Joseph J. Reczek

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Academic Positions and Education

Denison University, Department of Chemistry and Biochemistry, Granville, Ohio
Professor 2019 – present
Associate Professor 2014 – 2019
Assistant Professor 2008 – 2014

Trinity University, Department of Chemistry, San Antonio, Texas 2006 – 2008
Postdoctoral Associate, Principle Investigator: Adam R. Urbach

The University of Texas at Austin, Austin, Texas 2001 – 2006
Ph.D. in Organic Chemistry
Advisor: Brent L. Iverson, Professor
Dissertation: *"Aromatic Electron Donor-Acceptor Interactions in Novel Supramolecular Assemblies"*

Cornell University, Ithaca, New York 1997 – 2001
BA. in Chemistry, *Cum Laude,*
Research Advisor: Geoffrey W. Coates, Professor
Research interests: Catalyst design and polymer synthesis

Publications and Patents

(undergraduate co-authors are underlined; *denotes corresponding author)

Madeline Van Winkle, Harper Wallace, Niquana Smith, Andrew T. Pomerene, Michael G. Wood, Bryan Kaehr, **Joseph J. Reczek*** "Orientation-Dependent Rewritable Optical Information Coding and Encryption in Tunable Organic Materials" *Scientific Reports* **2020**, *10*, 15352.

Molly Macinnes, Ben Cousineau, Sarah Youngs, **Joseph J. Reczek,*** Stephen Maldonado* "Discovery of Unusually Stable Reduced Viologen via Synergistic Folding and Encapsulation" *J. Electrochem. Soc.* **2019** *166,* H825-H834

Madeline Van Winkle, David A. Scrymgeour, Bryan Kaehr*, and **Joseph J. Reczek***, "*Laser rewritable dichroics through reconfigurable organic charge-transfer liquid crystals*" *Advanced Materials* **2018**, 30, 1706787. Selected for **front cover** of the May 17, 2018 issue.

Reczek, J. J.*, Naphthalenediimide in Modular Columnar Liquid Crystals: Key Component of Donor-Acceptor Columnar Liquid Crystals. in *Naphthalenediimide and its Congeners: From Molecules to Materials.*, 1; Pantos, Dan., Eds; Royal Society of Chemistry: Bath, UK, **2017**, 90-113.

Ariana Gray Bé, Cheryl Tran, Riley Sechrist, and **Joseph J. Reczek***, "Strongly dichroic organic films via controlled assembly of modular aromatic charge-transfer liquid crystals" *Org. Lett.* **2015**, *17*, 4834-4837.

Annelise C. Thompson, Haley M. Grimm, Ariana Gray Bé, Keenan J. McKnight, and **Joseph J. Reczek***, "Efficient bromination of naphthalene dianhydride and microwave assisted synthesis of core-brominated naphthalene diimides" *Synth. Commun.* **2015**, *45*, 1127-1136.

Leight, Katie R.; Esarey, Brooke E.; Murray, Alex E.; **Reczek, Joseph J.*** "Modular and Predictable Tuning of Absorption Properties in Aromatic Donor-Acceptor Materials" *Chem. Mater.* **2012,** *24*, 3318-3328. Selected in 2016 for inclusion in a virtual issue on the state-of-the-art in Materials Genomics: http://pubs.acs.org/page/vi/materials-genomics.html

Alvey, Paul M.; **Reczek, Joseph J**.; Lynch, Vincent; Iverson, Brent L. "A Systematic Study of Thermochromic Aromatic Donor-Acceptor Materials" *J. Org. Chem*. **2010**, *75,* 7682-7690.

Patents

Joseph J. Reczek, Bryan Kaehr, Maddie Van Winkle, and Harper Wallace "Polarization-Based Coding/Encryption Using Organic Charge-Transfer Materials"; US Appln. No.17/154,220, Filing date: **02/2021**

Joseph J. Reczek and Bryan Kaehr "Optically configurable charge-transfer materials and methods thereof" Submitting reference US Appln. No.16/200,413, Filing date: **11/2018**

Bauer, Charles Leo; Shaw-Klein, Lori; **Reczek, Joseph** "Method for providing a high viscosity coating on a moving web for imaging and printing media" US 6,419,987 B1, **2002.**

Research Leadership - External Grants (funded)

total external funding since 2010 exceeds $1.1 million

National Science Foundation, "RUI: Developing Organic Charge-Transfer Liquid Crystals: Towards Modular Control of Functional Properties in Laser Re-Writable Organic Medium" PI: Reczek, $174,077, **funded** 8/19 – 7/23.

National Science Foundation, "MRI: Acquisition of a scanning electron microscope with integrated EDS, WDS, and STEM for enhancement of multi-disciplinary undergraduate research and research training" Co-PI: Reczek, $398,000, **funded** 8/19 – 7/21.

National Science Foundation, "MRI: Acquisition of a powder X-ray diffractometer to enhance research at a primarily undergraduate institution" PI: Reczek, $105,300 **funded** 8/15 – 7/16.

National Science Foundation, "RUI: Developing Organic Photoconductive Materials through Modular Design of Self-Assembling Components" PI: Reczek $200,000, **funded** 8/12 - 7/16

Petroleum Research Fund, "Aromatic donor-acceptor organocatalysis: noncovalent activation of aryl halides in green palladium cross-coupling reactions" $65,000, **funded** 1/13 - 8/18

Special Grant Program in the Chemical Sciences, The Camille and Henry Dreyfus Foundation, "Inspiring the Future: A Cooperative Approach to Increasing Regional Education, Exploration, and Opportunities with the Chemistry of Energy" $34,000, **funded** 6/11 – 6/13

Lindbergh Grant, The Lindbergh Foundation, "Developing Liquid Crystal Solar Cells to Promote Clean, Efficient, and Affordable Energy" $10,580, **funded** 7/10 - 8/11

Cottrell College Science Award, Research Corporation, "Development of Modular Organic Columnar Liquid Crystals as Robust Sensitizers in Low-Cost Solar Cells" $41,682, **funded** 1/10 - 12/11

Leadership and Professionalism: Synergistic Activities

Sigma Xi
- Associate Director, Baccalaureate Division 2021-2022

Council on Undergraduate Research
- Elected Councilor, Chemistry Division; 2015 – 2018, 2019 – 2022
- Goldwater Faculty award selection committee; 2019 – present

Governance Positions at Denison University
- Campus Sustainability Committee; 2019 – 2022, Chair 2019 – present
- Liberal Arts Engineering Program Committee; 2014 – 2017
- Academic Affairs Council; 2011 – 2013; Vice Chair 2011-2012

The Works Museum, Newark, OH (http://www.attheworks.org)
- STEM advisory board 2011– present
- Sponsor and mentor of annual STEMfest! competition 2010 – present
- Founding member and annual organizer of KidsTech University 2013 – present
- General STEM programing and outreach 2009 – present

Commitment to Diversity and Inclusiveness

Inclusion in Undergraduate Research (Organic Chemistry/Materials Chemistry): I have intentionally supported and reached out to traditionally underrepresented groups in the chemical sciences to foster representation among my undergraduate researchers. The rate of inclusion in my research group significantly surpasses the base rates of these groups among majors in the Department of Chemistry and Biochemistry at Denison:

59% of Student Researches woman (42 of 71)
(Department majors average 51% women; 2010 – 2020)

26% of Student Researches identify as Black, Hispanic/Latinix, or Pacific Islander (19 of 71)
(Department majors average 12% from these groups; 2010 – 2020)

Reediness and Inclusions in Science Education (RAISE) – Denison University Program

Founding member of the RAISE program 2017

Funding acquired: Arthur Vining Davis Foundation, "Inclusive Classrooms in the Sciences and Beyond: Denison University"; Co-PI: Reczek, $276,895, **funded** 8/19 – 7/22

RAISE Program Advisory Board 2017 – present

Sponsor and Director of the "Pathways" Series 2018 – present

Denison Speaker Series devoted to informal conversations with professional scientists that identify with a traditionally underrepresented group in the sciences.

Mentoring

A critical consideration in the design and execution of *all* my research is that it fully engage undergraduate researchers; I am a passionate advocate for providing this opportunity to as many students at the **Baccalaureate Level** as possible. I strive to mentor a cohort of students involved together in collaborative research, including freshmen and sophomores early in their academic career who can persist in research to mentor new upcoming students. Since 2008, I have mentored a total of **71** students in research since beginning my independent career at Denison, including **42 women and 19 students who identify as an underrepresented group in the chemical sciences** (this includes Black, Hispanic/Latinix, and Pacific Islander). 38 of these students have engaged in full-time summer research in my group, and of this group 12 have gone on to medical professions, and 23 have entered top graduate programs including at Berkeley, UVA, UNC, UT Austin, UC Boulder, Northwestern, Michigan, and Cal Tech.

National Awards Received by Reczek Group Undergraduates:

NSF Graduate Research Fellowship Program (GRFP)	7 awardees, 2 Honorable Mentions
Fulbright Program (Research)	3 awardees, 1 Honorable Mention
Goldwater Scholars	1 awardee, 3 Honorable Mentions
NIH F31 Grant	1 awardee

Over 65 student presentations at National American Chemical Society meetings

Undergraduate Senior Theses Mentored at Denison:

Mitchell Legg ‘10	Peter Rudd '17
Alex Murray ‘10	Jarrett Dillenburger '17
Brooke Esarey ‘11	Niquana Smith '18
Katie Leight ‘11	Madeline Stern '18
Kevin Rodda ‘11	Madeline Van Winkle '18
Sam Wolock ’12	Ben Cousinou ‘19
Keenan McKnight ‘12	Jessica Zeng ‘19
Adam Murray ‘13	Harper (Hoke) Wallace ‘20
Annelise Thompson ‘13	Gaby Pleitez-Gomez ’20
Haley Grimm ‘14	Nicole Wetoska ’20
Ariana Gray Be ‘15	Matthew Kelsey ‘21
Riley Sechrist ’15	Tori Sauve ‘21
Loryn Holokai ‘16	Heaven Wade ‘21
David Allen ‘16	Byunghoon Lee ‘21
Michelle Hill '17	

Major Awards, Fellowships, Invited Lectureships, and Honors

R.C. Good Fellowship Award: 2021, Denison University

“Towards tunable organic light-harvesting materials: Iterative photoelectric characterization of new donor-acceptor columnar liquid crystals”

Highly competitive funded semester release to peruse research/scholarship

“Dr. Joe Persistent Scientist Award” 2014 – present, The Works

Namesake honoree of the annual award given at the StemFest competition at The Works Museum, Newark OH.

R.C. Good Fellowship Award 2014, Denison University

“Developing dual-mode alignment of organic donor-acceptor columnar liquid crystals”

Highly competitive funded semester release to peruse research/scholarship

Major Career Contributions and Legacy

Established predictable, modular control over dichroic organic charge-transfer materials.

Development of a non-contact method for the micron-scale control of organic charge-transfer materials.

Advocate and practitioner of Excellence *and* Inclusion of undergraduates in high-quality research at a Baccalaureate Institution.

Life-time STEM learning and outreach partner and inspiration for the annual STEM-based "Persistent Scientist Award" award at The Works Museum, Newark OH.

Average of 2 students/year matriculate from the Reczek Group at Denison to a top Graduate program.

More to come…