Jared H. Delcamp

Primary: UES, Inc. Research Scientist; Air Force Research Labs
Affiliation: University of Mississippi, Associate Professor, Department of Chemistry and Biochemistry
Curriculum Vitae (long): Updated January 2023

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EDUCATION AND TRAINING

University of Kentucky, Lexington, KY, 2000-2005, B.S. in Chemistry 2005, Departmental Honors, Undergraduate Research Advisor: John Anthony
University of Illinois Urbana-Champaign, Urbana-Champaign, IL, 2005-2010, Ph.D in Chem., 2010 Advisor: M. Christina White
Swiss Federal Institute of Technology, Laboratory of Photonics and Interfaces, Lausanne, Switzerland, Advisor: Michael Grätzel, Postdoctoral Studies 2010-2012
Georgia Institute of Technology, School of Chemistry and Biochemistry, Atlanta, GA, Advisor: Seth R. Marder, Postdoctoral Studies 2012-2013

PROFESSIONAL APPOINTMENTS

University of Mississippi, Department of Chemistry and Biochemistry, Assistant Professor, 2013-2019
University of Mississippi, Department of Chemistry and Biochemistry, Associate Professor, 2019-present
UES, Inc./Air Force Research Labs, Materials and Manufacturing Directorate, Research Scientist, 2022-present

RESEARCH INTERESTS

1. Liquid preceramic materials for the formation of SiC and ultra high temperature ceramics.
2. Artificial photosynthesis systems employing molecular water oxidation catalysts, molecular CO_2 reduction catalysts, molecular H^+ reduction catalysts, and photoelectrochemical cells.
2. Photovoltaics for low light (indoor) and tandem applications including complementing performances of current solar cell technologies from any field and for use as part of self-powered wireless systems such as neural networks with onboard processing for IoT applications.
3. Near infrared and shortwave infrared (SWIR/NIR-II/NIR-III) molecular fluorophores for *in vivo* imaging.

AT A GLANCE STATISTICS (complete lists below)

1. 111 peer reviewed publications (91 in my independent career at Ole Miss)
2. Authoring ~20 publications a year in peer reviewed journals since becoming an associate professor
3. Received $4.4 million in federal grants directly to the Delcamp Group in my independent career
4. 3 Active NSF research grants and 1 active DOE research grant through 2023 or longer
5. 13 PhD students graduated
6. 37 undergraduates mentored in individual research
7. 10 patent applications filed (6 in my independent career) with 6 awarded and 4 pending

CURRENT RESEARCH GROUP MEMBERS (Start Year) ^NSF GRFP #Goldwater

Lab Manager/Research Scientist
1. Christine Curiac (2018)

Research Scientist
1. Qing Ivy Li[#] (2018)

Graduate Students
1. Ravinder Kaur (2019)
2. William Meador[^#] (2021)
3. Matt Saucier (2021)

Undergraduate Students
1. Timothy Lewis (2021)
2. Mallory Roberts (2021)
3. Brennan Seidel (2022)

PAST VISITING SCHOLAR & POSTDOC GROUP MEMBERS (year range in lab, duration of stay)

1. Kim Hamilton-Wims (2016, 3 months)
2. Hany El-Batal (2016, 4 months)
3. Simon Mathew (2019, 3 months)
4. Hammad Cheema (2016-2020, 4 years)
5. Satadru Chatterjee (2020-2021, 1.5 years)

GRADUATE DISSERTATIONS COMPLETED (graduation year)

1. Aron Huckaba (2015, Ph.D.)
2. Phillip Brogdon (2018, Ph.D.)
3. Nalaka Liyanage (2018, Ph.D.)
4. Shakeyia Davis (2018, MS)
5. Adithya Peddapuram (2019, Ph.D.)
6. Yanbing Zhang (2019, Ph.D.)
7. Alexandra Baumann (2019, Ph.D.)
8. Roberta Rodrigues (2019, Ph.D.)
9. Jacqueline Gayton (2020, Ph.D.)
10. Hunter Shirley (2021, Ph.D.)
11. Christine Curiac (2022, Ph.D.)
11. Jonathon Watson (2022, Ph.D.)
12. David Ndaleh (2022, Ph.D.)
13. Dinesh Nugegoda (2022, Ph.D.)

PAST UNDERGRAD. STUDENTS *Honors, ^REU, †One Per Co-Author Paper (last year, semesters)

1. Drew Puneky*†† (2015, 4)
2. Victoria Calcote* (2015, 1)
3. Alexa Zylstra^† (2015, 1)
4. Grant Whitehead (2014, 3)
5. Andriona Thomas (2015, 1)
6. Emily Anne Sharpe*†† (2016, 4)
7. Monica Bhula (2016, 4)
8. Joseph Scott Murphy*^††† (2016, 3)
9. Tana Rill*† (2016, 4)
10. Thao Ngoc Luong (2016, 2)
11. Grace Herrington (2016, 1)
12. Amber Morales^† (2016, 1)
13. Daniel Touzeau^ (2016, 1)
14. Bailey Flamm* (2017, 4)
15. Hunter Shirley† (2017, 6)
16. Casey Carpenter††† (2017, 6)
17. Martha Braselton^ (2017, 1)
18. Brenna Bierman^ (2018, 1)
19. Robert Pickering (2018, 1)
20. William Kisalus (2018, 3)
21.Harshin Sanjanwala*† (2018, 3)
22. Kayla Foell*† (2019, 4)
23. Joanndria Brown (2019, 3)
24. Katie Groenhout^ (2019, 1)
25. Phillip Burrow† (2018, 3)
26. Andrew Daniel† (2018, 3)
27. Khue Nguyen (2018, 3)
28. Catherine Becker (2021, 1)
29. William Meador*†††††† (2021, 8)
30. Madison McGuire^ (2021, 1)
31. Ainsley LaMore^ (2021, 1)
32. Samantha Schwartz^ (2021, 1)
33. Abigail Hogue (2022, 2)
34. Qing Yun 'Ivy' Li*†††† (2022, 8)

PAST HIGH SCHOOL RESEARCH GROUP MEMBERS (year of research)

1. Keshuna Tables (2014)
2. Ankeyvias Harris (2014)
3. Jeremy Ryan (2015)
4. Tyler Lott (2015)
5. Wrishija Roy (2016)
6. Baili Zhong (2016)
7. Alexus Weekley (2016)
8. Dalanta Gardner (2016)
9. Claire Pearson (2017)
10. Radnor Fowler (2017)
11. Michael Zhang (2017)
12. Stephanie Dauber (2017)
13. Michelle Luo (2018)
14. Christopher French (2018)
15. William Miller (2018)
16. Aidan Warren (2018)
17. Destinee Jones (2019)
18. Malayasia Hill (2019)

HONORS AND AWARDS

Faculty Award: Energy & Fuels magazine: Rising Star Award (2022)
Faculty Award: Michael L. Edmonds New Scholar Award (2017)
Post-doctorate Award: NSF Postdoctoral Fellowship (2012, Offer declined due to excessive funding)
Post-doctorate Award: EPFL Prestations d'une Valeur Exceptionnelle (2011)
Graduate Student Award: ACS Organic Division Fellowship (2008)
Graduate Student Award: Sigma-Aldrich Graduate Innovation Award (2007)
Graduate Student Award: Pytosch Fellowship (2006)
Graduate Student Award: Fuson Travel Award (2006)
Undergraduate Student Award: Cornell Research Experience for Undergraduates Internship (2004)
Undergraduate Student Award: Wilbur L. Price Memorial Scholarship (2001)

PUBLICATIONS Total (111 published, 91 independent) Undergraduate Co-Authors Underlined in Red

UES/AFRL Research Scientist (2 submitted, 2 awaiting submission):

122) Delcamp, J. H.; *et. al.* Closed Journal Submission Prepared, **2022**.

121) Delcamp, J. H.; *et. al.* Closed Journal Submission Prepared, **2022**.

120) Delcamp, J. H.; Martin, K.; Posey, N.; Acord, K.; Thompson, C.; Dickerson, M. "Preceramic Polymers Grafted to SiO_2 Nanoparticles via Metal Coordination Pyrolyzing with High Ceramic Yields: Implications for Aerospace Propulsion and Biomedical Coatings" *Submitted*, **2022**.

119) Posey, N.; Delcamp, J. H.; Dickerson, M. "Preceramic Polymer-Grafted Nanoparticles Assembled via Ionic Complexation" *Submitted*, **2022**.

Associate Professor Publications (46 accepted, 7 submitted):

118) Meador, W. E.; Lin, E. Y.; Lim, I.; Friedman, H. C.; Ndaleh, D.; Shaik, A. K.; Hammer, N. I.; Yang, B.; Caram, J. R.; Sletten, E. M.; Delcamp, J. H. "Shortwave Infrared Absorbing and Emitting Silicon-Rosindolizine Fluorophores for in vivo Fluorescence Imaging" *Submitted*, **2022**.

117) Saucier, M. A.; Smith, C.; Kruse, N. A.; Hammer, N. I.; Delcamp, J. H. "Acid-Triggered Switchable Near-Infrared/Shortwave Infrared Absorption and Emission of Indolizine-BODIPY Dyes" *Submitted*, **2022**.

116) Santaloci, T. J.; Meador, W. E.; Wallace, A. M.; Rogers, B. N.; Delcamp, J. H.; Fortenberry, R. C. "An Automated Quantum Chemistry-Driven, Experimental Characterization for High PCE Donor-π-Acceptor NIR Molecular Dyes" *Submitted*, **2022**.

115) Singh, S.; Meador, W. E.; Pramanik, A.; Ray, P.; Delcamp, J. H.; Zhao, Y. " Indolizine Squaraine: A Novel Water-Soluble NIR Dye for Bacterial Fluorescence Imaging and Antibacterial/Antibiofilm Activity using the Photothermal Effect" *Submitted*, **2022**.

114) Qu, J.; Meador, W. E.; Cheah, P.; Tanner, E.; Delcamp, J. H.; Zhao, Y. "Latent Bloodstain Detection Using a Selective Turn-On NIR Fluorescence Dye Responsive to Serum Albumin" *Submitted*, **2022**.

113) Hunt, L. A.; Das, S.; Nugegoda, D.; Lamb, R. W.; Figgins, M.; Qu, F.; Webster, C. E.; Hammer, N. I.; Delcamp, J. H.; Papish, E. T. "Ruthenium (II) Complexes of CNC Pincers and Bipyridine in the Photocatalytic CO_2 Reduction Reaction to CO using Visible Light: Catalysis, Kinetics, and Computational Insights" *Submitted,* **2022**.

112) Ranathunge, T. A.; Curiac, C.; Green, K.; Kolodziejczyk, W.; Hill, G.; Morgan, S.; Delcamp, J. H.; Watkins, D. L. "Heteroacene Based Polymer with Fast-Switching Visible-NIR Electrochromic" *Submitted*, **2022**.

111) Raithel, A. L.; Meador, W. E.; Kim, T.-Y.; Staples, R. J.; Delcamp, J. H.; Hamann, T. W. "Molecular Switch Cobalt Redox Shuttle with a Tunable Hexadentate Ligand" *J. Am. Chem. Soc.* **2022**, Just Accepted.

110) Dorris, A. L.; Watson, J.; Mosely, J. J.; Lambert, E. C.; Tschumper, G. S.; Delcamp, J. H.; Hammer, N. I. "Effects of Proaromaticity on Excited-State Lifetimes and Charge Separation in Near-Infrared Sensitizer Dyes in Solution and on TiO_2" *J. Phys. Chem. C* **2022**, DOI: 10.1021/acs.jpcc.2c06906. [link] **Supplementary Cover**

109) Li, Q. Y.; Hunt, L. A.; Wijesinghe, K. H.; Curiac, C.; Williams, A.; Dass, A.; Hammer, N. I.; Delcamp, J. H. "Dicyanobenzothiadiazole (DCBT) Organic Dye as a Visible Light Absorbing Strong Photoinduced Oxidant with a 16 Microsecond Long-Lived Excited State" *Adv. Energy Mater.* **2022**, DOI: 10.1002/aenm.202203102. [link] **Back Inside Cover**

108) Nugegoda, D.; Tzouras, N. V.; Nolan, S. P.; Delcamp, J. H. "*N*-Heterocyclic Carbene Gold Complexes in a Photocatalytic CO_2 Reduction System" *Inorg. Chem.* **2022**, *61*, 18802. [link]

107) Chatterjee, S.; Shaik, A. K.; Wijesinghe, K. H.; Ndaleh, D.; Dass, A.; Hammer, N. I.; Delcamp, J. H. "Design and Synthesis of RhodIndolizine Dyes with Improved Stability and Shortwave Infrared Emission up to 1250 nm" *J. Org. Chem.* **2022**, *87*, 11319. [link]

106) Meador, W. E.; Kapusta, K.; Owolabi, I.; Autry, S. A.; Saloni, J.; Kolodziejczyk; W.; Hammer, N. I.; Flynt, A. S.; Hill, G. A.; Delcamp, J. H. "Ultra Bright Near-Infrared Sulfonate-Indolizine Cyanine- and Squaraine-Albumin Chaperones: Record Quantum Yields and Applications" *ChemPhotoChem* **2022**, *6*, e202200127. [link] **Cover Article**

105) Boudreaux, C. M.; Nugegoda, D.; Yao, W.; Le, N.; Frey, N. C.; Li, Q.; Qu, F.; Zeller, M.; Webster, C. E.; Delcamp, J. H.; Papish, E. T. "Low-Valent Cobalt(I) CNC Pincer Complexes as Catalysts for Light-Driven Carbon Dioxide Reduction" *ACS Catal.* **2022**, *12*, 8718. [link]

104) Roy, J. K.; Kaur, R.; Daniel, A.; Baumann, A.; Li, Q.; Delcamp, J. H.; Leszczynski, J. "Photophysical Properties of Donor–Acceptor–π Bridge–Acceptor Sensitizers with a Naphthobisthiadiazole Auxiliary Acceptor: Toward Longer-Wavelength Access in Dye-Sensitized Solar Cells" *J. Phys. Chem. C* **2022**, *126*, 11875. [link]

103) Devdass, A.; Watson, J.; Firestone, E.; Hamann, T. W.; Delcamp, J. H.; Jurss, J. W. "An Efficient Copper-Based Redox Shuttle Bearing a Hexadentate Polypyridyl Ligand for DSCs under Low-Light Conditions" *ACS Appl. Energy Mater.* **2022**, *5*, 5964. [link]

102) Nugegoda, D.; Bhattacharya, S.; Hunt, L. A.; Schwartz, S. J.; Turner, Z. H.; Hammer, N. I.; Jurss, J. W.; Delcamp, J. H. "Designing Self-Assembled Dye–Redox Shuttle Systems via Interfacial π-Stacking in Dye-Sensitized Solar Cells for Enhanced Low Light Power Conversion" *Energy Fuels* **2022**, *36*, 7075. [link]

101) Das, S.; Nugegoda, D.; Yao, W.; Qu, F.; Figgins, M. T.; Lamb, R. W.; Webster, C. E.; Delcamp, J. H.; Papish, E. T. "Sensitized and Self-Sensitized Photocatalytic Carbon Dioxide Reduction Under Visible Light with Ruthenium Catalysts Shows Enhancements with More Conjugated Pincer Ligands" *Eur. J. Inorg. Chem.* **2022**, *2022*, e202101016. [link]

100) Nugegoda, D.; Hunt, L. A.; Devdass, A.; Cheema, H.; Fortenberry, R. C.; Jurss, J. W.; Hammer, N. I.; Delcamp, J. H. "Lewis Acid-Lewis Base Interactions Promote Fast Interfacial Electron Transfers with a Pyridine-Based Donor Dye in Dye-Sensitized Solar Cells" *ACS Appl. Energy Mater.* **2022**, *5*, 1516. [link]

99) Chandrasiri, I.; Yaddehige, M. L.; Li, B.; Sun, Y.; Meador, W. E.; Dorris, A.; Zia, M. F.; Hammer, N. I.; Flynt, A.; Delcamp, J. H.; Davis, E.; Lippert, A.; Watkins, D. L. "Cross-linking Poly(caprolactone)-Polyamidoamine Linear Dendritic Block Copolymers for Theranostic Nanomedicine" *ACS Appl. Polym. Mater.* **2022**, *4*, 2972. [link]

98) Watson, J.; Rodrigues, R. R.; Delcamp, J. H. "Near-Infrared Unsymmetrical Squaraine Core-Based Sensitizers for Co-Sensitized High-Photocurrent Dye-Sensitized Solar Cells" *Cell Rep. Phys. Sci.* **2022**, *3*, 100701. [link]

97) Hunt, L. A.; Rodrigues, R. R.; Foell, K.; Nugegoda, D.; Cheema, H.; Hammer, N. I.; Delcamp, J. H. "Preferential Direction of Electron Transfers at a Dye-Metal Oxide Interface with an Insulating Fluorinated Self-Assembled Monolayer and MgO" *J. Phys. Chem. C* **2021**, *125*, 25410. [link]

96) Munoz-García, A. B.; Benesperi, I.; Boschloo, G.; Concepcion, J. J.; **Delcamp, J. H.**; Gibson, E. A.; Meyer, G. J.; Pavone, M.; Pettersson, H.; Hagfeldt, A.; Freitag, M. "Dye-Sensitized Solar Cells Strike Back" *Chem. Soc. Rev.* **2021**, *50*, 12450. [link]

95) Ndaleh, D.; Smith, C.; Yaddehige, M. L.; Shaik, A. K.; Watkins, D. L.; Hammer, N. I.; **Delcamp, J. H.** "Shortwave Infrared Absorptive and Emissive Pentamethine-Bridged Indolizine Cyanine Dyes" *J. Org. Chem.* **2021**, *86*, 15376. [link]

94) Qi, Y.; Ndaleh, D.; Meador, M. E.; **Delcamp, J. H.**; Hill, G.; Pradhan, N. R.; Dai, Q. "Interface Passivation of Inverted Perovskite Solar Cells by Dye Molecules" *ACS Appl. Energy Mater.* **2021**, *4*, 9525. [link]

93) Chatterjee, S.; Meador, M. E.; Smith, C.; Chandrasiri, I.; Zia, M. F.; Nguyen, J.; Dorris, A.; Flynt, A.; Watkins, D. L.; Hammer, N. I.; **Delcamp, J. H.** "SWIR emissive RosIndolizine dyes with nanoencapsulation in water soluble dendrimers" *RSC Adv.* **2021**, *11*, 27832. [link]

92) Curiac, C.; Hunt, L. A.; Sabuj, M. A.; Li, Q.; Baumann, A.; Cheema, H.; Zhang, Y.; Rai, N.; Hammer, N. I.; **Delcamp, J. H.** "Probing Interfacial Halogen-Bonding Effects with Halogenated Organic Dyes and a Lewis Base-Decorated Transition Metal-Based Redox Shuttle at a Metal Oxide Interface in Dye-Sensitized Solar Cells" *J. Phys. Chem. C* **2021**, *125*, 17647. [link]

91) Simms, B. L.; Ji, N.; Chandrasiri, I.; Zia, M. F.; Udemgba, C. S.; Kaur, R.; **Delcamp, J. H.**; Flynt, A.; Tan, C.; Watkins, D. L. "Physicochemical properties and bio-interfacial interactions of surface modified PDLLA-PAMAM linear dendritic block copolymers" *J. Poly. Sci.* **2021**, *59*, 2177. [link]

90) Curiac, C.; Rodrigues, R. R.; Watson, J.; Hunt, L. A.; Devdass, A.; Jurss, J. W.; Hammer, N. I.; Fortenberry, R. C.; **Delcamp, J. H.** "Iron Redox Shuttles with Wide Optical Gap Dyes for High Voltage Dye-Sensitized Solar Cells" *ChemSusChem* **2021**, *14*, 3084. [link]

89) Shirley, H. P.; Sexton, T. M.; Liyanage, N. P.; Perkins, M. A.; Autry, S. A.; McNamara, L. E.; Hammer, N. I.; Parkin, S.; Tschumper, G. S.; **Delcamp, J. H.** "Probing the Effects of Electron Deficient Aryl Substituents and a π-System Extended NHC Ring on the Photocatalytic CO_2 Reduction Reaction with Re-pyNHC-aryl Complexes" *ChemPhotoChem* **2021**, *5*, 353. [link]

88) Cheema, H.; Watson, J.; **Delcamp, J. H.** "Integrating GaAs, Si, and Dye-Sensitized Solar Cells in Multijunction Devices and Probing Harsh Condition Behavior" *ACS Appl. Electron. Mater.* **2021**, *3*, 316. [link]

87) Qi, Y.; Meador, W. E.; Xiong, J.; Abbaszadeh, M.; **Delcamp, J. H.**; Kundu, S.; Hill, G.; Dai, Q. "Structural, Optical, Photocatalytic, and Optoelectronic Properties of Zn_2SnO_4 Nanocrystals Prepared by Hydrothermal Method" *Nanotechnology* **2021**, *32*, 145702. [link]

86) Ndaleh, D. N. D.; Nugegoda, D.; Watson, J.; Cheema, H.; **Delcamp, J. H.** "Donor Group Influence on Dye-Sensitized Solar Cell Device Performances: Balancing Dye Loading and Donor Size" *Dyes Pigm.* **2021**, *187*, 109074. [link]

85) Wallace, A. M.; Curiac, C.; **Delcamp, J. H.**; Fortenberry, R. C. "Accurate Determination of the Onset Wavelength (λ_{onset}) in Optical Spectroscopy" *J. Quant. Spectrosc. Radiat. Transf.* **2021**, *265*, 107544. [link]

84) Watson, J.; Santaloci, T. J.; Cheema, H.; Fortenberry, R. C.; **Delcamp, J. H.** "Full Visible Spectrum Panchromatic Triple Donor Dye for Dye-Sensitized Solar Cells" *J. Phys. Chem. C* **2020**, *124*, 25211. [link]

83) Sparks, N. E.; Ranathunge, T. A.; Attanayake, N. H.; Brogdon, P.; **Delcamp, J. H.**; Rajapakse, R. M. G.; Watkins, D. L. "Electrochemical Copolymerization of Isoindigo-Based Donor-Acceptor Polymers with Intrinsically Enhanced Conductivity and Near-Infrared-II Activity" *ChemElectroChem* **2020**, *7*, 3752. [link]

82) Das, S.; Nugegoda, D.; Qu, F.; Boudreaux, C. M.; Burrow, P. E.; Figgins, M. T.; Lamb, R. W.; Webster, C. E.; **Delcamp, J. H.**; Papish, E. T. "Structure Function Relationships in Ruthenium Carbon Dioxide Reduction Catalysts with CNC Pincers Containing Donor Groups" *Eur. J. Inorg. Chem.* **2020**, *2020*, 2709. [link]

81) Shirley, H.; Figgins, M. T.; Boudreaux, C. M.; Liyanage, N. P.; Lamb, R. W.; Webster, C. E.; Papish, E. T.; **Delcamp, J. H.** "Impact of the Dissolved Anion on the Electrocatalytic Reduction of CO_2 to CO with Ruthenium CNC Pincer Complexes" *ChemCatChem* **2020**, *12*, 4879. [link]

80) Chandrasiri, I.; Abebe, D. G.; Yaddehige, M. L.; Williams, J. S. D.; Zia, M. F.; Barker, A.; Dorris, A.; Parker, A.; Simms, B. L.; Le, N.; Gayton, J. N.; Hammer, N. I.; **Delcamp, J. H.**; Flynt, A.; Watkins, D. L. "Self-Assembling PCL-PAMAM Linear Dendritic Block Copolymers (LDBCs) for Bioimaging and Phototherapeutic Applications" *ACS Appl. Bio Mater.* **2020**, *3*, 5664. [link] **Supplementary Cover**

79) Cheema, H.; Watson, J.; **Delcamp, J. H.** "Photon Management Strategies in SSM-DSCs: Realization of a >11% PCE Device with a 2.3 V Output" *Solar Energy,* **2020**, *208*, 747. [link]

78) Gayton, J.; Li, Q.; Sanders, L.; Rodrigues, R. R.; Hill, G.; **Delcamp, J. H.** "Pyridyl CO_2 Fixation Enabled by a Secondary Hydrogen Bonding Coordination Sphere" *ACS Omega* **2020**, *5*, 11687. [link]

77) Shirley, H.; Sexton, T. M.; Liyanage, N. P.; Palmer, C. Z.; McNamara, L. E.; Hammer, N. I.; Tschumper, G. S.; **Delcamp, J. H.** "Effect of "X" Ligands on the Photocatalytic Reduction of CO_2 to CO with Re(pyridylNHC-CF_3)$(CO)_3$X Complexes" *Eur. J. Inorg. Chem.* **2020**, *2020*, 1844. [link] **Cover Feature**

76) Davis, S.; Nugegoda, D.; Tropp, J.; Azoulay, J. D.; **Delcamp, J. H.** "Molecular Au(I) Complexes in the Photosensitized Photocatalytic CO_2 Reduction Reaction" *MRS Commun.* **2020**, *10*, 252. [link] **Cover Article**

75) Ranathunge, T. A.; Ngo, D.; Karunarathna, D.; Attanayake, N. H.; Chandrasiri, I.; Brogdon, P.; **Delcamp, J. H.**; Rajapakse, R. M. G.; Watkins, D. L. "Designing Hierarchical Structures of Complex Electronically Conducting Organic Polymers via One-Step Electro-Polymerization" *J. Mater. Chem. C* **2020**, *8*, 5934. [link]

74) Cheema, H.; Watson, J.; Shinde, P. S.; Rodrigues, R. R.; Pan, S.; **Delcamp, J. H.** "Precious Metal-Free Solar-to-Fuel Generation: SSM-DSCs Powering Water Splitting with NanoCOT and NiMoZn Electrocatalysts" *Chem. Commun.* **2020**, *56*, 1559. [link]

73) Daniel, A.; **Delcamp, J. H.** "Dye-Sensitized Solar Cells: A Brief Historical Perspective and Uses in Multijunction Devices" Submitted, *Development of Solar Cells - Theory and Experiment*, Spring Publishing, **2020**, ISBN 978-3-030-69444-9. Part of the "Challenges and Advances in Computational Chemistry" series. [link]

72) Meador, W. E.; Autry, S. A.; Bessetti, R.; Gayton, J. G.; Flynt, A.; Hammer, N. I.; **Delcamp, J. H.** "Water Soluble NIR Absorbing and Emitting Indolizine Cyanine and Indolizine Squaraine Dyes for Biological Imaging" *J. Org. Chem.* **2020**, *85*, 4089. [link] **Supplementary Cover**

71) Baumann, A.; Curiac, C.; **Delcamp, J. H.** "Approaches to The Hagfeldt Donor and Use of Next Generation Bulky Donor Designs in Dye-Sensitized Solar Cell Dyes" *ChemSusChem* **2020**,*13*, 2503. [link]

70) Gayton, J.; Autry, S. A.; Kolodziejczyk, W.; Hill, G. A.; Hammer, N. I.; **Delcamp, J. H.** "Phosphate and Water Sensing with a Zinc Dipicolylamine-Based Charge Transfer Dye" *ChemistrySelect* **2020**, *5*, 1945. [link]

69) Rodrigues, R, R.; Lee, J. M.; Taylor, N. S.; Cheema, H.; Chen, L.; Fortenberry, R. C.; **Delcamp, J. H.**; Jurss, J. W. "Copper-Based Redox Shuttles Supported by Preorganized Tetradentate Ligands for Dye-Sensitized Solar Cells" *Dalton Trans.* **2020**, *49*, 343. [link]

68) Shirley, H.; Parkin, S. P.; **Delcamp, J. H.** "Photoinduced Generation of a Durable, High Turnover Frequency Thermal Proton Reduction Catalyst from a Manganese-Bipyridine Complex" *Inorg. Chem.* **2020**, *59*, 11266. [link] **Supplementary Cover**

67) Cheema, H.; Watson, J.; Peddapuram, A.; **Delcamp, J. H.** "A 25 mA/cm^2 Dye-Sensitized Solar Cell Based on a Near-Infrared-Absorbing Organic Dye and Application of the Device in SSM-DSCs" *Chem. Commun.* **2020**, *56*, 1741. [link]

66) Baumann, A.; Watson, J.; **Delcamp, J. H.** "Robust, Scalable Synthesis of the Bulky Hagfeldt Donor for Dye-Sensitized Solar Cells" *ChemSusChem* **2020**, *13*, 283. [link] **Cover Feature**

Assistant Professor Publications (45 published):

65) Cheema, H.; **Delcamp, J. H.** "SnO_2 Transparent Printing Pastes from Powders for Photon Conversion in SnO_2 Based Dye-Sensitized Solar Cells" *Chem. Eur. J.* **2019**, *24*, 14205. [link]

64) Rathnamalala, C. S. L.; Gayton, J. N.; Dorris, A. L.; Meador, W.; Hammer, N. I.; **Delcamp, J. H.**; Scott, C. N. "Donor-Acceptor-Donor NIR II Emissive Rhodindolizine Dye Synthesized by C-H Bond Functionalization" *J. Org. Chem.* **2019**, *84*, 13186. [link]

63) Ranathunge, T. A.; Karunathilaka, D.; Ngo, D. T.; Attanayake, N. H.; Brogdon, P.; **Delcamp, J. H.**; Rajapakse, R. M. G.; Watkins, D. L. "Radically Accessing D-A Type Ambipolar Copolymeric Materials with Intrinsic Electrical Conductivity and Visible-Near Infrared Absorption via Electro-Copolymerization" *Macromol. Chem. Phys.* **2019**, 1900289. [link] **Cover Article**

62) Rodrigues, R. R.; Peddapuram, A.; Dorris A. L.; Hammer, N. I.; **Delcamp, J. H.** "Thienopyrroledione-Based Photosensitizers as Strong Photoinduced Oxidants: Oxidation of $Fe(bpy)_3^{2+}$ in a >1.3 V Dye-Sensitized Solar Cell" *ACS Appl. Energy Mater.* **2019,** *2*, 5547. [link]

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20) Mathew, S.; Astani, N. A.; Curchod, B. F. E.; **Delcamp, J. H.**; Marszalek, M.; Frey, J.; Rothlisberger, U.; Nazeeruddin, M. K.; Grätzel, M. "Synthesis, Characterization and Ab Initio Investigation of a Panchromatic Ullazine–Porphyrin Photosensitizer for Dye-Sensitized Solar Cells" *J. Mater. Chem. A* **2016**, *4*, 2332.

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Graduate Publications (5 published):

11) **Delcamp, J. H.**; Gormisky, P. E.; White, M. C. "Oxidative Heck Vinylation for the Synthesis of Complex Dienes and Polyenes" *J. Am. Chem. Soc.* **2013**, *135*, 8460.

10) Vermeulen, N. A.; **Delcamp, J. H.**; White, M. C. "Synthesis of Complex Allylic Esters via C-H Oxidation vs C-C Bond Formation" *J. Am. Chem. Soc.* **2010**, *132*, 11323.

9) **Delcamp, J. H.**; White, M. C. "1,2-Bis(phenylsulfinyl)ethane" *e-EROS Encyclopedia of Reagents for Organic Chemistry* **2009**, DOI: 10.1002/047084289X.rn00971.

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Undergraduate Publications (6 published):

6) Slinker, J. D.; Kim, J. S.; Flores-Torres, S.; **Delcamp, J. H.**; Abruna, H. D.; Friend, R. H.; Malliaras, G. G. "In Situ Identification of a Luminescence Quencher in an Organic Light-Emitting Device" *J. Mat. Chem.* **2007**, *17*, 76.

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4) Wolak, M. A.; Melinger, J. S.; Lane, P. A.; Palilis, L. C.; Landis, C. A.; **Delcamp, J. H.**; Anthony, J. E.; Kafafi, Z. H. "Photophysical Properties of Dioxolane-Substituted Pentacene Derivatives Dispersed in Tris(quinolin-8-olato)aluminum(III)" *J. Phys. Chem. B* **2006**, *100*, 7928.

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GRANTS AWARDED ($4.4 million over 8 years allocated to Delcamp Group; 2 additional recommended)

Faculty Grants:

20) NIH "Recommended for funding"

19) NIJ "Recommended for funding"

18) NSF CHE CAT (2102511) "Collaborative Research: Macrocyclic and Supramolecular Pincer Catalysts Using Ruthenium and First Row Metals for Carbon Dioxide Reduction" $180,840 ($180,840 to Delcamp as PI 08/01/2021-07/31/2024)
17) NSF CHE CSDMB (1954922) "Photoinduced Interfacial Charge Transfers with Organic Sensitizers using Low Energy Photons and Fundamental Physical Organic Design Concepts" $585,951 ($330,862 to Delcamp as PI 08/01/2020-07/31/2023)
16) NSF EPSCoR Track 1 (1757220) "RII Track-1: Center for Emergent Molecular Optoelectronics (CEMOs)" $20,000,000 total ($824,168 to Delcamp, co-PI, Site Lead, Research Thrust Lead, 08/01/2018-07/31/2023)
15) DOE Early Career (DE-SC0019131) "Controlling Interfacial Charge Separation Energetics and Kinetics" $750,000 (PI, Single Investigator 9/1/2018-8/31/2023)
14) NSF OIA EPSCoR Track II (1539035) "RII Track-2 FEC: Feeding and Powering the World – Capturing Sunlight to Split Water and Generate Fertilizer and Fuels" $5,999,997 ($834,285 to Delcamp, 9/1/2015-8/31/2019)
13) NSF CHE CSDMB (1455167) "CAREER: Near-IR Absorbing Dyes for Stable Dye-Sensitized Solar Cell Devices" $523,449 (PI, Single Investigator 8/1/2015-7/31/2020)
12) NSF CHE CAT (1800281) "Collaborative Research: SusChem: Atomistic Switches on Pyridinol Based Pincer Ligated Catalysts for Carbon Dioxide Reduction" $616,678 ($150,543 to Delcamp PI, 7/1/2018-6/30/2021)
11) NSF OIA EPSCoR Track II (1632825) "RII Track-2-FEC: Emergent Polymer Sensing Technologies for Gulf Coast Water Quality Sensors" $3,999,966 ($379,500 to Delcamp, co-PI, site lead, 9/1/2016-8/31/2020)
10) NASA EPSCoR RID Seed Grant (NNX15AK39A) "Dye-sensitized Solar Cells with Halogen Bonding Recognition for High Voltage Systems" $65,000 ($32,500 to Delcamp, PI, 9/1/2017-5/31/2018)
9) NSF EPSCoR Track I Outreach Subaward (0903787) "Exploration of New Materials for Conversion of CO_2 to Gasoline: High School Summer Exploratory Research" $5,000 (PI, 2/01/2014-8/31/2014)
8) NSF EPSCoR Seed Grant (0903787) "Development of NIR Dyes Baring Novel Heterocyclic Structures for Dye Sensitized Solar Cells: A Combined Experimental, Computational Approach" $53,000 ($36,000 to Delcamp, PI, 9/01/2013-8/31/2014)
7) NSF EPSCoR Seed Grant (0903787) "NIR Dyes Based on Indolizine Donors for Dye Sensitized Solar Cells" $72,000 ($36,000 to Delcamp, PI, 9/01/2014-8/31/2016)
6) MRC Travel/Writing Grant "Making Solar Energy Affordable: Stable, Processable Organic Photovoltaics" $8,000 ($1,000 to Delcamp, co-PI, 1/1/2016-9/1/2017)
5) NSF REU (1757888) "REU SITE: Ole Miss Physical Chemistry Summer Research Program" $326,697 ($1950 to Delcamp, senior personnel, 9/1/2018-8/31/2021)
4) NSF REU (1460568) "REU SITE: Ole Miss Physical Chemistry Summer Research Program" $326,697 ($2000 to Delcamp, senior personnel, 9/1/2015-8/31/2018)
3) NSF REU (1156713) "REU SITE: Ole Miss Physical Chemistry Summer Research Program" $299,682 ($1500 to Delcamp, senior personnel, 9/1/2012-8/31/2015)
2) NSF CHE MRI: "Acquisition of a Raman Spectrometer for Research and Training at the University of Mississippi" $231,429. ($0 to Delcamp, senior personnel, 9/1/2015-8/31/2018).
1) NSF EPSCoR "Modeling and Simulation of Complex Systems" $68,000 (PI, 9/01/2013-8/31/2014)

PATENTS (11 total filed, 10 Awarded, 1 Pending)

UES/AFRL Research Scientist:

12) Delcamp, et. al. Closed US Patent Filed 2023.

Associate Professor Patents:

12) Meador, W. M.; Ndaleh, D. N. D.; Delcamp, J. H. "Indolizine Dyes with Short Wavelength Infrared Absorption and Emission and Methods for Making and Using the Same" US Patent **2022**, US20220370641.
10) Scott, C.; **Delcamp, J. H.**; Hammer, N. I. "Design, Synthesis, and Photophysical Properties of a Novel NIR-II Dye for Biological Imaging and Optoelectronic Devices" US Patent **2022**, US20220056335.

Assistant Professor Patents:

9) Papish, E. T.; **Delcamp, J. H.** "Light Driven Metal Pincer Photocatalysts for Carbon Dioxide Reduction to Carbon Monoxide" US Patent Awarded **2021**, US11103861.
8) Hollis, T. K.; **Delcamp, J. H.**; Webster, C. "Symmetrical CCC-NHC Pincer Metal Complexes and Symmetrical Bimetallic Complexes: Bio-activity, and Applications to Organic Transformations and Energy-related Catalytic Methods" US Patent Awarded **2021**, US11084839.
7) **Delcamp, J. H.** Rodrigues, R. R.; Reddapuram, A.; Cheema, H. "Dye-Sensitized Solar Cells, and the methods of making and using the same" CIP US Patent **2020**, US20200247998.
6) **Delcamp, J. H.** Rodrigues, R. R.; Reddapuram, A.; Cheema, H. "Dye-Sensitized Solar Cells, and the methods of making and using the same" European Patent **2021**, EP3658625; US Patent **2020**, US20200231817.
5) Huckaba, A.; **Delcamp, J. H.** "Indolizine-Based Dyes for Dye-Sensitized Solar Cells" US Patent Awarded **2020**, US10562913.

Post-doctoral Patents:
4) **Delcamp, J. H.**; Grätzel, M.; Nazeeruddin, M. K. "Compounds for Electrochemical and/or Optoelectronic Devices" WO Patent **2013**, 057538 A1; Awarded.
3) Yum, J.-H.; **Delcamp, J. H.**; Nazeeruddin, M. K.; Grätzel, M. "Novel Organic Dye and Preparation Thereof" Korean Patent Application Filed.
2) Mathew, S.; **Delcamp, J. H.**; Nazeeruddin, M. K.; Grätzel, M. "Porphyrin Ullazine Dye for DSSC" Eur. Patent Application Filed.
1) An, H.-C.; Jung, H.-J.; Bae, H.-G.; Park, C.-S.; Lee, C.-Y.; Grätzel, M.; Nazeeruddin, M. K.; Chenyi, Y.; **Delcamp, J. H.** "Novel Organic Dye and a Production Method Therefor" WO Patent **2012**, 102544.

INVITED PRESENTATIONS AND CONFERENCES (>150 student professional presentations unlisted)

Scheduled Presentations:

85) **March 2023**. "High char yield preceramic materials from nanoparticles, transition metals, and polymers" American Chemical Society National Meeting, Indianapolis, IN.

Delivered Presentations:

84) **June, 2022**. "Photodriven SWIR Imaging and Fuel Production" Wake Forest University, Winston-Salem, NC.
83) **June, 2022**. "Controlling Interfacial Charge Separation Energetics and Kinetics" Solar Photochem DOE PIs Meeting, Washington, D.C. (virtual).
82) **May, 2022**. "Organic Materials in the NIR and SWIR Regions for Imaging and Electrical Signaling" Seth Marder Symposium, University of Colorado, Boulder, CO.
81) **May, 2022**. "Organic Materials in the NIR and SWIR Regions for Imaging and Electrical Signaling" Air Force Research Labs, Wright Patterson Air Force Base, OH.
80) **April, 2022**. "Organic Dyes for Solar-to-Electric Conversion and in vivo Fluorescence Imaging: From Strong Photooxidants to Shortwave Emitters" Wake Forest University, Winston-Salem, NC.
79) **November, 2021**. "Undergraduate Led Projects in Photonic Materials Research" Student Members of the American Chemical Society Meeting, Oxford, MS.
78) **November, 2021**. "Visible Light Driven Photocatalytic Reduction of CO_2 and Protons with Molecular Catalysts" Michigan State University, East Lansing, MI (virtual).
77) **November, 2021**. "Visible Light Driven Photocatalytic Reduction of CO_2 and Protons with Molecular Catalysts" University of Alabama, Tuscaloosa, AL.
76) **November, 2021**. "Dye-Sensitized Solar Cells in Unbiased Water and CO_2 Electrolysis Systems" Southeastern Regional Meeting of the American Chemical Society, Birmingham, AL.
75) **October, 2021**. "Shortwave Infrared and Ultrabright Near Infrared Fluorescent Organic Dyes" Iowa State University, Ames, IA (virtual).
74) **August, 2021**. "Organic Donor-Acceptor Dyes with Proaromatic Functionality for Use in High-Voltage and Near-Infrared Dye-Sensitized Solar Cells" American Chemical Society National Meeting, Atlanta, GA (virtual).

73) **August, 2021**. "CEMOs RFA 3. Emergent Materials for Hybrid Organic/Inorganic Interfaces" CEMOs NSF Reverse Site Visit, Oxford, MS (virtual).
72) **August, 2021**. "SWIR Dyes for Fluorescence Imaging" CEMOs RFA4 Meeting, Oxford, MS.
71) **June, 2021**. "Controlling Interfacial Charge Separation Energetics and Kinetics" Solar Photochem. PIs Meeting, Washington D.C. (virtual).
70) **June, 2021**. "Photon Management in NIR and SSM Dye-Sensitized Solar Cells for Non-Biased CO_2 Reduction Coupled with Water Splitting" Physical Chemistry REU Program, Oxford, MS.
69) **May 2021**. "CEMOs RFA 3. Emergent Materials for Hybrid Organic/Inorganic Interfaces" CEMOs Annual Meeting, Oxford, MS (virtual).
68) **March, 2021**. "An Introduction to DSC Progress and Current Research Trends" nanoGe, symposium co-chair, Europe (virtual).
67) **October, 2020**. "Proaromatic and Multiple Donor Dyes for Photoinduced Interfacial Charge Separation Using Near Infrared Photons" PhotochemCV19 Symposium, Miami, FL (virtual).
66) **September, 2020**. "Near Infrared Emitting Organic Molecules for Biological Imaging" Eastern Kentucky University, Richmond, KY (virtual).
65) **November, 2019**. "Small Molecule NIR Dye Design and Understanding Made Possible with Computational Chemistry" Conference on Current Trends in Computational Chemistry, Jackson, MS.
64) **October, 2019**. "Visible Light Driven Photocatalytic Reduction of CO2 and CO and CH4 with Molecular Catalysts" SERMACS, Savannah, GA.
63) **June, 2019.** "Aryl Ether Weak Donor-Based Dyes as Strong Photoinduced Oxidants" DOE Meeting, Washington, D.C.
62) **June, 2019.** "Photon Management in NIR and SSM Dye-Sensitized Solar Cells" Physical Chemistry REU Program, Oxford, MS.
61) **March, 2019.** "Design of Strongly Oxidizing Organic Photosensitizers for use in High-Voltage Solar Cell Devices" ACS Meeting, Orlando, FL.
60) **March, 2019.** "Photon Management in NIR and SSM Dye-Sensitized Solar Cells and Optical Phosphate Sensors" Jackson State University, Jackson, MS.
59) **November, 2018.** "Visible Light Driven Photocatalytic Reduction of CO2 and Protons with Molecular Catalysts" SWRM ACS, Little Rock, AR.
58) **November, 2018.** "Series-Sequential Multijunction Dye-Sensitized Solar Cells (SSM-DSC): A Solar-Powered System for the Prolonged Electrolysis of Water and CO_2" SERMACS, Augusta, GA.
57) **November, 2018.** "Photon Management in NIR and SSM Dye-Sensitized Solar Cells for Non-Biased CO_2 Reduction Coupled with Water Splitting" University of Illinois Urbana-Champaign, Urbana-Champaign, IL.
56) **October, 2018.** "Organic Optoelectronic Device and Material Design Principles" Jackson State University, Jackson, MS.
55) **June, 2018.** "Introduction to Light Harvesting and Solar Cells" Physical Chemistry REU Program, Oxford, MS.
54) **April, 2018.** "Introduction to Light Harvesting and Solar Cells" Rhodes College, Jackson, MS.
53) **April, 2018.** "DSC Construction and Redox Shuttle Properties" Biomolecular Sciences Seminar, Oxford, MS.
52) **March, 2018.** "Photocatalytic Reduction of CO_2 to CO with Re-NHC Complexes" ACS Meeting, New Orleans, LA.
51) **March, 2018.** "Energy Dependence, Sources and Important Technologies: A Look into America's Future" Science Café, Starkville, MS.
50) **March, 2018.** "Photon Management in Series-Sequential Multijunction Dye-Sensitized Solar Cells (SSM-DSC): Solar Powered CO_2 Reduction Coupled with Water Oxidation" ACS Meeting, New Orleans, LA.
49) **February, 2018.** "Photon-Management in NIR and SSM Dye-Sensitized Solar Cells" Auburn University, Auburn, AL.
48) **February, 2018.** "Photon-Management in NIR and SSM Dye-Sensitized Solar Cells" Washington University at St. Louis, St. Louis, MO.
47) **February, 2018.** "Photon-Management in NIR and SSM Dye-Sensitized Solar Cells" St. Louis University, St. Louis, MO.

46) **February, 2018.** “Photon-Management in NIR and SSM Dye-Sensitized Solar Cells” Mississippi State University, Starkville, MS.
45) **January, 2018.** "Introduction to Light Harvesting and Solar Cells" Chemical Engineering Seminar, Oxford, MS.
44) **December, 2017.** “Series-Sequential Multijunction Dye-Sensitized Solar Cells (SSM-DSC): High Voltages from Photon-Management Strategies” Energy, Materials and Nanotechnology, Orlando, FL.
43) **November, 2017.** “Incorporating High School Students and Summer Undergraduate Visitors in Research” Water Sensors Meeting, Tuscaloosa, AL.
42) **November, 2017.** “Molecular Photocatalyst and Photovoltaic-Electrochemical System Designs for Reduction of CO_2 and H^+” Solar Energy Research Center Conference, Charlotte, NC.
41) **November, 2017.** “NIR Organic Dyes: Controlling Emissive Properties” Southeastern Regional Meeting of the ACS, Charlotte, NC.
40) **October, 2017.** “Graphene in Dye-Sensitized Solar Cells” University of Mississippi, Oxford, MS.
39) **September, 2017.** “Photon-Management in NIR and SSM Dye-Sensitized Solar Cells” University of Kentucky, Lexington, KY.
38) **September, 2017.** “Photon-Management in NIR and SSM Dye-Sensitized Solar Cells” Mississippi State University, Starkville, MS.
37) **September, 2017.** “Photon-Management in NIR and SSM Dye-Sensitized Solar Cells” Louisiana State University, Baton Rouge, LA.
36) **September, 2017.** "Introduction to Light Harvesting and Solar Cells" Millsaps College, Jackson, MS.
36) **July, 2017.** “Dye-Sensitized Solar Cells: What We Know and What We Need” Southern School on Computational Chemistry and Materials Science Conference (SSCCMS), Jackson, MS.
35) **June, 2017.** "Introduction to Light Harvesting and Solar Cells" Physical Chemistry REU Program, Oxford, MS.
34) **June, 2017.** "Desirable Material Properties for DSCs and How to Fabricate a DSC Device" Feeding and Powering the World, Oxford, MS.
33) **April, 2017.** "Photons to Fuels: Organometallic Photocatalysts and High Voltage DSC Devices" Tulane University, New Orleans, LA.
32)**October, 2016.** “Near Infrared Organic Dyes for Dye-Sensitized Solar Cells”
Advanced Materials for Transformative Changes to Defense, Aerospace, and Civic Environments Conference, University of Mississippi, Oxford, MS.
31)**August, 2016.** "Photonic Energy Use in Organic and Organometallic Materials"
Chemical Engineering Seminar Series, University of Mississippi, Oxford, MS.
30)**August, 2016.** "Energy Dependence, Sources and Important Technologies: A Look into America’s Future"
University of South Alabama, AL.
29)**July, 2016.** “Unexpected Applications and New Directions for Dye-Sensitized Solar Cells”
Feeding and Powering the World Conference, University of Mississippi, Oxford, MS.
28)**May, 2016.** "Energy Dependence, Sources and Important Technologies: An Introduction to Light Harvesting and Solar Cells" Physical Chemistry REU Program, Oxford, MS.
27)**March, 2016.** “Concise, Proaromatic NIR Organic Dyes for DSCs”
Materials Research Society, Phoenix, AZ.
26)**February, 2016.** "Energy Dependence, Sources and Important Technologies: A Look into America’s Future"
Science Café, Oxford, MS.
25)**February, 2016.** “Solar Energy: A Smart Investment?”
UM Energy Committee Meeting, Oxford, MS.
24)**November, 2015.** "Energy Dependence, Sources and Important Technologies: An Introduction to Light Harvesting and Solar Cells" Belhaven University, Jackson, MS.
23)**November, 2015.** "Energy Dependence, Sources and Important Technologies: An Introduction to Light Harvesting and Solar Cells" Mississippi College, Clinton, MS.
22)**September, 2015.** "Photonic Energy Use in Organic and Organometallic Materials"
University of South Carolina, Columbia, SC.

21)**September, 2015.** "Energy Dependence, Sources and Important Technologies: An Introduction to Light Harvesting and Solar Cells" College of Charleston, Charleston, SC.
20)**September, 2015.** "Energy Dependence, Sources and Important Technologies: A Look Into America's Future." Oxford Science Cafe, Oxford, MS.
19) **September, 2015**. "Photonic Energy Use in Organic and Organometallic Materials" University of Alabama, Tuscaloosa, AL.
18) **April, 2015**. "Photonic Energy Use in Organic and Organometallic Materials" University of Mississippi, Oxford, MS.
17) **October, 2014**. "Small Molecule Organic Dye Synthesis and Design for Dye Sensitized Solar Cells" University of Southern Mississippi, Hattiesburg, MS.
16) **October, 2014**. "Small Molecule Organic Dye Synthesis and Design for Dye Sensitized Solar Cells" Southeast Regional Meeting of the American Chemical Society (SERMACS) Nashville, TN.
15) **October, 2014**. "Energy Dependence, Sources and Important Technologies: An Introduction to Light Harvesting and Solar Cells" Sewanee: The University of the South, Sewanee, TN.
14) **September, 2014**. "Energy Dependence, Sources and Important Technologies: An Introduction to Light Harvesting and Solar Cells" Union University, Jackson, TN.
13) **July, 2014**. "Energy Dependence, Sources and Important Technologies: An Introduction to Light Harvesting and Solar Cells" OleMiss Physical Chemistry REU, University of Mississippi, Oxford, MS.
12) **November, 2013.** "Small Molecule Organic Dye Synthesis and Design for Dye Sensitized Solar Cells" Southeast Regional Meeting of the American Chemical Society (SERMACS) Atlanta, GA.
11) **November, 2013.** "Small Molecule Organic Dye Synthesis and Design for Dye Sensitized Solar Cells" Southwest Regional Meeting of the American Chemical Society (SWRM) Waco, TX.
10) **September, 2013.** "Transition Metal Methodology Development and Application in Organic Synthesis" College of Pharmacy, University of Mississippi, Oxford, MS.

Post-Doctoral Presentations (3):
9) **June, 2012.** "A Donor Chromophore for Sensitizers in DSC Devices" Georgia Institute of Technology, Atlanta, GA
8) **October, 2011.** "High Molar Extinction Coefficient Metal-Free Sensitizers" 2nd Molesol Meeting, Solar Print, Dublin, Ireland
7) **March, 2011.** "New Acceptors for D-π-A Dyes" 1st Molesol Meeting, Swiss Federal Institute of Technology, Lausanne, Switzerland

Graduate Student Presentations (5):
6) **January, 2010.** "Oxidative Heck Reactions with Non-Resonance Activated Substrates: Broadening the Scope of a 40 Year Old Method" Swiss Federal Institute of Technology, Lausanne, Switzerland
5) **October, 2008.** "Oxidative Heck Reactions with Non-activated Olefins" University of Kentucky, Lexington, KY.
4) **March, 2007.** "Acidic, Oxidative Cross-Coupling: Hydrocarbons, Carboxylic Acids, and Organoboronic Acids Toward Complex Molecules" 233rd National ACS Meeting, Chicago, IL.
3) **August, 2007.** "Oxidative Heck Reactions with Nontraditional Olefins and Boronic Acids" Aldrich Graduate Innovation Award Meeting, Milwaukee, WI.
2) **August, 2007.** "Oxidative Heck Reactions with Nontraditional Olefins and Boronic Acids" University of Illinois at Urbana-Champaign, Urbana, IL.

Undergraduate Presentation (1):
1) **August, 2004.** "Degradation of $[Ru(bpy)_3](PF_6)_2$ Electroluminescent Devices" Cornell REU Symposium, Ithaca, NY.

POSTERS

June, 2009. "Reactions of Non-Resonance Activated Substrates with a General Palladium (II) Catalyst:

Expanding the Scope of the Heck Reaction" National Organic Symposium, Denver, CO.

July, 2007. "Oxidative Heck Reactions with Nontraditional Olefins and Boronic Acids" Organometallic Gordon Research Conference, Newport, RI.

November, 2007. "Acidic Oxidative Cross-Coupling: Hydrocarbons, Carboxylic Acids, and Organoboronic Acids Toward Complex Molecules" Organic Area Allerton Conference, University of Illinois at Urbana-Champaign, Urbana, IL.

July, 2004. "New Emitters for Organic Light Emitting Diodes" Functional pi-Electron Systems Conference, Ithaca, NY 2004.

April, 2004. "New Emitters for Organic Light Emitting Diodes" University of Kentucky Regional Poster Session, Lexington, KY, 2004.

TEACHING EXPERIENCE

January 2022-May 2022, Course Instructor, Optoelectronic Materials, U. Mississippi, Oxford, MS.

- Instructed 7 students and received excellent reviews (CHEM 725).

August 2021-December 2022, Course Instructor, Advanced Organic Chemistry, U. Mississippi, Oxford, MS.

- Instructing 21 students currently (CHEM 528).

August 2021-December 2021, Course Instructor, Current Literature of Optoelectronic Materials, U. Mississippi, Oxford, MS.

- Instructing 15 students currently (CHEM 705).

January 2021-May 2021, Course Instructor, Elementary Organic Chemistry II, U. Mississippi, Oxford, MS.

- Instructed 20 students and received substantially above university average evaluation marks (CHEM 222).

August 2020-December 2020, Sabbatical.

January 2020-May 2020, Course Instructor, Advanced Organic Chemistry, U. Mississippi, Oxford, MS.

- Instructed 20 students and received substantially above university average evaluation marks (CHEM 528).

January 2020-May 2020, Course Instructor, Research Challenges in Chemistry, U. Mississippi, Oxford, MS. **NEW COURSE DEVELOPED** (no comparative evaluations)

- Instructed 18 students with exceptional reviews (CHEM 293).

August 2019-December 2019, Course Instructor, Optoelectronic Materials, U. Mississippi, Oxford, MS. **NEW COURSE DEVELOPED** (no comparative evaluations)

- Instructed 10 students and received excellent reviews (CHEM 725).

January 2019-May 2019, Course Instructor, Research Challenges in Chemistry, U. Mississippi, Oxford, MS.

- Instructed 45 students and received substantially above university average evaluation marks (CHEM 293).

January 2019-May 2019, Course Instructor, Elementary Organic Chemistry II, U. Mississippi, Oxford, MS.

- Instructed 200 students and received substantially above university average evaluation marks (CHEM 222).

August 2018-December 2018, Course Instructor, Elementary Organic Chemistry I, U. Mississippi, Oxford, MS.

- Instructed 150 students and received substantially above university average evaluation marks (CHEM 221).

January 2018-May 2018, Course Instructor, Research Challenges in Chemistry, U. Mississippi, Oxford, MS. **NEW COURSE DEVELOPED** (no comparative evaluations)

- Instructed 120 students with exceptional reviews (CHEM 293).

August 2017-December 2017, Course Instructor, Elementary Organic Chemistry I, U. Mississippi, Oxford, MS.

- Instructed 150 students and received substantially above university average evaluation marks (CHEM 221).

January 2017-May 2017, Course Instructor, Physical Organic Chemistry, U. Mississippi, Oxford, MS.

- Instructed 10-20 students and received substantially above university average evaluation marks (CHEM 527).

January 2017-May 2017, Course Instructor, Organic Electronic Materials, U. Mississippi, Oxford, MS.
NEW COURSE DEVELOPED (no comparative evaluations)

- Instructed 9 students and received substantially above university average evaluation marks (CHEM 725).

August 2016-December 2016, Course Instructor, Advanced Organic Chemistry, U. Mississippi, Oxford, MS.

- Instructed 10-20 students and received substantially above university average evaluation marks (CHEM 528).

January 2016-May 2016, Course Instructor, Physical Organic Chemistry, U. Mississippi, Oxford, MS.

- Instructed 10-20 students and received substantially above university average evaluation marks (CHEM 527).

January 2014-May 2014, Course Instructor, Honors College Conversations II, U. Mississippi, Oxford, MS.

- Lead 4 students in energy related discussions (HON 401).

August 2015-December 2015, Course Instructor, Advanced Organic Chemistry, U. Mississippi, Oxford, MS.

- Instructed 20 students and received substantially above university average evaluation marks (CHEM 528).

January 2015-May 2015, Course Instructor, Elementary Organic Chemistry II, U. Mississippi, Oxford, MS.

- Instructed 150 students and received substantially above university average evaluation marks (CHEM 222).

August 2014-December 2014, Course Instructor, Elementary Organic Chemistry I, U. Mississippi, Oxford, MS.

- Instructed 200 students and received substantially above university average evaluation marks (CHEM 221).

January 2014-May 2014, Course Instructor, Physical Organic Chemistry, U. Mississippi, Oxford, MS.

- Instructed 10 students and received substantially above university average evaluation marks (CHEM 527).

August 2013-December 2013, Course Instructor, Advanced Organic Chemistry, U. Mississippi, Oxford, MS.

- Instructed 12 students and received substantially above university average evaluation marks (CHEM 528).

August 2006-May 2007, Teaching Assistant, Organic Chemistry Lab I, University of Illinois at Urbana-Champaign, Urbana, IL, Prof. Roxanne Wilson

- Instructed proper lab techniques to 20+ students.
- Graded student exams and lab reports.

October 2007, Guest Lecture: Organometallics, University of Illinois at Urbana-Champaign, Urbana, IL, Prof. M. Christina White "Suzuki Reaction: Development and Applications".

January 2006-May 2006, Teaching Assistant, Organic Chemistry II (majors), University of Illinois at Urbana-Champaign, Urbana, IL, Prof. Dave Gin

- Lead weekly recitation sections for 20+ students.
- Graded student exams and problem sets.

Guest Lecture: "Dicarbonyls and Acyl Anion Equivalents"

August 2005-Decemeber 2005, Teaching Assistant, Organic Chemistry I (majors), University of Illinois at Urbana-Champaign, Urbana, IL, Prof. Dave Gin

- Lead weekly recitation sessions for 20+ students.
- Graded student exams and problem sets.

Guest Lecture: "Reactions of Alkenes"

August 2005-May 2005, Teaching Assistant, Organic Chemistry Lab, University of Kentucky, Lexington, KY, Prof. M. A. Patwardhan

- Instructed proper lab techniques for 20+ students.
- Graded student exams and lab reports.

August 2004-May 2005, Teaching Assistant, Organic Chemistry Recitation, University of Kentucky, Lexington, KY, Prof. J. W. Wilson

- Instructed recitation sections for 10+ students weekly.

- Awarded Pass/Fail grades based on student performance.

January 2003-May 2003, Teaching Assistant, General Chemistry II Recitation, University of Kentucky, Lexington, KY, Prof. J. W. Wilson

- Instructed recitation sections for 10+ students weekly.
- Awarded Pass/Fail grades based on student performance.

August 2002-Decemeber 2002 & August 2003-December 2003, Teaching Assistant, General Chemistry I Recitation, University of Kentucky, Lexington, KY, Prof. J. W. Wilson

- Instructed recitation sections for 10+ students weekly.
- Awarded Pass/Fail grades based on student performance.

COLLABORATORS

Amal Dass, University of Mississippi
Nathan Hammer, University of Mississippi
Gregory Tschumper, University of Mississippi
Davita Watkins, University of Mississippi
Jonah Jurss, University of Mississippi
Sarah Morgan, University of Southern Mississippi
Keith Hollis, Mississippi State University
Charles Webster, Mississippi State University
Collene Scott, Mississippi State University
Glake Hill, Jackson State University
Neeraj Rai, Mississippi State University
Eden Tanner, University of Mississippi
Qilin Dai, Jackson State University
Yongfeng Zhao, Jackson State University
Steven Nolan, Ghent University (Belgium)
Michael Grätzel, Swiss Federal Institute of Technology
Md. K. Nazeeruddin, Swiss Fed. Institute of Tech.
Shanlin Pan, University of Alabama
Elizabeth Papish, University of Alabama
Russell Schmehl, Tulane University
Saumen Chakraborty, University of Mississippi
Jason Azoulay, University of Southern Mississippi
Marco Bonizzoni, University of Alabama
Steven Gwaltney, Mississippi State University
Chad Risko, University of Kentucky
Jersey Leszczynski, Jackson State University
Tom Hamann, Michigan State University
Alex Flynt, University of Southern Mississippi
Ryan Fortenberry, University of Mississippi
Jorge Gonzalez-Garcia, University of Valencia (Spain)

SYNERGISTIC ACTIVITIES

1. Coulter NMR Systems Liaison and Related Repairs (2013-2021)
2. NSF Reviewer/Panel Participant (2014-present)
3. PRF Review Contributor (2015-2019)
4. DOE Reviewer/Panel Participant (2018-2022)
5. Ole Miss Energy Summer Research Program for undergraduates (2014-2022)
6. Artificial Sunlight Conversion Laboratory High School Program (2014-2020)
7. Local ACS Ole Miss Section Chair Elect: 2015
8. Local ACS Ole Miss Section Chair: 2016
9. Cottrell Scholar Collaborative New Faculty Workshop: Selected Attendee 2013
10. Chair Graduate Student Recruiting Committee (2013-2022)
11. Graduate Student Support Committee (2017-2022)
12. Tenure and Promotion Guideline Committee (2017-2022)
13. Undergraduate Degree Advisor (2013-2017)
14. Journal Referee For: *Journal of the American Chemical Society, Advanced Energy Materials, Langmuir, Molecules, Inorganic Chemistry, European Journal of Organic Chemistry, ChemSusChem, Dalton Transactions, Journal of Physical Chemistry, Nature Chemistry, Dyes and Pigments, Angewandte Chemie International Edition, ACS Catalysis, New Journal of Chemistry, Journal of Materials Chemistry C, Chemical Communications, Journal of the Electrochemical Society, Chemistry – A European Journal, Inorganic Chemica Acta, Asian Journal of Organic Chemistry, Energy & Environmental Science, Journal of Luminescence, Catalysis Today, Journal of Photochemistry, ACS Applied Materials and Interfaces, Organic Letters, Chemistry of Materials, Solar Energy, Nanoscale, ChemPlusChem, Chemical Physics*

Letters, Inorganics, ACS Applied Energy Materials, Chemical Science, Journal of the American Ceramic Society

15. Served on 14 job search committees for The University of Mississippi (2014-2022)
16. Graduate Student Admission Committee (2018-2022)
17. Instrumentation Committee (2018-2022)

RESEARCH COMMITTEE MEMBER (year finished) *Ph.D. Awarded, ^Masters Awarded

1. Louis McNamara (2015)*	2. Colman Howard (2015)*	3. Praneeth Nimmala (2014)*
4. Hunter Dulaney (2016)^	5. Eric Dornshuld (2014)*	6. Briana Sims (2020)*
7. Sayontani Roy (2020)*	8. Kallol Talukdar (2020)*	9. Indika Chandrasirir
10. Munia Sowaileh (2018)*	11. Jon Dal Williams (2019)*	12. John Fortner (2017)
13. Michael Cunningham (2018)*	14. Milan Rambukwella (2018)*	15. Tanya Jones (2018)*
16. Weiwei Yang (2019)^	17. Lizhu Chen (2019)^	18. Kayla Milano (2018)^
19. Thomas Ellington (2018)*	20. Joseph Lee (2019)^	21. Naga Arjun Sakthivel (2020)*
22. Chance Boudreaux (UA)*	23. Trey Vaughn (2018)*	24. Sanjit Das (UA)
25. Phillip Laney (BMS)	26. Reem Alkhodier (BMS)	27. Dilan Karunathilaka
28. Taylor Santaloci	29. Sha Tamanna Sahil	30. Chathuranga Rathnamalala (MSU)
31. Amna Adam (BMS)*	32. Zane Turner	33. Leigh Anna Hunt
34. Austin Dorris	35. Divyansh Prakash	

HONORS THESIS COMMITTEE MEMBER (year, non-Delcamp Group members)

1. Jessica Barnett (2017)	2. Sweta Adhikari (2017)	3. Manpreet Singh (2016)
4. Wyatt Whicker (2015)	5. Benjamin Stratton (2019)	6. Jay Vaughn (2019)
7. Matthew Saucier (2020)	8. Andrew Groneck (2020)	9. Skylar Crane (2020)