

## CHAD MICHAEL RISKO

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### EDUCATIONAL BACKGROUND:

PhD	Georgia Institute of Technology	Theoretical/Physical Chemistry	2005
	<i>Thesis Title: Theoretical Evaluations of Electron-Transfer Processes in Organic Semiconductors</i>		
BS	Baker University (Kansas)	Chemistry; Environmental	1998
		Technology and Management	
	<i>Magna Cum Laude</i>		

### EMPLOYMENT HISTORY:

Associate Editor	Chemistry of Materials (ACS Journals)	2021 – present
Faculty Director, Office of Undergraduate Research	University of Kentucky	2021 – present
Associate Professor of Chemistry	University of Kentucky	2020 – present
Assistant Professor of Chemistry	University of Kentucky	2014 – 2020
Senior Research Scientist	Georgia Institute of Technology	2011 – 2014
Research Scientist II	Georgia Institute of Technology	2009 – 2011
Scientific Officer & Industrial Liaison	Northwestern University, International Institute for Nanotechnology <i>IIN Director: Chad A. Mirkin</i>	2008 – 2009
Postdoctoral Fellow	Northwestern University <i>Advisors: Mark A. Ratner and Tobin J. Marks</i>	2005 – 2008
Visiting Graduate Researcher	Université de Mons (Belgium) <i>Funded by the Fonds National de la Recherche Scientifique (Belgium)</i> <i>Advisor: Jérôme Cornil</i>	2004 May-July
Graduate Research Assistant	Georgia Institute of Technology and University of Arizona <i>Advisor: Jean-Luc Brédas</i>	2000 – 2005
Polymer Additives Chemist	PATCO Additives, American Ingredients Co. (Kansas City, MO)	1998 – 2000

## **HONORS, AWARDS, & GRANTS:**

### **Honors & Awards**

#### ***Honors & Awards from Independent Career***

- 2022 University of Kentucky Ken Freedman Outstanding Advisor Award, Nominee
- 2021 University of Kentucky Alumni Association Great Teacher Award
- 2020 University of Kentucky Center for Appalachian Research in Environmental Sciences (UK CARES) Faculty Fellow in Science Communication
- 2019 University of Kentucky College of Arts & Sciences Award for Outstanding Undergraduate Research Mentoring
- 2019 Reviewer Award – Chemistry of Materials (The Top Reviewer; American Chemical Society)
- 2018-2019 Scialog Fellow for Advanced Energy Storage (Research Corporation for Science Advancement, RCSA)
- 2018 Office of Naval Research Young Investigator Program (ONR YIP) Award
- 2018 Cottrell Scholar (Research Corporation for Science Advancement, RCSA)
- Visiting Professor, University of Angers (Angers, France), June 17-23, 2018
- 2018 Reviewer Award – Chemistry of Materials (Top 1%; American Chemical Society)
- 2018 Top Review – *Journal of Chemical Physics* (American Institute Physics)
- 2017 Top Reviewer – *Journal of Chemical Physics* (American Institute of Physics)
- 2017 University of Kentucky Ken Freedman Outstanding Advisor Award, Nominee
- 2016 Reviewer Award, *Chemistry of Materials* (Top 1%; American Chemical Society)
- 2016 Emerging Investigator, *Journal of Materials Chemistry* (Royal Society of Chemistry)

#### ***Honors & Awards Prior to Independent Career***

- 2011 Best Poster, ICMR Summer Program on Emerging Materials for Thin Film Solar Cells
- 2001 Outstanding Teaching Assistant, The University of Arizona, Department of Chemistry
- 1998 Graduation with Honors, *Magna Cum Laude*, Baker University
- 1998 University of Kansas Section of the ACS Outstanding Senior Chemistry Student, Baker University
- 1997 Barry M. Goldwater Scholarship Nominee, Baker University
- 1996, 1997 E. J. Cragoe Scholarship Recipient, Chemistry Department Award, Baker University
- 1995, 1996, 1997 National Collegiate Natural Sciences Award, Baker University
- 1995 CRC Freshmen Chemistry Achievement Award, Baker University
- 1995 Phi Eta Sigma National Honors Society, Baker University

#### **Grants Funded** (total funding amounts listed)

17. Thermomechanical Stability of Organic Semiconductors. PI. Office of Naval Research. 04/01/2022 – 12/31/2023. \$284,988.

16. Beckman Scholars Program – Scholars United by Chemistry: Cultivating Excellence through Science Stewardship (SUCCESS). PI. Arnold and Mabel Beckman Foundation. 01/17/2022 – 10/15/2022. \$156,000.
15. Scanning Electron Microscope and Ion Beam Milling System for Nanoscale Analysis of Next-Generation Thermionic Cathodes and Novel Nanostructured Materials. co-PI (PI: Thomas J. Balk; co-PI: John Craddock). Office of Naval Research. 08/17/2021 – 08/16/2022. \$76,277.
14. EPSCoR: RII Track-2 FEC: Data-enabled Discovery and Design to Transform Liquid-based Energy Storage. PI. National Science Foundation (Cooperative Agreement 2019574). 10/01/2020 – 09/30/2024. \$3,979,525.
13. DMREF: Collaborative Research: Achieving Multicomponent Active Materials through Synergistic Combinatorial, Informatics-enabled Materials Discovery. PI. National Science Foundation (1922174). 10/01/2019 – 09/30/2023. \$295,990.
12. Disentangling Relationships among Dopant Structure, Dopant and Polymer Energetics, Thin-Film Morphology, and the Electrical Properties of Doped Conducting Polymer Films. Co-PI (PI: Kenneth Graham). National Science Foundation (1905734). 08/15/2019 – 08/14/2022. \$452,189.
11. EPSCoR: RII Track 1: Kentucky Advanced Manufacturing Partnership for Enhanced Robotics and Structures (KAMPERS). Senior Personnel (PI: Rodney Andrews; co-PI: John Anthony, Czarena Crofcheck, Seth DeBolt, Dan Popa). National Science Foundation (1849213). 07/01/19 – 06/30/24. \$20,000,000 (funding received for graduate student research assistant).
10. An DMREF-NIST Collaboration to Design and Build the OSCAR Data Curation Platform (Supplement to DMR 1627428). Co-PI (PI: John Anthony). National Science Foundation; 10/01/2018 – 09/30/2019; \$100,000.
9. Decoding Nucleation and Growth in Organic Semiconductor Films. PI. Office of Naval Research (ONR) Young Investigator Program (N00014-18-1-2448); 06/01/2018 – 05/30/2021; \$510,000.
8. High Energy Density Metal Oxides for Energy Storage: *in silico* Electrochemistry to Control Interface Chemistry. PI. Research Corporation for Science Advancement (RCSA) Cottrell Scholar Award (24432); 07/01/2018 – 06/30/2021; \$100,000.
7. 2018 University of Kentucky Vice President for Research Minor Research Grant. PI. \$50,000.
6. DMREF Collaborative Research: Organic Semiconductors by Computationally Accelerated Refinement (OSCAR). Co-PI (PI: John Anthony). National Science Foundation (DMR 1627428); 10/15/2016 – 10/14/2019; \$539,422.
5. Collaborative Research: Solution Processing of Organic Semiconductors: A Coupled Atomistic-Continuum Framework. PI. National Science Foundation (CMMI 1563412); 08/15/2016 – 07/31/2019; \$208,597.
4. Directing the Thin-Film Morphologies of Organic Semiconductors by Design. PI. Office of Naval Research (N00014-16-1-2985); 08/16/2016 – 08/15/2018; \$200,000.
3. A Computational, Shape-Based Approach to Crystal Engineering. PI. University of Kentucky Center for Applied Energy (CAER). 07/15/2015 – 12/31/2015; \$15,000.
2. Density Functional Theory Investigations of the Stability and Reactivity of Organic Compounds in Energy Storage Applications. Co-PI (co-PI: Susan Odom). University of Kentucky College of Arts & Sciences Diversity Enhancement Grant. 12/17/2014; \$2,000.
1. Functionalization Approaches to High-Mobility Organic Semiconductors. Collaborator (PI: John Anthony). Merck & Company, Incorporated; 11/16/2014 – 11/15/2015; \$153,380.

## Computational & User Facility Grants Funded

15. Tools to Enhance the Simulation of Polymer Semiconductors. Center for Integrated Nanotechnologies (CINT), Department of Energy Office of Science Nanoscale Science Research Center (NSRC). Award No. 2022AU0048. PI. User Access. 07/01/2022 – 12/31/2023.
14. FY 2022 Department of Defense High Performance Computing Modernization Program (HPCMP). 720,000 CPU Hours. PI.
13. High-Throughput Computational Data for a Curated Database of Organic Electronic Materials. National Science Foundation Extreme Science and Engineering Discovery Environment (XSEDE) Resource Allocation Provisional Award. 67,000 Node Hours. PI. 07/01/2021 – 06/30/2022.
12. High-Throughput Computational Data for a Curated Database of Organic Electronic Materials. National Science Foundation Extreme Science and Engineering Discovery Environment (XSEDE) Resource Allocation Provisional Award. 23,900 Node Hours. PI. 01/01/2021 – 06/30/2021.
11. FY 2021 Department of Defense High Performance Computing Modernization Program (HPCMP). 2,035,000 CPU Hours. PI.
10. Extending Neural Network-based Potentials to  $\pi$ -Conjugated Polymers. Center for Integrated Nanotechnologies (CINT), Department of Energy Office of Science Nanoscale Science Research Center (NSRC). PI. User Access. 07/01/2020 – 12/31/2021.
9. FY 2020 Department of Defense High Performance Computing Modernization Program (HPCMP). 2,200,000 CPU Hours. PI.
8. Thermodynamic Drivers and Kinetic Control for Stable and Optimized Self-Assembled  $\pi$ -Conjugated Microstructures. Center for Integrated Nanotechnologies (CINT), Department of Energy Office of Science Nanoscale Science Research Center (NSRC). PI. User Access. 01/26/2019 – 06/30/2020.
7. FY2019 Naval High Performance Computing Pathfinder Competition; Department of Defense, Office of the Navy. 750,000 CPU Hours. PI.
6. FY2019 Department of Defense High Performance Computing Modernization Program (HPCMP). 6,150,000 CPU Hours. PI.
5. FY2018 Naval High Performance Computing Pathfinder Competition; Department of Defense, Office of the Navy. 1,000,000 CPU Hours. PI.
4. FY2018 Access Grant to Hokule'a System at the Maui High Performance Computing Center (MHPCC). Department of Defense. PI.
3. FY 2018 Department of Defense High Performance Computing Modernization Program (HPCMP). 9,220,000 CPU Hours. PI.
2. FY 2017 Department of Defense High Performance Computing Modernization Program (HPCMP). 2,830,000 CPU Hours. PI.
1. Computational Design of Interfaces for Photovoltaics. Department of Energy Advanced Scientific Computing Research Leadership Computing Challenge (ALCC). Co-PI. February 3, 2015. Computing Time: 1,500,000 MPP units on Edison, 130,000,000 CPU hours on Mira.

## **RESEARCH AND CREATIVE SCHOLARSHIP:**

Academic Career: 160 Peer-Reviewed Publications; 2 Digital Research Products; 5 Book Chapters; 1 Invited Article Perspective; 74 Invited Presentations. ISI h-index = 49; 7,100+ citations without self-citation. Google Scholar h-index = 53, i-10 index = 123.

Independent Career: 71 Peer-Reviewed Publications, and 4 Collaborative Publications with Former Mentors (not included in h-index determination); 2 Digital Research Products; 2 Book Chapters; 54 Invited Presentations. ISI h-index = 20; 1,280+ citations without self-citation (as of August 1, 2022).

Risko and Risko laboratory members are highlighted in **bold**; *italics* denotes postdoctoral researcher or visiting scientist; **underline** denotes graduate researcher; ***italics+underline*** denotes undergraduate researcher; \* denotes corresponding author. The numbering provided here for the digital research products and classified independent career publications is used for the citations in the research statement.

### **Digital Research Products**

- D1. Organic Crystals in Electronic and Light-Oriented Technologies (OCELOT) Database. Website: <https://oscar.as.uky.edu/ocelot/>
- D2. Data-enabled Discovery and Design to Transform Liquid-based Energy Storage (D<sup>3</sup>TaLES) Database. Website: <https://d3tales.as.uky.edu/>

### **Published Journal Articles**

#### ***Publications from Independent Career (71 total)***

24 undergraduate student co-authorships; 39 graduate student co-authorships; 30 postdoctoral researcher co-authorships; 1 visiting scientist co-authorship.

71. The Role of Crystal Packing on the Optical Response of Trialkyltetraethynyl Acenes. ***L.Y. Huang, Q. Ai*** & C. Risko. *Journal of Chemical Physics* (2022), online. DOI: 10.1063/5.0097421
70. PARyOpt: A Software for Parallel Asynchronous Remote Bayesian Optimization. Algorithm 1025. B.S.S. Pokuri, A. Lofquist, **C. Risko** & B. Ganapathysubramanian. *ACM Transactions on Mathematical Software* (2022), 48, 24. DOI: 10.1145/3529517
69. Challenges in Information-Mining the Materials Literature: A Case Study and Perspective. ***A. Smith, V. Bhat, Q. Ai*** & **C. Risko\***. *Chemistry of Materials* (2022), online. DOI: 10.1021/acs.chemmater.2c00445
68. Computationally Characterizing Charge Transport Resiliency in Molecular Solids. B.S.S. Pokuri, S.M. Ryno, R. Noruzi, **C. Risko\*** & B. Ganapathysubramanian. *Molecular Systems Design & Engineering* (2022), online. DOI: 10.1039/D1ME00163A
67. Unveiling the Structural, Electronic, and Optical Effects of Carbon-doping on Multi-layer Anatase TiO<sub>2</sub> (101) and the Impact on Photocatalysis. N. Umisuhada Mohd Nor, E. Mazalan, **C. Risko**, M. Crocker & N. Aishah Saidina Amin. *Applied Surface Science* (2022), 586, 152641. DOI: 10.1016/j.apsusc.2022.152641
66. The Solution is the Solution: Data-Driven Elucidation of Solution-to-Device Feature Transfer for  $\pi$ -Conjugated Polymer Semiconductors. ***C.P. Callaway***, A.L. Liu, R. Venkatesh, Y. Zheng, M. Lee, J.C. Meredith, M. Grover, **C. Risko\*** & E. Reichmanis. *ACS Applied Materials & Interfaces* (2022), 2022, 14, 3, 3613-3620. DOI: 10.1021/acsami.1c20994
65. Following the Crystal Growth of Anthradithiophenes through Atomistic Molecular Dynamics Simulations and Graph Characterization. ***S.M. Ryno***, R. Noruzi, ***C. Karunasena***, B.S.S. Pokuri, ***S.***

- Li**, B. Ganapathysubramanian & **C. Risko\***. *Molecular Systems Design & Engineering* (2022), 7, 112-122. DOI: 10.1039/D1ME00157D
64. Nanoribbons or Weakly Connected Acenes? The Influence of Pyrene Insertion on Linearly Extended Ring Systems. **Q. Ai**, T. Smith, A.D. Thilanga Liyanage, S.M. Mazza, S.R. Parkin, J.E. Anthony & **C. Risko\***. *Journal of Materials Chemistry C* (2021), 9, 16929-16934. DOI: 10.1039/D1TC05193H
  63. Reconsidering the Roles of Noncovalent Intramolecular “Locks” in  $\pi$ -Conjugated Molecules. **C. Karunasena**, **S. Li**, **M.C. Heifner**, **S.M. Ryno** & **C. Risko\***, *Chemistry of Materials* (2021), 33, 9139-9151. DOI: 10.1021/acs.chemmater.1c02335
  62. Biotinylation as a Tool to Enhance the Uptake of Small Molecules in Gram-Negative Bacteria. A. Pandeya, L. Yang, O. Alegun, **C. Karunasena**, **C. Risko**, Z. Li & Y. Wei, *PLoS ONE* (2021), 16, e0260023. DOI: 10.1371/journal.pone.0260023
  61. Lowering Electrocatalytic CO<sub>2</sub> Reduction Overpotential Using N-Annulated Perylene Diimide Rhenium Bipyridine Dyads with Variable Tether Length. J.D. B. Koenig, Z.S. Dubrawski, **K.R. Rao**, J. Willkomm, B.S. Gelfand, **C. Risko**, W.E. Piers & G.C. Welch, *Journal of the American Chemical Society* (2021), 143, 16849-16864. DOI: 10.1021/jacs.1c09481
  60. Thermomechanical Enhancement of DPP-4T through Purposeful  $\pi$ -Conjugation Disruption. **C.P. Callaway**, **J.H. Bombile**, **W. Mask**, **S.M. Ryno** & **C. Risko\***, *Journal of Polymer Science* (2022), 60, 559. DOI: 10.1002/pol.20210494
  59. Evolution of Chain Dynamics and Oxidation States with Increasing Chain Length for a Donor–Acceptor-Conjugated Oligomer Series. S. Chaudhry, Y. Wu, Z. Cao, **S. Li**, **J.L. Canada**, X. Gu, **C. Risko\*** & J. Mei. *Macromolecules* (2021), 54, 8207-8219. DOI: 10.1021/acs.macromol.1c00963
  58. Genetic Algorithms and Machine Learning for Predicting Surface Composition, Structure, and Chemistry: A Historical Perspective and Assessment. **J. Roberts**, J.R.S. Bursten & **C. Risko\***. *Chemistry of Materials* (2021), 33, 6589-6615. DOI: 10.1021/acs.chemmater.1c00538
  57. Synthesis, Structures, and Reactivity of Isomers of [RuCp\*(1,4-(Me<sub>2</sub>N)<sub>2</sub>C<sub>6</sub>H<sub>4</sub>)<sub>2</sub>]. E. Longhi, **C. Risko**, J. Bacsá, V. Khrustalev, S. Rigin, K. Moudgil, T.V. Timofeeva, S.R. Marder & S. Barlow. *Dalton Transactions* (2021), 50, 13020-13030. DOI: 10.1039/D1DT02155A
  56. What is Special about Silicon in Functionalized Organic Semiconductors? K.J. Thorley, M. Benford, Y. Song, S.R. Parkin, **C. Risko** & J.E. Anthony. *Materials Advances* (2021), 2, 5415-5421. DOI: 10.1039/D1MA00447F
  55. Modification of the LiFePO<sub>4</sub> (010) Surface Due to Exposure to Atmospheric Gases. **K. Jarolimek** & **C. Risko\***. *ACS Applied Materials and Interfaces* (2021), 13, 29034-29040. DOI: 10.1021/acsami.1c01394
  54. OCELOT: An Infrastructure for Data-driven Research to Discover and Design Crystalline Organic Semiconductors. **Q. Ai**, **V. Bhat**, **S.M. Ryno**, **K. Jarolimek**, **P. Sornberger**, **A. Smith**, M.M. Haley, J.E. Anthony & **C. Risko\***. *Journal of Chemical Physics* (2021) 154, 174705. DOI: 10.1063/5.0048714
  53. Suppressing Bias Stress Degradation in High Performance Solution Processed Organic Transistors Operating in Air. H.F. Iqbal, **Q. Ai**, K.J. Thorley, H. Chen, I. McCulloch, **C. Risko**, J.E. Anthony & O.D. Jurchescu. *Nature Communications* (2021), 12, 2352. DOI: 10.1038/s41467-021-22683-2
  52. Reactivity of an Air-Stable Dihydrobenzimidazole n-Dopant with Organic Semiconductor Molecules. S. Jhulki, H.I. Un, Y.F. Ding, **C. Risko**, S.K. Mohapatra, J. Pei, S. Barlow & S.R. Marder. *Chem* (2021), 7, 1050-1065. DOI: 10.1016/j.chempr.2021.01.020

51. A Molecular Interaction–Diffusion Framework for Predicting Organic Solar Cell Stability. M. Ghasemi, N. Balar, Z. Peng, H. Hu, Y. Qin, T. Kim, J.J. Rech, M. Bidwell, **W. Mask**, I. McCulloch, W. You, A. Amassian, **C. Risko**, B.T. O'Connor & H. Ade. *Nature Materials* (2021) 20, 525-532. DOI: 10.1038/s41563-020-00872-6
50. Steric Manipulation as a Mechanism for Tuning the Reduction and Oxidation Potentials of Phenothiazines. **C.F. Elliott**, **K.E. Fraser**, S.A. Odom & **C. Risko\***. *Journal of Physical Chemistry A* (2021), 125, 272-278. DOI: 10.1021/acs.jpca.0c09801
49. n-type Charge Transport in Heavily p-Doped Polymers. Z. Liang, H.H. Choi, X. Luo, T. Liu, A. Abtahi, **U.S. Ramasamy**, J.A. Hitron, K.N. Baustert, J.L. Hempel, A.M. Boehm, A. Ansary, D.R. Strachan, J. Mei, **C. Risko**, V. Podzorov & K.R. Graham. *Nature Materials* (2021), 20, 518-524. DOI: 10.1038/s41563-020-00859-3
48. Acid Dyeing for Green Solvent Processing of Solvent Resistant Semiconducting Organic Thin Films. C.R. Harding, J. Cann, A. Laventure, M. Sadeghianlemraski, M. Abd-Ellah, **K.R. Rao**, B.S. Gelfand, H. Aziz, L. Kaake, **C. Risko** & G.C. Welch. *Materials Horizons* (2020), 7, 2959-2969. DOI: 10.1039/D0MH00785D
47. A Genetic Algorithmic Approach to Determine the Structure of Li-Al Layered Double Hydroxides. **J. Roberts**, Y. Song, M. Crocker & **C. Risko\***. *Journal of Chemical Information and Modeling* (2020), 60, 4845-4855. DOI: 10.1021/acs.jcim.0c00493
46. Synthesis and Electronic Properties of a Linearly Fused Anthracene Dimer. E.O. Onyango, P.Z. Mannes, A. Pletnev, D.B. Granger, **Q. Ai**, **C. Risko**, J.E. Anthony & G.W. Gribble. *Tetrahedron Letters* (2020) 61, 152182. DOI: 10.1016/j.tetlet.2020.152182
45. Determination of the Free Energies of Mixing of Organic Solutions through a Combined Molecular Dynamics and Bayesian Statistics Approach. **S. Li**, B.S.S. Pokuri, **S.M. Ryno**, **A. Nkansah**, **C. De'vine**, B. Ganapathysubramanian & **C. Risko\***. *Journal of Chemical Information and Modeling* (2020) 60, 1424-1431. DOI: 10.1021/acs.jcim.9b01113
44. Rational Functionalization of a C<sub>70</sub> Buckybowl to Enable a C<sub>70</sub>:Buckybowl Co-crystal for Organic Semiconductor Applications. G. Gao, M. Chen, **J. Roberts**, M. Feng, C. Xiao, G. Zhang, S.R. Parkin, **C. Risko** & L. Zhang. *Journal of the American Chemical Society* (2020) 142, 2460-2470. DOI: 10.1021/jacs.9b12192
43. Nitration of Benzothioxanthene: Towards a New Class of Dyes with Versatile Photophysical Properties. J.M.A. Castán, L.A. Galán, **S. Li**, C. Dalinot, P.S. Marqués, M. Allain, **C. Risko\***, C. Monnereau, O. Maury, P. Blanchard & C. Cabanetos. *New Journal of Chemistry* (2020) 44, 900-905. DOI: 10.1039/C9NJ05804D
42. Solvent-Molecule Interactions Govern Crystal Habit Selection in Naphthalene Tetracarboxylic Diimides. G.E. Purdum, X. Chen, **N.G. Telesz**, **S.M. Ryno**, N. Sengar, T. Gessner, **C. Risko**, P. Clancy, R.T. Weitz & Y.L. Loo. *Chemistry of Materials* (2019) 31, 9691-9698. DOI: 10.1021/acs.chemmater.9b03142
41. Understanding the Effect of Host Structure of Nitrogen Doped Ultrananocrystalline Diamond Electrode on Electrochemical Carbon Dioxide Reduction. N. Wanninayake, **Q. Ai**, R. Zhou, Md. A. Hoque, S. Herrell, M.I. Guzman, **C. Risko\*** & D.Y. Kim. *Carbon* (2019), 157, 408-419. DOI: 10.1016/j.carbon.2019.10.022
40. Computationally Aided Design of a High-Performance Organic Semiconductor: The Development of a Universal Crystal Engineering Core. A.J. Petty II, **Q. Ai**, J.C. Sorli, H.F. Haneef, G.E. Purdum, A. Boehm, D.B. Granger, K. Gu, C.P. Lacerda Rubinger, S.R. Parkin, K.R. Graham, O.D. Jurchescu, Y.L. Loo, **C. Risko** & J.E. Anthony. *Chemical Science* (2019) 2019,10, 10543-10549. DOI: 10.1039/C9SC02930C

39. Exploiting Excited-State Aromaticity to Design Highly Stable Singlet Fission Materials. K.J. Fallon, P. Budden, E. Salvadori, A.M. Ganose, C.N. Savory, L. Eyre, S. Dowland, **Q. Ai**, **S. Goodlett**, **C. Risko**, D.O. Scanlon, C.W.M. Kay, A. Rao, R.H. Friend, A.J. Musser & H. Bronstein. *Journal of the American Chemical Society* (2019) 14, 13867-13876. DOI: 10.1021/jacs.9b06346
38. Even-Odd Alkyl Chain-Length Alternation Regulates Oligothiophene Crystal Structure. E. Burnett, **Q. Ai**, B. Cherniawski, S.R. Parkin, **C. Risko\*** & A. Briseño. *Chemistry of Materials* (2019) 31, 17, 6900-6907. DOI: 10.1021/acs.chemmater.9b01317
37. Non-Covalent Close Contacts in Fluorinated Thiophene-Phenylene-Thiophene Conjugated Units: Understanding the Nature and Dominance of O···H versus S···F and O···F Interactions towards the Control of Polymer Conformation. T. Kharandiuk, E. Hussien, J. Cameron, R. Petrina, N. Findlay, R. Naumov, W. Klooster, S. Coles, **Q. Ai**, **S. Goodlett**, **C. Risko\*** & P. Skabara. *Chemistry of Materials* (2019) 31, 17, 7070-7079. DOI: 10.1021/acs.chemmater.9b01886
36. Enhancing CO<sub>2</sub> Absorption for Post-Combustion Carbon Capture via Zinc-based Biomimetic Catalysts in Industrially Relevant Amine Solutions. L.R. Widger, M. Sarma, R.A. Kelsey, **C. Risko**, C.A. Lippert, S.R. Parkin & K. Liu. *International Journal of Greenhouse Gas Control* (2019) 85, 156-165. DOI: 10.1016/j.ijggc.2019.04.002
35. Organic Semiconductors Derived from Dinaphtho-fused *s*-indacenes: How Molecular Structure and Film Morphology Influence Thin-Film Transistor Performance. A. Zeidell, L. Jennings, C. Frederickson, **Q. Ai**, J. Dressler, L. Zakharov, **C. Risko**, M.M. Haley & O.D. Jurchescu. *Chemistry of Materials* (2019) 31, 17, 6962-6970. DOI: 10.1021/acs.chemmater.9b01436
34. Impact of Atomistic Substitution on Thin-Film Structure and Charge Transport in a Germanyl-ethynyl Functionalized Pentacene. J.C. Sorli, **Q. Ai**, D.B. Granger, K. Gu, S. Parkin, **K. Jarolimek**, **N.G. Telesz**, J.E. Anthony, **C. Risko** & Y.L. Loo. *Chemistry of Materials* (2019) 31, 17, 6615-6623. DOI: 10.1021/acs.chemmater.9b00546
33. Triperylene[3,3,3]propellane triimides: Achieving a New Generation of Quasi-D<sub>3h</sub> Symmetric Nanostructures in Organic Electronics. L. Lv, **J. Roberts**, C. Xiao, Z. Jia, W. Jiang, G. Zhang, **C. Risko\*** & L. Zhang. *Chemical Science* (2019) 10, 4951-4958. DOI: 10.1039/C9SC00849G
32. Near-Infrared-Absorbing Indolizine-Porphyrin Push-Pull Dye for Dye-Sensitized Solar Cells. H. Cheema, A. Baumann, **E.K. Lova**, P. Brogdon, L.E. McNamara, C. Carpenter, N.I. Hammer, S. Mathew, **C. Risko\*** & J.H. Delcamp. *ACS Applied Materials & Interfaces* (2019) 11, 16474-16489. DOI: 10.1021/acsami.8b21414
31. Oxidation Pathways Involving a Sulfide-Endcapped Donor–Acceptor–Donor  $\pi$ -Conjugated Molecule and Antimony(V) Chloride. S. Chaudhry, **S.M. Ryno**, M. Zeller, D.R. McMillin, **C. Risko\*** & J. Mei. *Journal of Physical Chemistry B* (2019) 123, 3866-3874. DOI: 10.1021/acs.jpcc.9b01389
30. Deconstructing the Behavior of Donor-Acceptor Copolymers in Solution & the Melt: The Case of PTB7. **S.M. Ryno** & **C. Risko\***. *Physical Chemistry Chemical Physics* (2019) 21, 7802-7813. DOI: 10.1039/C9CP00777F
29. Bis(tercarbazole) Pyrene and Tetrahydropyrene Derivatives: Photophysical and Electrochemical Properties, Theoretical Modeling, and OLEDs. B.R. Kaafarani, T.H. El-Assaad, **W.A. Smith**, **S.M. Ryno**, F. Hermerschmidt, J. Lyons, D. Patra, B. Wex, E. List-Kratochvil, **C. Risko**, S. Barlow & S.R. Marder. *Journal of Materials Chemistry C* (2019) Advance Article. DOI: 10.1039/C8TC06266H
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### Book Chapters

5. Recent Advances in the Computational Characterization of  $\pi$ -Conjugated Systems. J.L. Brédas, X. Chen, T. Körzdörfer, H. Li, **C. Risko**, **S.M. Ryno** & T. Wang. In *Handbook of Conducting Polymers*, 4<sup>th</sup> Edition. Eds. Terje A. Skotheim, Barry C. Thompson & John R. Reynolds. CRC Press, 2019.
4. Non-covalent Interactions in Organic Electronic Materials. M.K. Raava, **C. Risko** & J.L. Brédas. In *Non-Covalent Interactions in Quantum Chemistry and Physics*. Eds. de la Roza, A.O. & DiLabio, G. Elsevier, 2017.
3. Understanding the Relationships Among Molecular Structure, Excited-State Properties, and Polarizabilities of  $\pi$ -Conjugated Chromophores. R.L. Gieseking, **C. Risko**, S.R. Marder & J.L. Brédas. In *WSPC Reference on Organic Electronics*, Eds. Brédas, J.L. and Marder, S.R. World Scientific Publishing Company Pte. Ltd. 2017.

2. Small Optical Gap Molecules and Polymers: Using Theory to Design More Efficient Materials for Organic Photovoltaics. **C. Risko** & J.L. Brédas. In *Topics in Current Chemistry*. Eds. Beljonne, D. and Cornil, J. Springer-Verlag, Berlin. 2013. 1-38.
1. Modeling the Electronic and Optical Processes in Organic Solar Cells: Density Functional Theory and Beyond. J.L. Brédas, V. Coropceanu, C. Doiron, Y.T. Fu, T. Körzdörfer, L. Pandey, **C. Risko**, J.S. Sears, B. Yang, Y. Yi, & C. Zhang. In *Organic Solar Cells: Fundamentals, Devices, and Upscaling*. Eds. Rand, B. and Richter, H. Pan Stanford Publishing. 2013.

#### Article Reviews

1. **C. Risko\*** & J.L. Brédas. News and Views. Organic Semiconductors: Healing Touch. *Nature Materials*, 12, 1084-1085 (2013).

#### Patents

1. 1,9,10-Substituted Phenothiazine Derivatives with Strained Radical Cations and Use Thereof. S.A. Odom, **C. Risko**, M.D. Casselman, C.F. Elliot, N.H. Attanayake, S. Modekrutti. U.S. Patent Number 10,854,911. Publication Date: December 1, 2020.

#### Invited Lectures and Conference Presentations (74 total)

##### *Invited Presentations from Independent Career (54 total)*

54. International Conference on the Science and Technology of Synthetic Metals. Glasgow, Scotland. From Molecules to Organic Semiconductors: The Multi-scale Challenge of Structure from the Perspective of Modeling. July 18, 2022.
53. Collaborative Approaches to Advances in Organic and Hybrid Electronics. Boulder, Colorado. Thinking Big (Data) about Organic Materials. May 24, 2022.
52. Centre College, Student Affiliates of the American Chemical Society, Danville, Kentucky. From Molecules to Organic Semiconductors: At the Convergence of Molecular Design, Processing, and Data-Enabled Discovery. April 13, 2022.
51. University of Oregon, Department of Chemistry & Biochemistry. Eugene, Oregon. Organic/Inorganic/Materials Chemistry Seminar. From Molecules to Organic Semiconductors: At the Convergence of Molecular Design, Processing, and Data-Enabled Discovery. February 25, 2022.
50. Northern Kentucky University, Department of Chemistry. Highland Heights, Kentucky. From Molecules to Organic Semiconductors: Perspectives from the Modeling Point of View. September 22, 2021.
49. SPIE Optics + Photonics 2021. Physical Chemistry of Semiconductor Materials and Interfaces XX. San Diego, California. Virtual Presentation (Hybrid Format). Dynamics and Disorder in the Building Blocks of Organic Semiconductors. August 4, 2021.
48. SPIE Optics + Photonics 2021. Organic and Hybrid Field-Effect Transistors XX. San Diego, California. Virtual Presentation (Hybrid Format). Towards Data-enabled Discovery and Design of Organic Semiconductors. August 2, 2021.
47. Telluride Science Research Center (TSRC) Workshop: Hierarchical Assembly and Function of Organic and Hybrid Materials. Telluride, Colorado. Organic Semiconductors: More than We Know. July 22, 2021.

46. Cambridge Crystallographic Data Centre. Virtual Presentation. From Molecules to Organic Semiconductors: Linking Structure, Processing, Polymorphs, and Response. May 26, 2021.
45. Spring 2021 National Meeting of the American Chemical Society. Molecular Crystal Polymorphism: How, When, & Why Molecules Pack in the Solid State. Virtual Presentation. From Molecules to Organic Semiconductors: The Challenges of Processing and Polymorphs from the Perspective of Modeling. April 6, 2021.
44. 2020 MRS Spring/Fall Meeting & Exhibit. Virtual Presentation. S.EL14: New Materials Design for Organic Semiconductors Through Multimodal Characterization and Computational Techniques. Developing Models to Determine the Impacts of Synthetic Design and Processing on Organic Semiconductors. November 29, 2020.
43. Pacific Northwest National Laboratory Energy Materials Storage Initiative (EMSI) Seminar Series. Introducing D<sup>3</sup>TaLES: Materials Chemistry, Machine Learning, and Robotics to Discover and Design Liquid-based Energy-Storage Materials. November 9, 2020.
42. Universiti Teknologi Malaysia. 53<sup>rd</sup> Distinguished Lecture Series. Skudai, Johor, Malaysia. Virtual Presentation. From Molecules to Organic Semiconductors: The Challenges of Processing and Polymorphs from the Perspective of Modeling. September 22, 2020.
41. University of Kentucky, Department of Physics and Astronomy, Condensed Matter Physics Group. Lexington, Kentucky. From Molecules to Organic Semiconductors: The Challenges of Processing and Polymorphs from the Perspective of Modeling. September 22, 2020.
40. Georgia Institute of Technology, School of Chemistry and Biochemistry. Atlanta, Georgia. Frontiers Seminar. From Molecules to Organic Semiconductors: The Challenges of Processing and Polymorphs from the Perspective of Modeling. November 21, 2019.
39. 2019 International Society for Optical Engineering (SPIE) Annual Meeting. Symposium on Physical Chemistry of Semiconductor Materials and Interfaces XVIII. San Diego, California. Small Changes, Large Impact: Understanding How Molecular Structure and Processing Impact the Assembly and Performance of Organic Semiconductors. August 13, 2019.
38. Telluride Science Research Center (TSRC) Workshop on The Role of Assembly in Dictating the Functionality and Applications of Organic Semiconductors. Telluride, Colorado. From Molecules to Materials: The Challenges of Processing and Polymorphs. July 23, 2019.
37. University of Mons Symposium on Contemplating 20 Years of Organic Electronics. Mons, Belgium. Small Changes, Large Impact: Understanding How Molecular Structure and Processing Impact the Assembly and Performance of Organic Semiconductors. July 12, 2019.
36. 3<sup>rd</sup> International Symposium on Molecular Design of Optoelectronic Materials. Beijing, China. Developing Models to Connect Molecular Topology, Processing, and the Structure of Organic Semiconductors. May 24, 2019.
35. 3<sup>rd</sup> International Symposium on Molecular Design of Optoelectronic Materials. Beijing, China. From Molecules to Materials: The Challenges of Processing and Polymorphs. May 23, 2019.
34. University of California, Santa Barbara Institute for Energy Efficiency (IEE). Santa Barbara, California. Small Changes, Large Impact: Understanding How Molecular Structure and Processing Impact the Assembly of Organic Semiconductors. May 9, 2019.
33. 2019 Materials Research Society (MRS) Spring Meeting & Exhibit. Phoenix, Arizona. EP06: Organic Electronics – Materials and Devices. From Molecular Design to Materials Properties: Developing Theoretical Tools to Aid in the Design of Organic Semiconductors. April 24, 2019.

32. American Chemical Society (ACS) Spring 2019 National Meeting. Orlando, Florida. PHYS: Materials & Techniques to Advance Redox Flow Batteries. Exploring Chemical Subtleties to Foster Improved Materials Design for Redox Flow Batteries. March 31, 2019.
31. University of Washington, Department of Chemistry. Seattle, Washington. Physical Chemistry Division Seminar. Small Changes, Large Impact: Understanding How Molecular Structure and Processing Impact the Assembly of Organic Semiconductors. March 6, 2019.
30. North Carolina State University, Department of Chemistry. Raleigh, North Carolina. Small Changes, Large Impact: Understanding How Molecular Structure and Processing Impact the Assembly and Performance of Organic Semiconductors. January 25, 2019.
29. University of Kentucky, Department of Chemical and Materials Engineering. Lexington, Kentucky. Can We Define a Genome for Organic Semiconductors? December 5, 2018.
28. 13th World Congress on Computational Mechanics (WCCM XIII). Multiscale Modeling of Structural, Mechanical and Electrochemical Properties of Materials for Energy Applications. New York, New York. Small Changes with Large Impact: Developing Multiscale Models to Understand How Chemical Structure Impacts the Performance of Organic Semiconductors. July 24, 2018.
27. EXTMOS EU-US Workshop. Princeton University, Princeton, New Jersey. Can We Define a Genome for Organic Semiconductors? July 10, 2018.
26. MOLTECH-Anjou, University of Angers. Angers, France. Deconstructing the Genome of Organic Semiconductors: Developments Towards in silico Materials Design. June 19, 2018.
25. Tampere University of Technology, Department of Chemistry. Tampere, Finland. Deconstructing the Genome of Organic Semiconductors: Developments towards in silico Materials Design. May 24, 2018.
24. International Symposium on Molecular Design of Optoelectronic Materials. Beijing, China. Keynote Lecture. Deconstructing the Genome of Organic Semiconductors: Developments towards *in silico* Materials Design. April 26, 2018.
23. Peking University, Department of Materials Science and Engineering. Beijing, China. Developing Theory-Driven Approaches to Design Organic Semiconducting Materials. April 25, 2018.
22. Institute of Chemistry, Chinese Academy of Sciences. Beijing, China. Developing Theory-Driven Approaches to Design Organic Semiconducting Materials. April 24, 2018.
21. University of Calgary, Department of Chemistry. Calgary, Alberta, Canada. Deconstructing the Genome of Organic Semiconductors: Developments towards in silico Materials Design. April 6, 2018.
20. University of Missouri, Columbia, Department of Physics. Columbia Missouri. O.M. Stewart Colloquium. Noncovalent Interactions in the Design of Organic Semiconducting Materials – A Theoretical Chemistry Perspective. March 12, 2018.
19. North Carolina State University, Department of Chemistry. Raleigh, North Carolina. Deconstructing the Genome of Organic Semiconductors: Developments towards in silico Materials Design. Department of Chemistry. December 1, 2017.
18. Southeastern Regional Meeting of the American Chemical Society (SERMACS 2017). Symposium on Contemporary Computational Chemistry. Charlotte, North Carolina. Considerations of Noncovalent Interactions in the Design of Organic Semiconducting Materials: A Theoretical Perspective. November 9, 2017.
17. XXV International Materials Research Congress (IMRC 2017). Symposium on Advances in Organic and Organic/ Inorganic Hybrid Materials for Electronics and Photonics. Cancun, Mexico.

- Developing Theory-Driven Approaches to Design Organic Semiconducting Materials. August 22, 2017.
16. 2017 International Society for Optical Engineering (SPIE) Annual Meeting. Symposium on Organic Field-Effect Transistors XVI. San Diego, California. Developing Theory-Driven Approaches to Design Organic Semiconducting Materials. August 9, 2017.
  15. 100th Canadian Chemistry Conference and Exhibition. Symposium on Noncovalent Interactions in Quantum Chemistry and Physics: Theory and Applications. Toronto, Canada. Noncovalent Interactions in Organic Electronic Materials. May 31, 2017.
  14. 100th Canadian Chemistry Conference and Exhibition. Symposium on Dye Chemistry. Toronto, Canada. Developing Theory-Driven Approaches to Design Organic Semiconducting Materials. May 29, 2017.
  13. Wake Forest University. Departments of Physics and Chemistry. Winston-Salem, North Carolina. Developing Theory-Driven Approaches to Design Organic Semiconducting Materials. April 12, 2017.
  12. University of North Carolina, Charlotte, Nanoscale Science Seminar. Charlotte, North Carolina. Developing Theory-Driven Approaches to Design Organic Semiconducting Materials. March 2, 2017.
  11. Eastern Kentucky University, Department of Chemistry. Richmond, Kentucky. Developing Theory-Driven Approaches to Design Organic Semiconducting Materials. February 3, 2017.
  10. 2016 Fall MRS Meeting, Boston, Massachusetts. EC1: Redox Activity on the Molecular Level – Fundamental Studies and Applications. Establishing Fundamental Connections between Molecular Redox Events and the Performance of Organic-based Electronic and Energy Storage Devices. November 30, 2016.
  9. 2016 University of North Carolina at Chapel Hill Solar Energy Research Center (SERC) Conference. Theory-Driven Approaches to Design  $\pi$ -Conjugated Organic Materials for Electronics and Energy-Storage Applications. October 21, 2016.
  8. XXV International Materials Research Congress (IMRC). Material Interfaces in Organic Electronics & Electrochemical Energy Storage: A Theoretical Perspective. August 15, 2016.
  7. 2016 International Conference on the Science and Technology of Synthetic Metals, ICSM2016. Building a Theoretical Perspective on How Chemical Structure Determines the Performance of Organic Electronic Devices. June 28, 2016.
  6. 2015 Fall MRS Meeting, Boston, Massachusetts. Symposium Z: Molecularly Ordered Organic and Polymer Semiconductors – Fundamentals and Devices. Revealing the Relationships among Chemical Structure, Molecular Packing, and the Performance of Organic Electronic Devices. December 2, 2015.
  5. Center for Hierarchical Materials Design (CHiMaD) and National Institute of Standards and Technology (NIST) Workshop on Advances and Challenges in Soft Matter Photovoltaic Research, University of Chicago, Chicago, Illinois. Unraveling the Structure-Processing-Property Paradigm: A Theoretical Perspective. November 13, 2015.
  4. Telluride Scientific Research Center (TSRC) Workshop on Multiscale Simulations of Organic Electronic Materials, Telluride, Colorado. Untangling Relationships among Chemical Structure, Molecular Packing, and the Performance of Organic Electronic Devices. July 16, 2015.

3. University of Kentucky, Department of Physics and Astronomy, Condensed Matter Physics Group. Unraveling the Molecular-Structure–Materials-Property Paradigm in Organic Electronics Materials: A Theoretical Perspective. April 14, 2015.
2. 5<sup>th</sup> Simpósio de Estrutura Eletrônica e Dinâmica Molecular (V SeedMol), Pirenópolis, GO, Brazil. How Molecular Structure and Solid-State Packing Impact Underlying Electronic Processes in Organic Electronic Devices: Insight from Theoretical Materials Chemistry Approaches. September 17, 2014.
1. Kentucky Organic Electronics Meeting (KOEM), Lexington, Kentucky. Solid-State Molecular Packing and the Fundamental Physical Processes in Organic Electronic Devices: Insight from Theoretical Materials Chemistry Approaches. June 23, 2014.

***Invited Presentations Prior to Independent Career (20 total)***

20. 249<sup>th</sup> ACS Meeting and Exposition, Denver, Colorado. Computational Description of Donor-Acceptor  $\pi$ -Conjugated Materials for Organic Photovoltaics Applications. March 22, 2015.
19. European Materials Research Society (E-MRS) Spring 2014, Lille, France. Symposium on Computational Modeling of Organic Semiconductors: From the Quantum World to actual Devices. Solid-State Molecular Packing and the Fundamental Physical Processes in Organic Electronic Devices: Insight from Quantum-Chemical Approaches. May 26, 2014.
18. University of Kentucky, Department of Chemistry. Solid-State Molecular Packing and the Fundamental Physical Processes in Organic Electronic Devices: Insight from Theoretical Materials Chemistry Approaches. March 31, 2014.
17. University of Kansas, Department of Chemistry. Building a Molecular-Scale Perspective on the Fundamental Physical Processes of Organic Electronic Devices. December 19, 2013.
16. Centre Européen de Calcul Atomique et Moléculaire (CECAM) Workshop on Structure-Property Relationships of Molecular Precursors to Organic Electronics, Lausanne, Switzerland. *Young Talent's Talk*: A Molecular Perspective on the Physical Processes in Organic Solar Cells. October 22, 2013.
15. 12<sup>th</sup> European Conference on Molecular Electronics (ECME) 2013, London, England. Unravelling the Influence of Molecular Packing on the Properties of Organic Solar Cell Active Layers: A Theoretical Perspective. September 7, 2013.
14. Theory and Applications of Computational Chemistry (TACC) 2012, Pavia, Italy. Resolving the Intricacies of the Organic-Organic Interface in Printed Electronic Devices: A Computational Approach. September 4, 2012.
13. Baylor University, Department of Chemistry and Biochemistry. Waco, Texas. Developing Insight into the Complexity of the Electronic and Optical Processes in Organic Solar Cells. November 28, 2011.
12. Kent State University, Department of Physics. Kent, Ohio. Developing Insight into the Complexity of the Electronic and Optical Processes in Organic Solar Cells. November 14, 2011.
11. Global Organic Photovoltaics Conference (GOPV), Hangzhou, China. Electronic and Optical Processes in Organic Solar Cells: Complexity in Action. October 11, 2011.
10. Innovation Lab GmbH, Heidelberg, Germany. Building the Foundation of an Integrated, Multiscale Theoretical Understanding of the Electronic and Optical Processes in Organic Solar Cells. April 7, 2011.

9. International Conference on Electroluminescence and Organic Optoelectronics (ICEL 2010), Ann Arbor, Michigan. The Donor-Acceptor Interface in Organic Solar Cells: Complexity in Action. October 18, 2010.
8. University of Mons, Mons, Belgium. Research Activities in Atlanta. May 10, 2010.
7. Solvay NOH, Brussels, Belgium. Theoretical Characterization & Screening of OLED Host Materials. May 3, 2010.
6. Michigan State University, Department of Chemistry. Lansing, Michigan. Assessing Energy Levels and Electrostatic Interactions at Organic-Inorganic Interfaces: Implications for Molecular Electronics. February 12, 2009.
5. Texas Christian University, Department of Chemistry. Fort Worth, Texas. Assessing Energy Levels and Electrostatic Interactions at Organic-Inorganic Interfaces: Implications for Molecular Electronics. November 13, 2007.
4. 2007 INAC/NCN Molecular Conduction and Sensing Workshop. West Lafayette, Indiana. Impact of Charge Injection Barrier on Conduction for Two Molecular Wires. July 18, 2007.
3. University of Southern Mississippi, Department of Chemistry and Biochemistry. Hattiesburg, Mississippi. Functional Organic Electronic and Optical Molecular Systems: A Theoretical Perspective. January 31, 2007.
2. University of California, Santa Barbara, Department of Chemistry and Biochemistry. Santa Barbara, California. Functional Organic Electronic and Optical Molecular Systems: A Theoretical Perspective. January 16, 2007.
1. Pennsylvania State University, Department of Chemistry. State College, Pennsylvania. Functional Organic Electronic and Optical Molecular Systems: A Theoretical Perspective. January 8, 2007.

### Public Lectures

1. Telluride Scientific Research Center (TSRC) Town Talk: "New Materials for Solar Energy Capture and Conversion". Collaboration with Natalie Stingelin (Georgia Institute of Technology). July 19, 2017.

### Conference Presentations with Proceedings (refereed)

#### *Presentations Prior to Independent Career*

3. Effect of Absorption Coefficient on the Performance of Organic Photovoltaics Based on Vinylene-linked Copolymers. S. Ko, R. Mondal, **C. Risko**, J.K. Lee, S. Hong, M.D. McGehee, J.L. Brédas & Z. Bao. PMSE Preprints (2010). Presenter: S. Ko.
2. Influence of the Alkyl Side-chain Length on the Packing of Poly(2,5-bis(3-alkylthiophene-2-yl)thieno[3,2-b]thiophene) (PBTTT) Studied using Molecular Simulations. E.K. Cho, D. Kim, **C. Risko** & J.L. Brédas. PMSE Preprints (2010). Presenter: E.K. Cho.
1. Substrate and Dipole Effects in Metal-Molecule-Semiconductor Heterostructures. P. Carpenter, A. Scott, S. Lodha, **C. Risko**, M.A. Ratner & D. Janes. IEEE Nano2006 (2006). Presenter: A. Scott.



## Conference Presentations without Proceedings

### *Presentations from Independent Career*

8. 2022 Spring American Chemical Society Meeting, San Diego, California. Photocatalysis and Photoelectrocatalysis: from Synthesis, Characterization, and Theoretical Studies of Advanced Materials to Clean Energy Applications. *Contributed Talk: Dynamics and Disorder in Organic Semiconductors*. March 20, 2022.
7. SPIE Optics + Photonics 2018, Organic Field-Effect Transistors XVII. San Diego, California. *Contributed Talk: Conformational Disorder and Unusual Contacts in Organic Semiconductors*. August 23, 2018.
6. SPIE Optics + Photonics 2018, Physical Chemistry of Semiconductor Materials and Interfaces XVII. San Diego, California. *Contributed Talk: Living on the Edge: Using Novel Edge Topology to Direct Transport Characteristics in Carbon Nanoribbons*. August 22, 2018.
5. 2017 Fall Materials Research Society (MRS) Meeting, Boston, Massachusetts. *Contributed Talk: Raising the Oxidation Potentials of Phenothiazines to Advance Redox Shuttle Performance*. November 30, 2017.
4. 47th Central Regional Meeting of the American Chemical Society (CERMACS), Responsive & Functional Polymers (Nano) Materials. *Contributed Talk: Building a Theoretical Perspective on How Chemical Structure Determines the Performance of Polymer-Based Electronic Devices*. May 20, 2016.
3. Materials Research Society (MRS) Spring 2016, Phoenix, Arizona. *Contributed Talk: Revealing the Relationships among Chemical Structure, Molecular Packing, and the Performance of Organic Electronic Devices: A Theoretical Perspective*. March 29, 2016.
2. 12<sup>th</sup> International Symposium on Functional  $\pi$ -Electron Systems (F- $\pi$ -12), Seattle, Washington. *Contributed Talk: Unraveling the Molecular-Structure–Materials-Property Paradigm: A Theoretical Perspective*. July 23, 2015.
1. 2015 Spring Materials Research Society Meeting, San Francisco, California. *Contributed Talk: Molecular Structure, Packing, and Exchange Repulsion: Impact on Electronic Coupling*. April 7, 2015.

### *Presentations Prior to Independent Career*

17. International Colloquium on Flexible Electronics and Photovoltaics, Thuwal, Saudi Arabia (KAUST). *Poster Presentation: The Functional Dependence of the Dynamics, Morphology, and Photovoltaic Performance of Polymer/Acene Bulk-Heterojunctions on Acene Molecular Structure*. November 3-5, 2013.
16. Organic Solar Cells: Theory and Experiment, From Description to Prediction, Santa Fe, New Mexico. *Invited Contributed Talk: Materials-Scale Implications of Solvent and Temperature on [6,6]-Phenyl-C<sub>61</sub>-Butyric Acid Methyl Ester (PCBM): A Theoretical Perspective*. May 6-8, 2013.
15. 2012 Materials Research Society (MRS) Fall Meeting & Exhibit, Boston, Massachusetts. *Contributed Talk: Developing Computational Models to Unravel the Donor:Acceptor Interface in Small-Molecule Organic Solar Cells*. November 25-30, 2012.
14. International Conference on Science and Technology of Synthetic Metals (ICSM) 2012, Atlanta, Georgia. *Poster Presentation: Charge-Carrier Transport at the Organic-Dielectric Interface: Impact of Molecular Packing*. July 8-13, 2012.

13. 10<sup>th</sup> International Symposium on Functional  $\pi$ -Electron Systems (F- $\pi$ -10), Beijing, China. *Poster Presentation*: Developing Models to Unravel the Complexity of the Donor-Acceptor Interface in Organic Solar Cells. October 13-17, 2011.
12. ICMR Summer Program on Emerging Materials for Thin Film Solar Cells, Santa Barbara, California. *Poster Presentation*: Building the Foundation of an Integrated, Multiscale Theoretical Understanding of the Electronic and Optical Processes in Organic Solar Cells. August 7-12, 2011. *Poster won one of Best Poster prizes.*
11. Light Harvesting Processes (LHP) 2011, Banz Monastery, Bad Staffelstein, Germany. *Poster Presentation*: Building the Foundation of an Integrated, Multiscale Theoretical Understanding of the Electronic and Optical Processes in Organic Solar Cells. April 10 - 14, 2011.
10. Gordon Research Conference on Electronic Processes in Organic Materials. *Poster Presentation*: Structure-Property Relationships of High-Performance Polymers in Bulk-Heterojunction Solar Cell Applications. July 25-30, 2010.
9. 9<sup>th</sup> International Symposium on Functional  $\pi$ -Electron Systems (F- $\pi$ -9), Atlanta, Georgia. *Poster Presentation*: Structure-Property Relationships of High-Performance Polymers in Bulk-Heterojunction Solar Cell Applications. Atlanta, May 23-28, 2010. *Poster.*
8. International Conference on Molecular Photonics: Interaction of Light with Nanostructured Materials. *Poster presentation*: Investigations of Organic-Modified Metal and Semiconductor Surfaces. August 29, 2007.
7. American Chemical Society 233rd National Meeting and Exposition. *Contributed Talk*: Extended-Molecule Investigations of Organic-Modified Metal and Semiconductor Surfaces.
6. Gordon Research Conference on Electron Donor-Acceptor Interactions. *Poster Presentation*: Extended Molecule Investigations of Metal-Molecule-Semiconductor Heterostructures. 2006.
5. Gordon Research Conference on Electronic Processes in Organic Materials. *Poster Presentation*: Extended Molecule Investigations of Oligo(phenylene-ethynylene)thiol-Metal Systems to Evaluate Parameters of Importance to Energy Level Alignment. 2006.
4. American Chemical Society 231st National Meeting & Exposition. *Poster Presentation*: Characterization and Comparison of the Singlet-Singlet and Triplet-Triplet Transitions in Neutral and Diprotonated Porphyrins and meso-tetraarylporphyrins. March 29, 2006.
3. 55th Southeast Regional Meeting of the American Chemical Society (SERMACS). *Contributed Talk*: Phenylene-Vinylene-Bridged Bis(triarylamine) Mixed-Valence Compounds: A Joint Experimental and Theoretical Investigation. November 19, 2003.
2. Alvin L. Kwiram Symposium on the Electrical, Optical, and Magnetic Properties of Organic and Hybrid Materials. *Poster Presentation*: Electron Transport Materials: Theoretical Characterization of Silole Derivatives. June 23, 2003.
1. Sixth International Conference on Organic Nonlinear Optics (ICONO). *Poster Presentation*: Electronic Structure of Organic Charge Transport Materials: Dioxaborines & Oxadiazoles. December 17, 2001.

## **SERVICE:**

### **Professional Memberships**

- Member. American Chemical Society (ACS), 2001-present.
- Member. Materials Research Society (MRS), 2012-present.
- Associate Member. University of Kentucky Center for Appalachian Research in Environmental Sciences (UK CARES), 2020-present.

### **International and National Service**

#### ***Service during Independent Career***

- Member. Editorial Advisory Board, *ACS Applied Materials and Interfaces* (American Chemical Society), 2021-present.
- Member. Advisory Board, *Materials Advances* (Royal Society of Chemistry), 2020-present.
- Member. Advisory Board, *Journal of Materials Chemistry C* (Royal Society of Chemistry), 2020-present.
- Member. Editorial Advisory Board, *Chemistry of Materials* (American Chemical Society, 2019-2021).
- Guest Editor. *Chemistry of Materials* Festschrift for Jean-Luc Brédas. 2019.
- Facilitator. American Chemical Society (ACS) New Faculty Workshop
  - Pasadena, California. June 27-29, 2019.
  - Virtual NFW. July 21-24, 2020.
- Co-organizer, 2021 Telluride Science Research Center (TSRC) Workshop on Hierarchical Assembly and Function of Organic and Hybrid Material. Telluride, Colorado. July 19-23, 2021.
- Collaborator. Cottrell Scholar Collaborative: Moving the Dial: A Network for Systemic Change. 2020-2022.
- Collaborator. Cottrell Scholar Collaborative: Development of the “Enhancing Science Courses by Integrating Python (ESCIP)” Network. 2019-2020. ESCIP Virtual Workshop, June 19 & 30, 2020.
- Co-organizer and collaborator. Cottrell Scholar Collaborative: Cottrell Scholars Collaborative (CSC) for a Science Communication Enabled Community. 2018-2019. “Workshop on Communicating Ideas,” Washington, D.C., October 20 – 22, 2019.
- Collaborator. Cottrell Scholar Collaborative: Partnering with CUREnet and Professional Societies for Dissemination of CURE Curricula. 2018-2019.
- General Member. Telluride Science Research Center (TSRC), 2016-present.
- Co-organizer, 2019 Telluride Science Research Center (TSRC) Workshop on The Role of Assembly in Dictating the Functionality and Applications of Organic Semiconductors. Telluride, Colorado. July 22-26, 2019.
- Telluride Town Talk, Telluride Scientific Research Center (TSRC), Telluride, Colorado. July 18, 2017.

- Co-organizer, 2017 Telluride Science Research Center (TSRC) Workshop on Regulating the Interfacial Physicochemical Processes of Organic Semiconductors by Design. Telluride, Colorado. July 17-21, 2017
- Co-organizer, Telluride Science Research Center (TSRC) Workshop on Multiscale Simulations of Organic Electronic Materials, Telluride, Colorado. July 13-17, 2015
- Session Chair:
  - SPIE Organic Photonics + Electronics 2019, Physical Chemistry of Semiconductor Materials and Interfaces XVIII, August 11 – 15, 2019.
  - MRS 2019, Organic Electronics – Materials and Devices, April 22 – 26, 2019.
  - SPIE Organic Photonics + Electronics 2017, Organic Field-Effect Transistors XVI, August 7 – 10, 2017.
  - MRS Spring 2016, Fundamentals of Organic Semiconductors—Synthesis, Morphology, Devices and Theory, March 27 – April 1, 2016.
  - MRS Fall 2015, Molecularly Ordered Organic and Polymer Semiconductors—Fundamentals and Devices, November 30-December 4, 2015.
  - MRS Spring 2015, Crystal Engineering: New Materials and Properties, April 7-10, 2015.
- Peer Review:
  - Journals: ACS Applied Electronic Materials; ACS Applied Materials and Interfaces; ACS Applied Polymer Materials; ACS Energy Letters; ACS Marco Letters; ACS Nano; Advanced Electronic Materials; Advanced Energy Materials; Advanced Materials; Advanced Materials Interfaces; Advanced Theory and Simulations; Beilstein Journal of Organic Chemistry; Chemistry of Materials; ChemPhysChem; Computational and Theoretical Chemistry; Crystal Engineering Communications; Crystal Growth & Design; Electrochimica Acta; IEEE Transactions on Nuclear Science; Inorganic Chemistry; Journal of Chemical Physics; Journal of Chemical Theory and Computation; Journal of Electronic Materials; Journal of Materials Chemistry A; Journal of Materials Chemistry C; Journal of Molecular Physics; Journal of Organic Chemistry; Journal of Physical Chemistry A; Journal of Physical Chemistry C; Journal of Physical Chemistry Letters; Journal of Physics: Condensed Matter; Journal of the American Chemical Society; Langmuir; MRS Communications; Nanoscale; Nature Communications; Nature Materials; npj Computational Materials; Organic Electronics; Physical Chemistry Chemical Physics; Physical Review Letters; Proceedings of the National Academy of Sciences of the United States of America (PNAS); Science; Science Advances; Synthetic Metals
  - Funding Agencies: American Chemical Society Petroleum Research Fund [ACS PRF]; Army Research Office; Department of Energy (Basic Energy Sciences [BES]; Early Career program); Netherlands Foundation for Fundamental Research on Matter (FOM); French National Research Agency (ANR); North Dakota State University Department of Energy EPSCoR; National Science Foundation (Division of Materials Research – Condensed Matter and Materials Theory [CMMT] & Designing Materials to Revolutionize and Engineer our Future [DMREF]; CAREER program); Royal Society of Chemistry (RSC) Research Fund

### ***Service Prior to Independent Career***

- Co-organizer, INAC/NCN Molecular Conduction and Sensing Workshop. Purdue University, West Lafayette, Indiana. July 18 – 20, 2007.
- Co-founder and co-director of the Northwestern University Postdocs in Chemistry (NUPC), Northwestern University, Department of Chemistry (2006-2008).

- Session Chair:
  - European Materials Research Society (E-MRS) 2014, Computational Modeling of Organic Semiconductors: From the Quantum World to Actual Devices, May 27-29, 2014.
  - International Conference on Science and Technology of Synthetic Metals 2013 (ICSM 2013), Interfaces/Theory. July 8-13, 2012.
  - 9th International Symposium on Functional  $\pi$ -Electron Systems (F- $\pi$ -9, 2010), Session 11b. May 23-28, 2010.

## **University & Department Service**

### ***Service during Independent Career***

- Member. University of Kentucky Office of the President LSAMP Workgroup (2022-present).
- Member. University of Kentucky Department of Chemistry Faculty Search Committee (2021).
- Chair. University of Kentucky Department of Chemistry Diversity and Inclusion Committee (2020-2021).
- Member. University of Kentucky Office of Vice President of Research Strategic Planning Committee Specific to Department of Defense Research (2020-present).
- Member. University of Kentucky Department of Chemistry Executive Committee (2020-2021).
- Member. University of Kentucky Department of Chemistry Graduate Program Committee (2020-2021).
- Faculty Liaison. University of Kentucky Department of Chemistry Graduate Student Association [GSA] (2020-2021).
- Member. External Review Committee (ERC) for University of Kentucky Research (2019).
- Member. University of Kentucky Center for Applied Energy Research Center Unit Review Committee (2019).
- Member. University of Kentucky College of Arts & Sciences Advisory Committee on Industrial Engagement (2018-2020).
- Member. University of Kentucky Department of Chemistry Full-Time Instructor Search Committee (2018).
- Member. University of Kentucky Department of Chemistry Graduate Recruiting Committee (2018-2020).
- Organizer. 2017 University of Kentucky Department of Chemistry Naff Symposium. Bioelectronics: Where Chemistry, Materials, and Medicine Meet (March 31, 2017).
- Member. University of Kentucky President Appointed Committee on Academic Computing (2017-2019).
- Member. University of Kentucky Department of Chemistry *ad hoc* Committee to Develop Industrial Outreach Program (2017-2018).
- Faculty Advisor. University of Kentucky Student Affiliates of the American Chemical Society, *ChemCats* (2015-2018).
- Mentor. University of Kentucky Center for Applied Energy Research National Science Foundation (NSF) Broadening Participation in Engineering Program (2015-2019).

- Mentor. University of Kentucky College of Arts & Sciences Faculty-Student Mentoring Program (2015-2016).
- Co-Director. University of Kentucky Department of Chemistry Mathematics of Physical Chemistry Boot Camp (2015-2018).
- Organizer. 2015 University of Kentucky Department of Chemistry Undergraduate Research in Chemistry Regional Poster Competition (April 17, 2015).
- Member. University of Kentucky College of Arts & Sciences Advisory Committee on Cyberinfrastructure and Technological Advances in Research and Scholarship (2014-2017).
- Member. University of Kentucky Department of Chemistry Undergraduate Program Committee (2014-2018).

***Service Prior to Independent Career***

- Member. Northwestern University Task Force on Economic Development (2008-2009).
- Member. The University of Arizona Department of Chemistry Safety Committee (2002-2003).
- Member. The University of Arizona Department of Chemistry Graduate Recruiting/Admissions Committee (2001-2002).

**TEACHING/INSTRUCTION/STUDENT DEVELOPMENT:**

**Academic Courses Taught**

***Courses Taught during Independent Career***

Spring 2022	CHE 442G: Thermodynamics and Kinetics University of Kentucky
Spring 2021	CHE 580 Computing and Data Science in Chemistry University of Kentucky
Spring 2020	CHE 442G: Thermodynamics and Kinetics University of Kentucky
Fall 2019	CHE 536: Organic Materials: Electronic and Photonic Properties University of Kentucky
Spring 2019	CHE 580 Computing and Data Science in Chemistry University of Kentucky
Fall 2018	Fundamental Materials Design and Computational Research in Organic Electronics Tampere University of Technology (Finland)
Fall 2018	CHE 536: Organic Materials: Electronic and Photonic Properties University of Kentucky
Fall 2017	CHE 536: Organic Materials: Electronic and Photonic Properties University of Kentucky
Spring 2017	CHE 442G: Thermodynamics and Kinetics University of Kentucky
Fall 2016	CHE 776: Physical Chemistry Seminar University of Kentucky

Fall 2016 CHE 440G: Introduction to Physical Chemistry  
University of Kentucky

Spring 2016 CHE 107 General College Chemistry II  
University of Kentucky

Fall 2015 CHE 440G: Introduction to Physical Chemistry  
University of Kentucky

Spring 2015 CHE 776: Physical Chemistry Seminar  
University of Kentucky

Spring 2015 CHE 107 General College Chemistry II  
University of Kentucky

Fall 2014 CHE 107 General College Chemistry II  
University of Kentucky

### ***Courses Taught Prior to Independent Career***

Fall 2013 CHEM 6483 Chemistry of Organic Electronic Materials (Lecturer)  
Georgia Institute of Technology

Spring 2013 CHEM 2803-HP Bright and Smart: Organic Materials for Electronics and  
Photonics (Lecturer)  
Georgia Institute of Technology

Fall 2012 CHEM 6483 Chemistry of Organic Electronic Materials (Lecturer)  
Georgia Institute of Technology

Fall 2011 CHEM 6483 Chemistry of Organic Electronic Materials (Lecturer)  
Georgia Institute of Technology

Spring 2011 CHEM 2803-HP Bright and Smart: Organic Materials for Electronics and  
Photonics (Lecturer)  
Georgia Institute of Technology

Fall 2000-Spring 2001 CHEM104B Fundamental Techniques of Chemistry (Laboratory Instructor)  
The University of Arizona

Fall 2000-Spring 2001 CHEM103A/B, Fundamentals of Chemistry (Teaching Assistant)  
The University of Arizona

Fall 1995-Spring 1998 CH137(138) and CH140, General Chemistry I(II) and Quantitative Analysis  
(Laboratory Assistant)  
Baker University

### **Curriculum and/or Short Course Development**

#### ***Course Development during Independent Career***

- CHE 580 Computing and Data Science in Chemistry. University of Kentucky.  
This course-based [undergraduate] research experience (CURE) explores the application of scientific computing and data science in chemistry. Topics covered include entry level computer programming, data processing, statistics, and advanced data visualization using the Python platform, all within the context of chemical research. The course culminates in a data-driven, research-based inquiry that enables students to practice the knowledge gained, write research reports, and undertake the peer-review process.

- **Fundamental Materials Design and Computational Research in Organic Electronics.** Tampere University of Technology (TUT; Finland).  
Course developed and taught online with Dr. Terttu Hukka (TUT) with a focus on the design and development of organic electronic materials and the use of computational chemistry approaches to study these materials. Specifically, I developed and recorded lectures that were made available on the Moodle platform, held weekly, live video sessions with students to address questions related to the recorded lectures, and developed and refined computational chemistry laboratories that were taught locally by Dr. Hukka and her colleagues.
- **CHE 536 Organic Materials: Electronic and Photonic Properties.** University of Kentucky.  
As part of the Materials Chemistry emphasis Bachelor of Science degree in Chemistry, this course provides a foundational quantum-chemical description of the relationships among molecular structure and the solid-state arrangements of molecules and/or polymers with the electronic and optical properties of organic semiconducting materials. The materials characteristics that are described are then related to their use and performance across several technologies, including displays, lighting, transistors, energy conversion / storage applications, and non-linear optics.
- **Mathematics of Physical Chemistry Bootcamp.** University of Kentucky.  
Developed in collaboration with Dr. Peter Kekenes-Huskey, this two-morning bootcamp provides undergraduate and graduate students an introduction or refresher to a few key mathematical and numerical approaches encountered in courses and research related to physical chemistry. Each session, which is comprised of two lectures and hands-on tutorials, is motivated by an application in physical chemistry, with a review of the mathematical modeling and solutions necessary to explore the problems. The bootcamp has been presented in mid-August from 2015 to present.

### ***Course Development Prior to Independent Career***

- **CHEM 2803-HP Bright & Smart: Organic Materials for Electronics and Photonics.** Georgia Institute of Technology.  
Developed in collaboration with Dr. Jean-Luc Brédas, Dr. John S. Sears, and Dr. Massimo Malagoli, this course combines lectures on organic electronic materials with computational chemistry laboratory sessions. I developed two of four laboratory sessions during the initial course, and modified all four laboratories with Dr. Paul Winget during the second iteration of the course.

### **Teaching Development and Certificates**

- Attendee. 2015 Cottrell Scholars Collaborative (CSC) and American Chemical Society (ACS) New Faculty Workshop.
- Certificate. 2005-2006 Northwestern University Preparing Future Faculty (PFF) Program.

### **Individual Research Guidance & Development**

#### ***High School Students Supervised (2 total)***

Ally Watrous (2019-2020); Franklin Marrs (2019-2021); Sophia Mancini (2022-present)

#### ***Undergraduate Students Supervised (19 total)***

Corrine F. Elliot (2014-2017; co-advised with S.A. Odom); Tristan Finn (2015-2016); Maxwell Duff (2016); Kristen Brooks (2016-2017); Nicholas Telesz (2017-2019); Michael Heifner (2017-2018); Brandyn Thompson (2017-2018); Asare Nkansah (2017-2018); William Smith (2017-2018); Kate E. Fraser (2018); Camron De'vine (2018-2019; 2020-2021); Stephen Goodlett (2018-2020); Mitchell Stokan (2019); Jodie Canada (2019-2020); Hanna Suarez (2019-2021); Parker Sornberger (2020-present); Andrew Smith (2020-2022); Eesh Kulshrestha (2021); Corey Roberts (2021-present).

#### ***Graduate Students Supervised (14 total)***



Shi Li (2015-2020); Qianxiang [Alex] Ai (2015-2021); Edward Kirkbride Loya (2016-2019; MS-track); Chamikara Karunasena (2017-present); Walker Mask (2017-2019; MSc thesis); Josiah Roberts (2018-2021); Vinayak Bhat (2018-present); Keerthan Rao (2018-present); Uswaththa Liyanage Anton Perera (2018-present; co-advised with S.A. Odom); John C. Quinn (2019-2020; co-advised with E. Santillan-Jimenez); Rebekah Duke (2020-present); Kehinde Fagbohunge (2021-present); Moses Ogbaje (2021-present); Sashen A. Ruhunage (2021-present); Jordan Chelle (2021-present).

#### ***Postdoctoral Fellows Supervised (10 total)***

Adam Rigby (2015-2017); Karol Jarolimek (2015-2017); Karl J. Thorley (2016-2017; co-advised with J.E. Anthony); Sean M. Ryno (2016-2018); Uma Shantini Ramasamy (2018); Ying-Li Huang (2019-present); Joel Bombile (2020-present); Connor Callaway (2020-present); Siamak Mahmoudi (2021-present; co-advised with D. Eaton); Hussein Hijazi (2021-2022).

#### ***Graduate Degrees***

Josiah Roberts, PhD (2021)  
Qianxiang [Alex] Ai, PhD (2020)  
Shi Li, PhD (2020)  
Walker Mask, MSc Thesis (2019)

#### **Member on Graduate Student Committees**

Chemistry: Anthony Petty II (October 2018; PhD); Emma Holland (January 2017-July 2021; PhD); Samuel Mazza (January 2016-January 2018); Harsha Attanayake (May 2016-September 2020; PhD); Thilini Suduwella (January 2018-present; MSc); Garrett Fregoso (April 2018-present); Tuo Liu (April 2018-present); Charles Adeniran (May 2018-present); Nasir Uddin (January 2019-November 2021; PhD); Manisha De Alwis Goonatileke (January 2019-present); Dallas Bell (May 2019-September 2020; MSc); Harindi Atapattu (May 2019-present); Zachary Lawson; Tanner Smith (October 2019-present); Dean Windemuller (October 2019-present); Sharique Khan (October 2019-present); Rahul Jha (May 2020-August 2021); Michael Moore (January 2020-present); Alison Costello (January 2020-present); Kyle Baustert (September 2020-present); Chukwudalu Great Umenweke (May 2021-present); Michael Okeke (October 2021; MSc); Keemia Abad (November 2021-present); Reagan Patton (November 2021-present)

Physics: Nisheeta Desai (November 2016-April 2020; PhD); Barry Farmer (July 2020; PhD); Ashkan Abtahi (October 2020; PhD); Da Bi (November 2017-May 2022; PhD); Austin Nelsen (August 2021-present)

Materials Science and Engineering: Evan Hyde (March 2017-May 2020; PhD); Xiaowen Zhan (August 2016-October 2018; PhD); Aaron Liu (January 2020-present; student at Georgia Institute of Technology)

Mechanical Engineering: Raghava Davuluri (April 2018-present); Siamak Mahmoudi (April 2018-March 2021; PhD); Simon Schmitt (January 2019-October 2020; PhD)

Mining Engineering: Alind Chandra (November 2017-December 2019; PhD)

STEM Education: Tracy Gastineau-Stevens (May 2022-present)