

# Christie L.C. Ellis



- Innovative and well-rounded communicator
- Self-starter who thrives on new ideas
- Emotionally intelligent leader and mentor
- Interdisciplinary scientist with boundless curiosity
- Energy industry specialist
- Creative, non-linear problem-solver
- Advocate for positive social change

## ORISE SCIENCE AND TECHNOLOGY POLICY FELLOWSHIP

### U.S. Department of Energy (DOE) Solar Energy Technologies Office (SETO)

Sponsored by the Oak Ridge Institute for Science and Education (ORISE)

Jan 2020 - Present

- Increase public understanding of solar power through solar basics information, editorial content, webinars, and other external engagement
- Drive leadership communication strategy and messaging
- Redesign SETO website navigation and create new website content
- Reshape SETO social media and stakeholder engagement strategy
- Coordinate internal improvement, including training and data management
- Create strategies to increase the diversity of SETO funding applicants
- Teach SETO-funded scientists effective communication strategies

## AAAS MASS MEDIA FELLOWSHIP

### St. Louis Post-Dispatch Newspaper

Sponsored by the American Academy for the Advancement of Science (AAAS)

St. Louis, MO, Summer 2018

- Write articles on science-related news in the St. Louis area, including research, policy, business, outreach, and public health and safety
- Actively seek diverse subjects and sources to increase representation of marginalized groups in media
- Connect with St. Louis community through in-person interviews and social media


## DOCTORAL RESEARCH


### Advanced Laboratory for Iontronics, Electronics, and Nanomaterials (ALIEN)

Advisor: Professor Dhandapani Venkataraman

UMass Amherst, June 2014 - present

- Advance fundamental understanding and commercial potential of a promising new solar cell material called perovskites
  - Discover how perovskite solar cells degrade
  - Examine how environmental factors such as light, heat, humidity, and applied bias affect their degradation
  - Synthesize new, more stable perovskite derivatives
- Design parameters to evaluate different solar cell technologies for integration into energy-efficient buildings
- Create environmentally friendly methods for synthesizing organic solar cells

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 www.christielcellis.com

 @solarpowerqueen

## EDUCATION

### PhD Materials Chemistry

University of Massachusetts Amherst

2014-2019

### BS Chemistry, University Honors

Carnegie Mellon University

2010-2014

### Graduate Certificate, Strategic Management\*

Harvard University

2020-2021 \*Expected

## EQUITY AND DIVERSITY

I am committed to principles of diversity, equity, and inclusion (DEI), and to this end have worked on:

- Recruitment and retention of women in STEM
- Sexual harassment prevention strategies and resources
- Improving Title IX reporting processes
- Developing DEI trainings and workshops
- Graduate student mental health awareness
- Grassroots organizing

## AWARDS

### College of Natural Sciences

Excellence in Diversity & Inclusion

UMass Amherst

2018

### Business Foundations Series for Scientists and Engineers Certificate

UMass Amherst

2016

### McEwen Fellowship Award for Outstanding Poster

UMass Amherst

2015

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## LEADERSHIP ROLES

- 2020 - Present Co-Chair, Diversity, Equity and Inclusion Working Group, Solar Energy Technologies Office (SETO)
- 2020 - Present Coordinator, SETO Solar Colloquium Speaker Series
- 2015 - 2019 Communications Chair, Graduate Women in STEM at UMass (GWIS)
- 2015 - 2019 Editor-in-Chief, GWIS Quarterly Magazine
- 2016 - 2019 #SafeAtWork Campaign Chair, GWIS
- 2017 - 2019 Chemistry Department Equity and Diversity Committee, UMass
- 2017 - 2018 Chancellor's Task Force on Sexual Violence in STEM, UMass
- 2018 Spring Panelist, "Movement Building in the #MeToo Era"
- 2018 Spring Panelist, "Sexual Violence in the Workplace"
- 2015 - 2017 UMass University Title IX Education Subcommittee
- 2015 - 2017 Co-President and Treasurer, Association for Professional Development in Chemistry, UMass

## TEACHING EXPERIENCE

Lead large group lectures and small group tutoring sessions, create assignments and exams, run hands-on laboratory training, teach non-chemistry and non-science students, teach graduate-level courses

- 2018 Fall Organic Chemistry I for Non-Majors, UMass Amherst
- 2017 - 2018 General Chemistry Laboratory, UMass Amherst
- 2014 -2016 Organic Chemistry Laboratory, UMass Amherst
- 2015 Fall Advanced Organic Chemistry, UMass Amherst
- 2013 - 2014 Phage Genomics Laboratory, Carnegie Mellon University
- 2012 Spring Introduction to Experimental Chemistry for Non-Science Majors, Carnegie Mellon University

## PREVIOUS RESEARCH

### Noonan Laboratory, Carnegie Mellon University

Pittsburgh, PA, 2013-2014

Synthesize new electron-transporting polymers for organic solar cells

### Vertex Pharmaceuticals

Boston, MA, 2013 Summer

Develop imaging techniques to model how pharmaceutical tablets dissolve

### Washburn Laboratory, Carnegie Mellon University

Pittsburgh, PA, 2012-2013

Design water purification systems using new oxidation catalysts

### Dow AgroSciences

Indianapolis, IN, 2012 Summer

Develop quantitative, non-invasive methods to identify patented products on crop surfaces

## SKILLS

- Plain language writing and editing
- Technical writing and editing
- Leadership presentations and talking points
- Google Analytics
- Website Content Management Systems (Drupal, WordPress)
- Website usability and accessibility
- Social Media Management (Twitter, LinkedIn, Facebook, Instagram)
- Microsoft Office suite
- Data analytics and programming (Python, R, and Mathematica)
- Workshop and training development and facilitation
- Webinar hosting
- Event planning and logistics
- Data analysis
- Policy analysis
- Environmental economics
- Public speaking and presentation
- Mentoring
- Teaching
- Social justice training
- Project and team management

## REFERENCES

### Susanna Murley

#### Strategic Support Team Lead

U.S. Department of Energy  
Solar Energy Technologies Office  
202-287-1637

susanna.murley@ee.doe.gov

### Dhandapani Venkataraman

#### Professor of Chemistry

UMass Amherst  
413-545-2028  
dv@umass.edu

### Lisa Brown

#### Communications Officer

National Geospatial Intelligence Agency  
314-322-5185

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## PUBLIC SCIENTIFIC COMMUNICATION

### AAAS Mass Media Fellowship at St. Louis Post-Dispatch

St. Louis, MO, Summer 2018

- Disabled Adults' Employment Increased After States Expanded Medicaid, Study Shows
- Silicon Valley After-School Program Expands Coding Skills Training for Kids to St. Louis Area
- On the Job: Q&A with Johanna Foege, Total Quality Manager at Perennial Artisan Ales
- How a Camera that Sees Like a Shrimp Could Save Baseball Pitchers Months of Recovery Time
- Teachers Learn How to Spark Early Interest in STEM Careers
- St. Louis Botanists' Travels to Central Asia Could Reap Benefits for US Fruit Crops
- Washington U Lands Grant to Study Childhood Obesity as Parents Grapple with Treatment Costs
- Public Housing Will Go Smoke-Free by the End of the Month, Even in Private Spaces
- New Residency Program Providing Mental Health Care for Spanish-Speaking Missourians
- BioSTL Seeks to Close the "Awareness Gap" by Bringing Global Health Care Entrepreneurs to St. Louis
- Navvis Gives \$2M to Establish Population Health Professorship
- Hot Hot Heat: Brace Yourself for Temps in the High 90s This Weekend, St. Louis

### Editor-in-Chief, Graduate Women in STEM Quarterly Magazine

UMass Amherst, 2015-2019

- Letter from the Editor: The Fierce Urgency of Now
- Letter from the Editor: See Us Again, For the First Time
- Straight-Cis-White-Male™
- My Time is Worth Less Than Yours
- Escaping Expectations, Creating Aspirations

### Freelance, JACS Spotlights for the Journal of the American Chemical Society

Journal of the American Chemical Society, 2019

- Cadmium Brings Novel Properties to Noble Metal Nanoclusters
- Ligands Take an Active Role in Tuning Thermoelectric Nanocrystals
- Paddle-Wheel Ion Pushes Sodium Conductivity to New Heights
- New Carbon Coordination Mode Mimics Metal Complexes
- Solving the Structure of Earth's Hidden Oceans
- Switching Solvents Controls the Size of Aluminum Nanoparticles

## TECHNICAL SCIENTIFIC COMMUNICATION

### PEER-REVIEWED JOURNAL ARTICLES

Hybrid Perovskites with Larger Organic Cations Reveal Autocatalytic Degradation Kinetics and Increased Stability under Light

- **Ellis, C.L.C.**, Javaid, H., Smith, E.C., Venkataraman, D. *Inorg Chem* 2020, 59 (17), 12176-12186.

Light Intensity Modulated Ion Transport in p-i-n MAPb(I<sub>1-x</sub>Br<sub>x</sub>)<sub>3</sub> Perovskite Solar Cells

- Javaid, H., **Ellis, C.L.C.**, Smith, E.C., Liu, Y., Venkataraman, D.; *Chem Phys Chem* 2020, Under Review.

The Use of Ion-Selective Membranes to Study Cation Transport in Hybrid Organic-Inorganic Perovskites

- Smith, E.C., **Ellis, C.L.C.**, Javaid, H., Arden, B.G., Venkataraman, D.; *Phys Chem Chem Phys*, 2019, 21, 20720-20726.

Interplay Between Ion Transport, Applied Bias, and Degradation under Illumination in Hybrid Perovskite p-i-n Devices

- **Ellis, C.L.C.**, Smith, E.C., Javaid, H., Renna, L., Liu, Y., Russell, T.P., Bag, M., Venkataraman, D.; *J Phys Chem C* 2018, 122 (25), 13986-13994.

Indoor Light Recycling: A New Home for Organic Photovoltaics

- **Cutting, C.L. (\*)**; Bag, M.; Venkataraman, D.; *J Mater Chem C* 2016, 4, 10367-10370. (\*Cutting is my maiden name)

### BOOK CHAPTERS

Ion Migration in Hybrid Perovskites: Evolving Understanding of a Dynamic Phenomenon

- **Ellis, C.L.C.**, Smith, E.C., Javaid, H., Berns, G., Venkataraman, D.; "Perovskite Photovoltaics: Basics to Advanced Concepts and Implementation." Elsevier, 1st ed, 2018, 163-196.

### PATENTS

Organic Photovoltaic Devices and Methods Thereof

- Venkataraman, D., Bag, M., Gehan, T.S., **Cutting, C.L.**; 2015, PCT International Application No. PCT/US15/27436.

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## SCIENCE COMMUNICATION AND OUTREACH

- 2020**            **Coordinator, Solar Energy Technologies Office (SETO) Solar Colloquium Speaker Series**
- Plan weekly speaker series inviting renewable energy professionals from all sectors to discuss their work and build collaborations with SETO employees
- 2018 Summer**    **Mass Media Fellowship at St. Louis Post-Dispatch Newspaper**
- Write articles on science-related news in the St. Louis area, actively seek diverse subjects and sources to increase representation of marginalized groups in media; connect with St. Louis community in person and through social media
- 2015 - 2019**      **Communications Chair and GQM Editor-in-Chief, Graduate Women in STEM (GWIS), UMass Amherst**
- Direct vision of GWIS Quarterly Magazine (GQM), a publication examining academic culture and the experiences of women in STEM, write and edit articles, create graphics, manage GWIS social media, plan workshops and seminars
- 2015 - 2017**      **Co-President and Treasurer, Association for Professional Development in Chemistry, UMass Amherst**
- Organize day-long research symposium; manage \$10,000+ event budget and purchase orders, secure corporate sponsorship for events, coordinate panelists, speakers, and judges, organize monthly professional development talks
- 2015 Summer**    **Girls, Inc. Eureka! Program Workshop Lead, UMass Amherst**
- Plan and lead interactive workshop on solar cells for middle school girls from local underserved school districts, connect to broader importance of renewable energy and basic scientific research

## SCIENCE POLICY AND ADVOCACY

- 2020**            **Co-Chair, Diversity, Equity, and Inclusion Working Group, Solar Energy Technologies Office**
- *Start minority serving institution outreach program, create and facilitate unconscious bias trainings for coworkers, track diversity and inclusion metrics, incorporate diversity, equity, and inclusion principles into funding programs*
- 2016 - 2019**      **#SafeAtWork Campaign Chair, Graduate Women in STEM (GWIS), UMass Amherst**
- Launch campaign combatting sexual misconduct in STEM graduate programs; lobby university administration for policy changes and resources, amplify voices of graduate women, host Town Halls to connect students and administrators, create and facilitate workshops
- 2017 - 2018**      **Chancellor's Task Force on Sexual Violence in STEM, UMass Amherst**
- Collaborate with UMass administrators to propose major revisions to UMass sexual harassment policies on prevention, education, reporting, and hiring
- 2017 - 2018**      **Chemistry Department Equity and Diversity Committee, UMass Amherst**
- Conduct listening sessions to determine problem areas, plan events to foster an inclusive culture, write and publish the "Reaction Times", a biannual newsletter celebrating underrepresented groups in the department
- 2018 Spring**      **Panelist, "Movement Building in the #MeToo Era", Greenfield Community College**
- Share expertise on building and sustaining grassroots movements to combat sexual violence in the wake of the #MeToo movement, how to make women's movements inclusive, and how to engage community members
- 2018 Spring**      **Panelist, "Sexual Violence in the Workplace", UMass Amherst**
- Share personal experiences and larger context of sexual violence in STEM fields for undergraduate engineering students, discuss concrete strategies to combat sexual harassment, explain the reporting process
- 2015 - 2017**      **University Title IX Education Subcommittee, UMass Amherst**
- Collaborate with university offices to raise awareness of Title IX rights and resources on campus; lead initiative to create an interactive resources to help students navigate the Title IX reporting process