS. 2/2/2023
62. Wake Forest University, Salen, NC. 1/18/2023
“Recent Advances in Fe-Catalyzed Radical Cascades/Cross-Couplings”
61. University of Houston, Houston, TX. 12/6/2022
“Recent Advances in Fe-Catalyzed Multicomponent Cross-Couplings”
60. Dartmouth College, Hanover, NH. 11/10/2022
“Recent Advances in Fe-Catalyzed Multicomponent Cross-Couplings”
59. 2022 SWRM, Cope Scholar Symposium, Baton Rouge, LA. 11/7/2022

O. Gutierrez, c.v. October 2023

58. "The advent and recent developments of Fe-catalyzed multicomponent cross-coupling reactions"
Cornell University, Ithaca, NY. 10/3/2022
57. "Recent Advances in Fe-Catalyzed Multicomponent Cross-Couplings"
Merck Discovery Chemistry "Virtual" Guest Lecture. San Francisco, CA. via Zoom. 9/26/2022.
56. "Recent Advances in Fe-Catalyzed Radical Cascades/Cross-Couplings"
28th Congress of the International Society of Heterocyclic Chemistry, Santa Barbara, CA. 8/30/2022
55. "Recent Advances in Fe-Catalyzed Multicomponent Cross-Couplings"
IUPAC Physical Organic Chemistry. Hiroshima, Japan. 7/13/2020
54. "Recent Advances in Fe-Catalyzed Radical Cascades/Cross-Couplings"
38th Reaction Mechanism Conference. Boulder, CO. 6/13/2020
53. "Mechanistic-Driven Development of Fe-Catalyzed Multicomponent Cross Coupling Reactions"
Chemistry Europe Virtual Symposium. 3/22/2022
52. "Merging Computational and Experimental Tools to Develop Fe-Catalyzed Radical Cascades/Cross-Couplings"
ACS National Meeting, From Theory to Therapy Symposium, San Diego, California, 3/15/2022.
(COVID-19 VIRTUAL)
51. "Mechanistic-driven design and development of Fe-catalyzed radical cascades/cross-couplings"
Columbia University, New York, NY. 3/9/2022.
50. "Recent Advances in Fe-Catalyzed Radical Cascades/Cross-Couplings"
The Florida Heterocyclic and Synthetic Chemistry Conference (FloHet), Gainesville, FL. 3/8/2022
49. "Beyond Two Component Fe-Catalyzed Radical Cross-Couplings"
Colorado State University, Fort Collins, CO. 2/7/2022
48. University of California-Davis, Davis, CA. 11/23/2021
47. ACS Division of Organic Chemistry Graduate Research Symposium. University of New Mexico in Albuquerque, NM. 11/18/2021
46. Bristol-Myers Squibb- Discovery Chemistry Department. 11/9/2021
45. Cope Scholar Symposium at the 2021 SWRM regional ACS meeting, Austin, Texas. 10/2/2021
44. Boston College, Newton, MA. 10/21/2021 (COVID-19 VIRTUAL)
43. Philipps-Universität Marburg, Marburg, Germany. 10/18/2021 (COVID-19 VIRTUAL)
42. California State University-San Marcos. San Marcos, CA. 9/15/2021 (COVID-19 VIRTUAL)
41. ACS/DOC Virtual Symposia. 9/15/2021
40. Harvard University. Cambridge, MA. 10/14/2021 (COVID-19 VIRTUAL)
39. Merck- Discovery Process Chemistry. West Point, PA. 7/22/2021. (COVID-19 VIRTUAL)
38. 2021 Middle Atlantic Regional Meeting-Frontiers in New Methods for Organic Synthesis. Newark, DE. 6/10/2021. (COVID-19 VIRTUAL)
37. University of Texas-San Antonio. San Antonio, NY. 4/30/2021 (COVID-19 VIRTUAL)
36. New York University. New York, NY. 3/30/2021 (COVID-19 VIRTUAL)
35. CINVSTAV, Mexico City, Mexico. 2/25/2021(COVID-19 VIRTUAL)
34. The College of New Jersey. Ewing, NJ. 2/17/2021 (COVID-19 VIRTUAL)
33. Brown University. Providence, RI. 1/29/2021 (COVID-19 VIRTUAL)
32. Philadelphia Organic Chemistry Club. University of Pennsylvania. Philadelphia. PA. 12/17/2020 (COVID-19 VIRTUAL)
31. University of Manitoba. Winnipeg, Manitoba, Canada. 11/17/2020 (COVID-19 VIRTUAL)
30. Pennsylvania State University. State College, PA. 11/11/2020 (COVID-19 VIRTUAL)
29. UCLA. Los Angeles, CA. 11/5/2020 (COVID-19 VIRTUAL)
28. University of Maryland. College Park, MD. 10/22/2020 (COVID-19 VIRTUAL)
27. Georgetown University. Washington, DC. 10/15/2020 (COVID-19 VIRTUAL)
26. Texas A&M University. College Station, TX. 10/8/2020 (COVID-19 VIRTUAL)
25. Indiana University. Bloomington, IN. 9/28/2020 (COVID-19 VIRTUAL)
24. Rensselaer Polytechnic Institute. Troy, NY. 9/15/2020 (COVID-19 VIRTUAL)
23. Young Academic Investigators. San Francisco, CA. 8/18/2020 (COVID-19 VIRTUAL)
22. Photochemistry Spotlight: Shining Light on the Big Questions of Photochemistry. 6/16/2020. (COVID-19 VIRTUAL)
21. Seton Hall University. South Orange, NJ. 2/25/2019
20. George Washington University. Washington, DC. 2/7/2019
19. Nanyang Technological University. Singapore, SG. 1/8/2019
18. National University of Singapore. Singapore, SG. 1/7/2019
17. Texas A&M University. College Station, TX. 10/21/2019
16. 2019 ACS San Diego. 8/27/2019.
15. 2019 TSRC Workshop on Accelerating Reaction Discovery. 7/21/2019
14. 2019 Middle Atlantic Regional Meeting (MARM) Early Career Organic Symposium. 6/1/2019.
13. Wayne State University, Detroit, MI. 4/17/2019.

12. University of Denver, Denver, CO. 4/12/2019
11. 257TH ACS National Meeting, Orlando, FL. 3/31/2019. Computers in Chemistry (COMP) Division.
10. Duquesne University, Pittsburg, PA. 2/22/2019.
9. Millersville University, Millersville, PA. 11/5/2018.
8. George Mason University, Fairfax, VA. 10/5/2018.
7. University of Guanajuato, Guanajuato, MX. 7/2/2018.
6. 2nd International Symposium on Organic Reaction Mechanisms (honor of Prof. K. N. Houk). (Peking University Shenzhen Graduate School in Shenzhen, China). 5/14/2018
5. Department of Chemical and Biomolecular Engineering, University of Maryland, College Park, MD. 11/28/2017.
4. Rising Stars in Chemistry Symposium, University of Chicago, Chicago, IL. 6/8/2015
3. 34rd Reaction and Mechanisms Conference, UC Davis, Davis, CA. 6/23/2014.
2. The Center for Research and Advanced Studies of the National Polytechnic Institute (CINVESTAV), Mexico City, Mexico. 3/28/2013.
1. National Autonomous University of Mexico (UNAM), Mexico City, Mexico. 3/27/2013.

Research Associates Mentored:

Undergraduates Students:

34. Omar Ramirez, Texas A&M University, Fall 2023-Spring 2024.
34. Pooja Rao, Texas A&M University, Fall 2023-current.
34. Kaleb Martinez, Texas A&M University, Summer 2024.
34. Logan Asay, Texas A&M University, Summer 2024.
34. Daniel Delgado Ortiz, Texas A&M University, Summer 2024.
33. Zachary Harshey, Texas A&M University, Summer 2024.
32. Alfonso Ortiz, Texas A&M University, Spring 2023-current.
31. Lukas Morehead, Texas A&M University, Fall 2022-Spring 2024.
30. Melanie Garcia, Texas A&M University, Summer 2022-Spring 2023.
29. Mireya Ramirez Lopez, Texas A&M University, Spring 2022-Fall 2022.
28. Yem Nguimbous, Prince George's Community College, Summer 2022.
27. Anthony Ramirez Chincilla, Prince George's Community College, Summer 2022.
26. Saul Flores, University of Maryland-College Park, Fall 2020-2021
25. Katya Beltran, University of Maryland-College Park, Spring 2020-2022
24. Joshua Turman, Prince George's Community College, Summer 2020
23. Dale Allen, Prince George's Community College, Summer 2020
22. Abigail Hunker, Frostburg State University, McNair Scholars Program, Summer 2020
21. Emma Walter, University of Maryland-College Park, Spring 2019-2021.

- Currently: Duke University Ph.D. Program

20. Stephanie Vargas, University of Maryland-College Park, Spring 2020- 2020
19. David Polefrone, University of Maryland-College Park, Fall 2019-2021

- Currently: University of Pennsylvania Ph.D. Program. NSF GRFP 2023 awardee.

18. Zachary Wilhelm, University of Maryland-College Park, Spring 2020-2021
17. Onyemachi Azubuko, Prince George's Community College, Summer 2019
16. Oreoluwa Akinyode, Prince George's Community College, Fall 2019
15. Brandon Williams, Prince George's Community College, Summer 2019
14. Yuliang (Aaron) Wu, University of Maryland-College Park, Fall 2017-2018
13. Michael "Ben" Geherty, University of Maryland-College Park, Spring 2019-2020
12. Victor Baumann, University of Maryland-College Park, Summer 2018-2020

- Currently: Cornell University Chemistry Program

11. Donovau Bialose, Prince George's Community College, Summer 2018-2018
10. Surjo Bandyopadhyay, University of Maryland-College Park, Fall 2016-201
9. Linus Nemiroff, University of Maryland-College Park, Spring 2018-Fall 2018
8. Michael Davis, University of Maryland-College Park, Summer 2018-2021
7. Christopher Acha, Prince George's Community College, McNair Scholars Program, Summer 2017-2020.

O. Gutierrez, c.v. October 2023

- Currently: John Hopkins University Ph.D. Program

6. Ashley Henriquez, Prince George's Community College, Summer 2017
5. Simone Williams, University of Maryland-College Park, Spring 2017-Spring 2018
4. Ashley Onwu, Prince George's Community College, Summer 2018
3. Alyssa Manio, Prince George's Community College, Summer 2018
2. Robert Martin, University of Maryland-College Park, Spring 2017-Spring 2018

- Currently: University of Maryland Ph.D. Program

1. Monica Cardenas, University of Maryland-College Park, Summer 2016

High School Students:

2. Deeya Garg, Montgomery Blair High School, Summer 2017
1. Pratik Lahiri, Richard Montgomery High School, Summer 2016

Graduate Students:

16. Adhya Sureh, Fall 2023-current
15. Deborshee Das, Fall 2023-current
14. Arnadeep Datta, Fall 2023-current
13. Macayla Guerrero, Fall 2022-current
12. Poulami Mukherjee, Fall 2022-current
11. Tapas Maity, Fall 2022-current
10. Jacob Grygus, Spring 2022-current
9. Achyut Gogoi, Fall 2021-current
8. Shuai Yin, Fall 2020-current
7. Cassandra Ruth Youshaw, Fall 2019-Spring 2024
•Current Position: Postdoctoral Researcher at the Naval Research Labs
6. Robert T. Martin, Fall 2018-2022.
•Current Position: [NSF MPS-ASCEND](#) Postdoctoral Researcher at Princeton University (Prof. MacMillan).
5. Dr. Mingbin Yuan, Fall 2017- 2022.
•Current Position: Postdoctoral Researcher at Los Alamos National Laboratories.
4. Dr. Zhihui Song, Fall 2017- 2022.
•Current Position. Research Scientist at Sinopec. China
3. Dr. Ryan Dykstra, 2017-2022.
•Current Position: Postdoctoral Researcher at Merck.
2. Dr. Madeline E. Rotella, 2017-2021.
•Current Position: [NIH K99/R00](#) Postdoctoral Researcher at UPenn (Prof. Kozlowski).
1. Dr. Wes Lee, Summer 2016-2021.
•Current Position: Postdoctoral Researcher at NIH.

Postdoctoral Associates:

6. Dr. Remy F. Lalisie, 2022-current
5. Dr. Ming-Hsiu Yang, 2022-current
4. Dr. Dinabandhu Sar, 2020-Spring 2024.
•Current Position: Associate Professor at University of Engineering and Management (IEM-UEM) Kolkata, India
3. Dr. Angel Renteria Gomez, Fulbright Scholar, Fall 2020-current
2. Dr. Lei Liu, 2017-2022.
•Current Position: Research Scientist at Incyte.
1. Dr. Jun Zhou, 2016-2018
Current position: Assistant Professor at Changsha University of Science & Technology.