EMILY A. SPRAGUE-KLEIN

Phone: (401) 863-3586, *Email*: emily_sprague-klein@brown.edu
Address: 324 Brook Street, Providence, RI 02912 USA

ACADEMIC APPOINTMENTS

Brown University
Department of Chemistry
Assistant Professor, Physical Chemistry — July 2022
Other synergistic campus affiliations:
Affiliate Faculty, Initiative For Sustainable Energy, Feb 2023 (Executive Board, 2026)
Affiliate Faculty, Initiative For Native American and Indigenous Studies, Feb 2023 (Steering Committee, 2025)

Northwestern University/Argonne National Laboratory — 2019 - 2022
Division of Chemical Sciences & Engineering
Postdoctoral Appointee, Solar Energy Conversion Group
Advisors: Prof. Lin X. Chen and Dr. David M. Tiede

EDUCATION

Northwestern University, Ph.D. Applied Physics — 2018
Advisors: Prof. Richard Van Duyne, Prof. George C. Schatz
Dissertation topic: Single Particle Surface-enhanced Pump-Probe Raman Spectroscopy for the Direct Observation of Plasmon-Driven Chemistry

Kellogg School of Management, Northwestern University — 2016
Management for Scientists and Engineers, Graduate Certificate

University of Illinois at Urbana-Champaign, B.S. Engineering Physics — 2012
Advisors: Prof. Alexey Bezryadin and Prof. Aaron Lindenberg

HONORS & AWARDS

2025 Early Career Board, *Nano Letters*
2025 Mellon Sawyer Seminar Keynote Lecture, Water quality of the Blackstone River
2025 Library of Congress-U. Delaware Honorarium, Pedagogy of Indigenous Knowledge in the Sciences
2024 *Nanoscale* Emerging Investigators Award, RSC
2024 *Physical Chemistry Chemical Physics* Emerging Investigators Award, RSC
2021 Emerging Materials Award, Department of Energy
2014 - 2017 National Science Foundation Graduate Research Fellowship, National Science Foundation
2014 National Defense Science & Engineering Graduate Fellowship, Department of Defense
2012 Ryan Fellowship, Northwestern University
2012 Laura B. Eisenstein Award, Department of Physics, University of Illinois at Urbana-Champaign
2011 Excellence in Physics Award, Department of Physics, University of Illinois at Urbana-Champaign
2008 - 2012 James Scholar, University of Illinois at Urbana-Champaign
2008 - 2012 Dean's List, University of Illinois at Urbana-Champaign,
2010 - 2010 SULI researcher, Stanford Linear Accelerator Laboratory, Menlo Park , California
2009 - 2009 SULI researcher, Lawrence-Berkeley National Laboratory, Berkeley, California
2009 - 2010 National Finalist in the Science & Energy Research Challenge, Department of Energy
2007 National Merit Scholar, National Merit Scholarship Corporation
2007 Early College Scholars Program, Washington University in St. Louis

PEER-REVIEWED RESEARCH ARTICLES

[IF =4.8] N. Warren, E. Donahue, U. Yunusa, A. Pattammattel, B. Ma, **E. Sprague-Klein***, "Temperature Dependent Characterization of Nanoscale Copper-Carbon Interface," *Materials Advances*, 2025, 6, 9427-9436. *New Principal Investigators: A Spotlight on Recent Appointees, 2025 Materials Advances Most Popular Articles, Popular Advances and Materials Advances Covers.*

[IF = 2.8] L. Gimeno, **E. A. Sprague-Klein**, B.T. Phelan, T.N. Haddock, N. Oppé, M. Beyler, C. David, E. Blat, E. Levillain, O. Aleveque, C. Gourlaouen*, L. X. Chen*, Y. Pellegrin*, "Encumbering the copper(I)-diimine coordination sphere with a benzyl group: impact on the stability and photoredox properties," *Journal of Physical Chemistry A*, 2026, 130, 4, 879–889.

[IF = 6.58] E. Donahue, T. Malina, E. Smith, J. Psencik, **E. Sprague-Klein***, "Photophysics of Artificial Light-Harvesting Nanoantenna," *Communications Chemistry*, 2025, 8, 263.

[IF = 3.676] P. Srivastava, N. Warren, A. Willemsen, A. Pattammattel, **E. Sprague-Klein***, "Plasmon Dynamics Driven by Aggregation of Tris(2,2′bipyridine)ruthenium(II)-Functionalized Gold Nanoparticles Probed by XANES and Transient Absorption Spectroscopy," *Journal of Physical Chemistry C,* 2025, 129 (29), 13337-13348. Naomi Halas and Peter Nordlander Festschrift. *Featured as the Back Cover Article.*

[IF = 3.133] N. Warren, A. Saul, K. Orme, E. Donahue, P. Srivastava, Z. Gong‖, B. McDonald, **E. Sprague-Klein***, "Investigating Biomimetic Chemoresponsive Cation-pi Interactions Using Raman Spectroscopy," *Journal of Raman Spectroscopy,* 2025, 56 (9), 808–816.

[IF = 5.3] J. M. Hoffman, T. N. Haddock, M. W. Mara, B. T. Phelan, Z. J. Mast, E. H. Oriel, B. Guzelturk, J. Yu, C. Liu, R. D. Schaller, **E. A. Sprague-Klein**, G. C. Schatz, A. B.F. Martinson, X. Zhang, D. M. Tiede, L. X. Chen*, "X-ray Transient Absorption Spectroscopy Reveals Light Responses of Cobalt Centers in Co-Pi OER Catalytical Devices under Electrochemical Biases," *Energy & Fuels* 2025, 39, 13, 6703–6707.

[IF = 3.9] C. Shi, S.-H. Kim, N. Warren, N. Guo, X. Zhang, Y. Wang, A. Willemsen, C. López-Pernía, Y. Liu, A. Kingon, H. Yan, Y. Zheng, M. Chen*, **E. Sprague-Klein***, B. Sheldon*, "A Hierarchically Micro- and Nano-structured Polymer via Crystallinity Alteration for Sustainable Environmental Cooling," *Langmuir*, 2024, 40, 38, 20195–20203.

[IF = 3.3] D. G. Schauer‖, J. Bredehoeft, U. Yunusa, A. Pattammattel, H. J. Wörner, **E. A. Sprague-Klein***. "Targeted synthesis of gold nanorods and characterization of their tailored surface properties using optical and X-ray spectroscopy," *Phys. Chem. Chem. Phys.*, 2024, 26, 25581-25589. *PCCP 2023 Emerging Investigators.*

[IF = 29.7] N. Guo, C. Shi*, N. Warren, **E. A. Sprague-Klein**, B. W. Sheldon, M. Chen*, "Challenges and Opportunities for Passive Thermoregulation," *Advanced Energy Materials*, 2024, 2401776.

[IF = 4.40] N. Warren, U. Yunusa, A. Singhal‖, **E. Sprague-Klein***, "Facilitating Excited-State Plasmonics and Photochemical Reaction Dynamics," *Chemical Physics Reviews*, 2024, 5, 011307. *Editorial Board Featured Article.*

[IF = 8.31] U. Yunusa, N. Warren, D. Schauer, P. Srivastava, **E. Sprague-Klein***, "Plasmon resonance dynamics and enhancement effects in Tris(bipyridine)ruthenium(II) gold nanosphere oligomers," *Nanoscale*, 2024, 16, 5601-5612. *Nanoscale and Nanoscale Horizons: Surface Enhanced Raman Spectroscopy* and *Nanoscale 2024 Emerging Investigators*.

[IF = 5.44] A. M. Potocny, B. T. Phelan, **E. A. Sprague-Klein**, M. W. Mara, D. M. Tiede, Lin X. Chen, K. L. Mulfort*. "Harnessing Intermolecular Interactions to Promote Long-Lived Photoinduced Charge Separation from Copper Phenanthroline Chromophores," *Inorganic Chemistry*, 2022, 61, 48, 19119-19133.

[IF = 3.70] R. B. Weerasooriya, M. C. Drummer, B. T. Phelan, J. L. Gesiorski, **E. A. Sprague-Klein**, L. X. Chen, K. D. Glusac*. "Towards Metal-free Photocatalysis: Photochemical Regeneration of Organic Hydride Donors Using Phenazine-based Photosensitizers," *Journal of Physical Chemistry C*, 2022, 126, 42, 17816-17825.

[IF = 22.0] **E. A. Sprague-Klein***, X. He, M. W. Mara, B. J. Reinhart, S. Lee, L. M. Utschig, K. L. Mulfort, L. X. Chen*, D. M. Tiede*. "Photo-Electrochemical Effect in the Water Oxidation Catalyst Cobalt-Phosphate (CoPi)," *ACS Energy Letters*, 2022, 7, 9, 3129-3138.

[IF = 5.44] L. Gimeno, B. Phelan, **E.A. Sprague-Klein**, T. Roisnel, E. Blart, C. Gourlaouen*, L.X. Chen*, Y. Pellegrin*. "A very bulky and stable copper(I)-phenanthroline complex: impact of steric strain and symmetry on the excited state properties," *Inorganic Chemistry*, 2022, 61, 19, 7296–7307.

[IF = 3.70] **E. A. Sprague-Klein**, R. Ho-Wu, D. Nguyen, S. C. Coste, Y. Wu, T. Seideman, G. C. Schatz*, R. P. Van Duyne, "Modulating the Electron Affinity of Polypyridine Molecules on Single Gold Nanoparticles for Plasmon-Driven Electron Transfer," *Journal of Physical Chemistry C*, 2021, 125, 40, 22142-22153. *Featured in the Marie-Paule Pileni Festschrift Special Edition*

[IF = 4.65] B. V. Kramer, B. T. Phelan, **E. A. Sprague-Klein**, B. T. Diroll, S. Lee, K. Otake, R. Palmer, M. W. Mara, O. K. Farha, J. T. Hupp*, L. X. Chen*, "Single-Atom Metal Oxide Sites as Traps for Charge Separation in nano Zr-MOF NDC-NU-1000," *ACS Energy & Fuels*, 2021, 35, 23, 19081–19095.

[IF = 10.5] A. R. Bielinski, **E. A. Sprague-Klein**, B. T. Phelan, A. B. F. Martinson*, "Pyroelectric Heat Detection for Calibrated Measurement of Atomic Layer Deposition Reaction Heat," *Chemistry of Materials*, 2021, 33, 6176-6185.

[IF = 4.9] M. S. Eberhart, B. T. Phelan, J. Niklas, **E. A. Sprague-Klein**, D. M. Kaphan, D. J. Gosztola, L. X. Chen, D. M. Tiede, O. G. Poluektov, K. L. Mulfort*, "Surface immobilized copper(I)diimine photosensitizers as molecular probes for elucidating the effects of confinement at interfaces for solar energy conversion," *Chemical Communications*, 2020, 56, 12130-12133. *Featured as the journal's back cover article*

[IF = 15.0] **E. A. Sprague-Klein**, B. Negru, L. R. Madison, S. C. Coste, B. K. Rugg, A. M. Felts‖, M. O. McAnally, M. Banik, V. A. Apkarian, M. R. Wasielewski, M. A. Ratner, T. Seideman, G. C. Schatz, R. P. Van Duyne*, "Photoinduced Plasmon-Driven Chemistry in trans-1,2-Bis(4-pyridyl)ethylene Gold Nanosphere Oligomers," *Journal of the American Chemical Society*, 2018, 140, 10583-10592.

[IF = 3.70] B. Negru, M. O. McAnally, H. E. Mayhew, T. W. Ueltschi, L. Peng, **E. A. Sprague-Klein**, G. C. Schatz, and R. P. Van Duyne*, "Fabrication of Gold Nanosphere Oligomers for Surface-Enhanced Femtosecond Stimulated Raman Spectroscopy," *Journal of Physical Chemistry C*, 2017, 121, 27004-27008.

[IF = 15.0] **E. A. Sprague-Klein**, M. O. McAnally, D. V. Zhdanov, A. B. Zrimsek, V. A. Apkarian, T. Seideman, G. C. Schatz, and R. P. Van Duyne*, "Observation of Single Molecule Plasmon-Driven Electron Transfer in Isotopically Edited 4,4'-Bipyridine Gold Nanosphere Oligomers," *Journal of the American Chemical Society*, 2017, 139, 15212-15221. *Highlighted in ACS Nano "Present and future of surface-enhanced Raman scattering"* and *in ACS Energy Letters "Plasmons for Energy Conversion"*

* *denotes corresponding author* ‖ *denotes undergraduate coauthor*
IF: *impact factor*

ARTICLES IN PREPARATION (DATA COLLECTED, MANUSCRIPT WRITTEN)

U. Yunusa, Y. Yun, Z. Gong, A. Willemsen, **E. A. Sprague-Klein***. "LSPR-Assisted Spatial Assessment of Heavy Metal Contamination in Surface Water Sediments," Submitted to Nature Communications, 2026.

E. A. Sprague-Klein*, B. Phelan, M. Mara, J. Yu, J. Niklas, M. Drummer, K. Glusac, S. Lee, X. Zhang, D. M. Tiede, L.X. Chen*. "Ultrafast Electronic and Structural Dynamics in CoPi and CoBi Photocatalysts," In preparation, Angewandte Chemie, 2026.

Xinfeng Chen, Xiaohang Jia, Yan Zhou, Na Jin, Yuanqin Yun, Zhenyang Liu, Rongzhen Wu, Sooyeon Hwang, **Emily Sprague-Klein**, Brenda Rubenstein, Ou Chen, "Gold-Single-Atom Decorated Core-Shell Quantum Dots for High-Efficiency Overall Photocatalytic Water Splitting," In preparation, Nature Catalysis, 2025.

Rongzhen Wu, Andes Willemsen, Xiaohang Jia, Zhenyang Liu, Jianbo Gao, **Emily Sprague-Klein**, Ou Chen "Single-Step Colloidal Synthesis of Palladium Nanocluster–Functionalized $Cs_4MnSb_2Cl_{12}$ Layered Double Perovskite Nanocrystals," In preparation, Nano Letters, 2025.

E. A. Sprague-Klein, M. F. Cardinal, Z. Mansley, Y. Guo, Y. Shin, L. Peng, H. Mayhew, N. Chiang, M. Mattei, L.D. Marks, M. Hersam*, G.C. Schatz*, R.P. Van Duyne, "Polarization-Resolved and Pump Energy Dependence of Plasmon-Driven Electron Transfer in 4,4'-Bipyridine Single Particle Surface-Enhanced Raman Spectroscopy," *In preparation*, 2025.

GRANTS & AWARDS

Completed

Institute for Sustainable Energy Seed Award (CoPI)
Amount: $115,591 ($30,197 direct costs to the group)
Performance Period: 8/1/2023 – 7/31/2024
Title: Bullet-Proof Rigid-Rod Polymer to Block Dendrite Penetration in Batteries

Department of Energy, NSLS-II (PI), GUP: 313725
Amount: 12 shifts (96 hours) of hard x-ray nanoprobe (HXN) beamtime
Performance Period: 9/1/2023 – 12/21/2023 Title: In situ Structural Characterization of Enhanced Thermal Conductivity in Copper-Carbon Materials

Hassanamisco Band of Nipmuc, Blackstone River Watershed Council, National Park Service (PI)
Amount: $50,000 direct costs to the group
Performance Period: 1/15/2024 – 1/14/2025
Title: SERS-Based Methodology for Quantifying Pollutants in the Blackstone River

Department of Energy, NSLS-II (PI), GUP: 314737
Amount: 36 shifts (288 hours) of hard x-ray nanoprobe (HXN) beamtime
Performance Period: 1/3/2024 – 12/31/2024
Title: Structural Characterization of Enhanced Thermal Conductivity in Copper-Carbon Materials

UTRA and SPRINT Awards (PI)
Amount: $10,000 direct costs to the group
Performance Period: 6/24/2024 – 12/31/2025
Title: Plasmon-driven ring opening reactions in porphyrins; Plasmon-driven Chemistry

Awarded

DARPA ExCURSion (CoPi)
Amount: $152,000 to the group (Phase I)
Performance Period: 11/21/2024 – 2/20/26
Title: Novel sorbents for CO_2 capture for fuel production

NSF EPSCoR Research Fellow (PI)
Amount: $300,000 to the group
Performance Period: 1/1/2025 – 12/31/2026
Title: In situ characterization of Copper-Carbon Heterostructures for Renewable Energy

DOE EPSCoR Implementation (CoPi)
Amount: $206,307 to the group
Performance Period: 8/15/2025 – 8/14/2027 (renewable grant)
Title: Effect of the Electrical Double Layer (EDL) in Understanding the Correlation of Metal Plating/Stripping and Electrolyte Decomposition at Metal/Electrolyte Interface

ACS Graduate Student Success Grant (PI)
Performance Period: 12/31/2025 – 12/31/2026
Title: Plasmonics for Energy Resilience

PRESENTATIONS

2026 Vibrational Spectroscopy Conference Gordon Research Conference, August 2026, Invited Talk.

ACS Northwest Regional, "Lighting the Way: Unraveling Chemical Structure and Dynamics with Advanced Nonlinear Spectroscopy" Symposium, June 2026, Invited Talk.

University of Massachusetts Dartmouth, Department of Chemistry, Dartmouth, MA, February 2026, Invited Talk.

Simmons University, Department of Chemistry and Physics, Boston, MA, February 2026, Invited Talk.

The International Chemical Congress of Pacific Basin Societies, Division of Physical Chemistry (Pacifichem), Latest Development Of Advanced Vibrational Spectroscopy, "Plasmon-adsorbate photochemistry in nanoscale confined systems," Honolulu, Hawaii, December 2025, Invited Talk.

2025 SLAC/SSRL Users' Meeting, Characterization of Advanced Materials for Electrochemical Systems by Synchrotron X-ray, Palo Alto, CA, (rescheduled, TBD), Invited Talk.

American Chemical Society National Meeting, *Division of Physical Chemistry*, "Plasmonics for enhancing molecular adsorbate photochemistry," Washington D.C., August 2025, Contributed Talk.

DARPA Proposers Day, *Radiovoltaics Rads to Watts*, "Photonic and Plasmonic Enhancements for Improved Radiation Performance," Arlington, VA, June 2025, Contributed Talk.

Brown University Initiative for Sustainable Energy Mini-Symposium, "Photoredox Spectroscopy for Understanding Light-harvesting Dynamics," Providence, RI, May 2025, Invited Talk.

University of New Hampshire, Department of Chemistry, Durham, NH, February 2025, Invited Talk.

Brown University, Center for Students of Color, *Environmental Engagement Seminar*, Providence, RI, November 2024, Invited Talk.

The University of Rhode Island, Department of Chemical Engineering, *Amgen-sponsored Seminar Series*, Kingston, RI, November 2024, Invited Talk.

The University of Rhode Island, *Department of Chemistry Seminar*, "Observing Molecule-Plasmon Dynamics for Reactive Chemistry at the Nanoscale," Kingston, RI, October 2024, Invited Talk.

The XXVIII International Conference on Raman Spectroscopy (ICORS), *SERS, TERS, and Plasmonics: Mechanistic*, "Plasmonics for Photochemistry of Ions and Molecules," Sapienza Università di Roma, Rome, Italy, August 2024, Invited Talk.

Electrochemical Society National Meeting, *Light Induced Redox*, "Light-Induced Redox Dynamics in Plasmonic Nanostructures and Photosensitizer Transition Metal Compounds," San Franscisco, CA, May 2024, Contributed Talk.

DARPA Proposers Day, *Expeditionary Carbon Utilization for Energy Resilience and Stabilization (ExCURSion)*, "Energy-storing fuel sources for CO_2 capture," Arlington, VA, March 2024, Contributed Talk.

Brown University, *The Tony & Pat Houghton Condensed Matter Seminar Series*, "Plasmon-driven electron transfer in single gold nanoparticles functionalized with adsorbed pyridine derivatives," Providence, RI, December 2023, Invited Talk.

Brown University Sustainable Energy Workshop, *Electrochemical Redox Catalysis for Energy Conversion and Usage*, "Photoelectrochemical spectroscopy for understanding oxygen evolving reactions in water-splitting catalysis," Providence, RI, October 2023, Invited Talk.

American Chemical Society National Meeting, *Catalysis Dynamics of Active Sites, Catalyst Structure, and Reaction Environment*, "Light-induced chemical structure dynamics in photosensitizer transition metal compounds and metal-oxide catalysts," San Francisco, CA, August 2023, Invited Talk.

Brown University, *Department of Chemistry Colloquium*, "Light-Induced Chemical Structure Dynamics in Plasmonic Nanostructures and Photosensitizer Transition Metal Compounds," Providence, RI, October 2022, Invited Talk.

Vistas in Catalysis, National Academies of Science, *Engineering and Medicine Workshop*, Washington D.C., October 2022, Contributed Talk.

American Chemical Society National Meeting, *Photochemistry Spotlight: Answering the Big Questions in Photochemistry*, Chicago, IL, August 2022, Contributed Talk.

Brown University, *Department of Chemistry*, "Light-Harvesting Photonic Materials for Electron Transfer and Water-Splitting Catalysis," February 2022‡, Invited Talk.

Dartmouth, *Department of Chemistry*, "Light-Harvesting Photonic Materials for Enhanced Electron Transfer and Water-Splitting Catalysis Probed by Optical Spectroscopy," January 2022‡, Invited Talk.

Baylor University, *Department of Chemistry*, "Time-resolved Dynamics of Photonic Materials Probed by Optical and X-ray Spectroscopy," Waco, TX, January 2022, Invited Talk.

Miami University, *Department of Chemistry*, "Solar Materials Probed by Time-Resolved Optical and X-ray Spectroscopy," January 2022‡, Invited Talk.

Utah State University, *Department of Chemistry*, "Electronic and Structural Dynamics in Solar Materials Probed by Time-Resolved Optical and X-ray Spectroscopy," Logan (main campus), Blanding (Diné/Navajo Nation)‡, Uintah Basin (Ute Indian Tribe Education Partnership)‡, Aggie Broadcast, December 2021, Invited Talk.

SACNAS National Diversity in STEM Digital Conference, *Winner of the Indigenous Greeting, Native American Welcome*‡, October 2021, Invited Talk.

American Chemical Society Postdoc Symposium, *CATL/ENFL/PHYS/NUCL Divisions*, "Structural Changes and Charge Transport in Heterogenous and Molecular Cobalt Catalysts for Water Splitting Reactions," November 2021‡, Contributed Talk.

Department of Energy, *Office of Intelligence and Counterintelligence*, "Native American Heritage Month," Diversity, Equity + Inclusion Advisory Council Newsletter, B. Gaynor, M. R. Banon, and E. A. Sprague-Klein. United States: DY22 November 2021, Edition 13, Invited Talk.

American Chemical Society National Meeting, *Division of Colloids & Surface Chemistry*, "Understanding surface plasmon-driven electron transfer by modulating the electronic affinity of polypyridine molecules adsorbed on single gold nanoparticles," Atlanta, GA, August 2021, Contributed Talk.

American Chemical Society National Meeting, *Spectroscopy for Understanding Catalysis*, "Structural Changes and Charge Transport in Heterogenous and Molecular Cobalt Catalysts for Water Splitting Reactions," August 2020‡, Contributed Talk.

American Chemical Society National Meeting, *Chemistry in Real Space and Time Symposium*, "Nanoscale plasmon-driven electron transfer for solar energy applications," San Diego, CA, August 2019, Invited Talk.

Electrochemical Society, "Tracking Structures in Solar Fuels Catalysis: In-Situ X-Ray Structure Characterization of Interfacial Water-Splitting Molecular and Thin-Film Catalysts," D.M. Tiede, T.W. Kim, E. Sprague-Klein, G. Kwon, A.B.F. Martinson, and K.L. Mulfort. 2019 Vol. MA2019-02 Issue 41 1955, Invited Talk.

University of Chicago, *Institute for Molecular Engineering Seminar*, "Plasmon-Driven Electron Transfer in Single Gold Nanoparticles Functionalized with Adsorbed Pyridine Derivatives," Chicago, IL, December 2018, Invited Talk.

University of Chicago, *James Franck Institute Special Seminar*, "Hot Electrons & Transient Molecular Dynamics in Plasmonic Nanomaterials," Chicago, IL, November 2018, Invited Talk.

Northwestern University, *Spectroscopy & Theory Seminar*, "Direct Observation of Plasmon-Driven Electron Transfer in Gold Nanosphere Oligomers," Evanston, IL, March 2018, Invited Talk.

American Chemical Society National Meeting, *Energy & Charge Transfer at Nanoscale Interfaces*, "Observation of Single Molecule Plasmon-Driven Electron Transfer in Isotopically Edited 4,4'-Bipyridine Gold Nanosphere Oligomers," New Orleans, LA, March 2018, Contributed Talk.

University of Nebraska-Lincoln, *National Conference for Undergraduate Women in Physics*, "3D Superconducting Resonator for use in Graphene and Qubit Studies," E.A. Sprague and A. Bezryadin, October 2011, Contributed Talk.

University of Illinois, *Women Chemists Committee (WCC) Regional Undergraduate Research Symposium*, "Dissipation due to Graphene within a High-Q Superconducting Fabry-Perot Resonator," E.A. Sprague and A. Bezryadin, April 2011, Contributed Talk.

University of Illinois, *Undergraduate Research Symposium*, "Dissipation due to Graphene within a High-Q Superconducting Fabry-Perot Resonator," E.A. Sprague and A. Bezryadin, April 2011, Contributed Talk.

University of Illinois, *Physics Departmental Undergraduate Research Symposium*, "Femtosecond Timescale Bi-Plasma Interactions Probed by Visible Light Fluorescence," E.A. Sprague, D. Daranciang, and A. Lindenberg, January 2011, Contributed Talk.

Department of Energy, *Office of Scientific and Technical Information*, "Bi-Plasma Interactions on femtosecond Time-Scales," E. Sprague and A. Lindenberg, SLAC-TN-11-015, United States: N.p., 2011. doi:10.2172/1017214, Contributed Talk.

ǂ denotes a virtual talk due to the COVID-19 pandemic

TEACHING

Brown University, Providence, RI

Department of Chemistry

Chem 2770 – Quantum Mechanics, a graduate level physical and theoretical chemistry course using rigorous mathematical treatment and Dirac notation of one- and three-dimensional problems of relevance to low dimensional materials, spin systems, and excited-state molecular dynamics.

September – December 2023
September – December 2024
September – December 2025

Brown University, Providence, RI

Department of Chemistry

Chem 2020 – Advanced Statistical Mechanics, a graduate level physical chemistry course with emphasis on applications to computational challenges in electronic structure, catalysis, spectroscopy, and electrochemistry.

January – May 2023
January – May 2024
January – May 2025

Northwestern University, Evanston, IL

Department of Chemistry

Chem 329/445 – an advanced undergraduate & graduate course in plasmonics and vibrational spectroscopy averaging 50 students per quarter. Assisted in course planning and organization, lecturing, and grading.

January – March 2014

University of Illinois, Urbana-Champaign, IL

Department of Physics

Phys 211 – a calculus based introductory physics class for engineering, mathematics, physics, and chemistry majors averaging 300 students per semester. Supervised two discussion sections and lectured over problem solving technique and concepts, graded weekly quizzes, held weekly office hours, and proctored exams.

January – May 2012

RESEARCH AND ACADEMIC ADVISING

Ph.D. THESIS COMMITTEES:

Lisa Huang (5th year, Chemistry, Peter Weber)
David Romano (4th year, Chemistry, Peter Weber)
Ahsan Zohaib (4th year, Chemistry, Shouheng Sun)
Vaibhav Wani (4th year, Chemistry, Lai-Sheng Wang)
Abeera Hassan (3rd year, Chemistry, Ou Chen)
Alex Jodko (3rd year, Chemistry, Peter Weber)
Deniz Kahraman (3rd year, Chemistry, Lai-Sheng Wang)
Yitian Liu (3rd year, Chemistry, Brenda Rubenstein)
Shuchen Tian (3rd year, Chemistry, Lai-Sheng Wang)
Shijie Liu (2nd year, Chemistry, Ou Chen)
Temirlan Kubanaliev (2nd year, Chemistry, Shouheng Sun)
Linghang Meng (2nd year, Chemistry, Shouheng Sun)
Xinyu Zhang (2nd year, Lai-Sheng Wang)

CHEMICAL PHYSICS (Sc.B) CONCENTRATION ADVISOR:

Yungeun Kim (class of 2025, Brenda Rubenstein)
Jasper Lincoln (class of 2025, Brenda Rubenstein)
Kevin Rapp (class of 2025, Brenda Rubenstein)
Jeff Tejada (class of 2025, Brenda Rubenstein)
Medha Gereddy, class of 2026
Zhanxian Gong, class of 2026
Hugo Mullen, class of 2026
Yilin Xie, class of 2026
Congyun Liau, class of 2028
Simon Nirenberg, class of 2028

UNDERGRADUATE THESES/CAPSTONE PROJECTS ADVISED:

Zhanxian George Gong, Chemical Physics, class of 2026
Annika Svedlund, Physical Chemistry, class of 2026
William Roberts, Physical Chemistry, class of 2026
Ariana Clark, Computer Science & Critical NAIS Concentrator (CNC), class of 2024
Benjamín Córdova Herrera, Chemical Engineering & East Asian Studies (CNC), class of 2026
David Schauer, Biochemical-Physical Chemistry, co-advised with ETH Zurich, class of 2025

STUDENTS & STAFF:

Postdoctoral

Prasenjit Srivastava, PhD Physical Chemistry (October 2023 – present)

Graduate Students

Natalie Warren, 4th year, Physical Chemistry (December 2022 – present)
Umar Yunusa, 4th year, Physical Chemistry (December 2022 – present)
Elizabeth Donahue, 3rd year, Physical Chemistry (December 2023 – present)
Andes Willemsen, 3rd year, Physical Chemistry (December 2023 – present)
Yuanqing Yun, 3rd year, Physical Chemistry (December 2023 – present)
Emma Smith, 2nd year, Physical Chemistry (December 2024 – present)
Yan Zhou, 2nd year, Physical Chemistry (December 2024 – present)
Kyra Watts, 2nd year, Materials Science & Physical Chemistry (September 2024 – present)
Jaydan Thomas, 1st year, Physical Chemistry (December 2025 – present)

Visiting Scholars
Tomáš Malina, PhD candidate in Chemical Physics/Biophysics, Charles University (summer 2024)
David Schauer, B.S. candidate in Biochemical-Physical Chemistry, ETH Zurich (Sept 2023 – July 2024)
Genevieve Geiser, B.S. candidate in Chemistry, Elmira College (summer 2025)
Caroline Moonan, B.S. candidate in Chemistry, College of the Holy Cross (summer 2025)

Undergraduates
Arnav Singhal, Chemical Physics (January 2023 – June 2023), class of 2026
Zhanxian George Gong, Chemical Physics (September 2023 – present), class of 2026
Yilin Xie, Chemical Physics (May 2024 – October 2024), class of 2026
Annika Svedlund, Chemistry (October 2024 – present), class of 2026
William Roberts, Chemistry (August 2025 – present), class of 2026
Nicole Marion, Biology (October 2024 – present), class of 2028
Benjamín Córdova Herrera, Chemical Engineering (October 2024 – present), class of 2026
Doaa Elhassan, Applied Math (September 2025 – present), class of 2026
Peter Vachon, Biomedical Engineering (September 2025 – present), class of 2028
Bryan Quintero, Mechanical Engineering (September 2025 – present), class of 2028

Summer High School Honors Thesis / ACS Project Seed
Genevieve Geiser, Barrington High School, class of 2024
Troy Tian, Barrington High School, class of 2025
Alan Weng, Barrington High School, class of 2025
Khanh Le, Woonsocket High School, class of 2026
Martin Pani, Barrington High School, class of 2026
Aagami Mohiraaj, Barrington High School, class of 2026
Matthew Tian, Barrington High School, class of 2026

SERVICE AND OUTREACH

To the department/university:

- Member of Brown's *Institute for Molecular and Nanoscale Innovation (IMNI)*, 2022 – present
- Member of *Admissions Committee of the Chemistry Department*, 2022 – present
- Faculty organizer of *Chemistry Departmental Colloquium*, 2022 – present
- Faculty tour guide for the Chemistry Department's *STEM-Day* to attract underrepresented high school students. Providence, RI 2023 – present.
- Speaker for *Women and Non-Binary Faculty Panel* Discussion, March 2023
- Faculty facilitator and advisor for community partnership activities at the intersection of Science and Native American identities, *NAISI @ Brown*, 2023 – present
- NAISI Steering Committee, STEM-focused classes 2025 – present
- Udall Foundation, *Faculty Review Committee*, 2024
- National Lab Day @ Brown, *Faculty Host Committee*, 2024
- Undergraduate curriculum development, *Faculty Committee*, 2023
- Chemical physics undergraduate concentration advisor, September 2024 – present

To the profession:

- Peer reviewer for *Journal of the American Chemical Society*, *Chemical Reviews*, *Chemical Science*, *ACS Omega*, *ACS Applied Energy Materials, Journal of Applied Physics, Journal of Physical Chemistry, ACS Nano*
- Reviewer for *Department of Energy (DOE)* grant funding
- Reviewer for *National Science Foundation (NSF)* grant funding
- Discussion Leader, *Gordon Conference in Vibrational Spectroscopy*, 2024
- Discussion Leader, *Gordon Conference in Noble Metal Nanoparticles*, 2026

- Session Presider, *ACS Division of Colloids and Surface Chemistry*, 2021
- Session Co-Chair, *ECS Division of Physical and Analytical Electrochemistry: General Session*, Light Induced Redox, 2024
- Member of the *American Chemical Society (ACS)*, since 2016
- Member of the *Electrochemical Society (ECS)*, since 2019
- Member of *Materials Research Society (MRS)*, since 2019
- Member of *Society of Women Engineers (SWE)*, since 2008
- Member of the *Association of Women in Science (AWIS)*, since 2019
- Member of *Asian Scientists and Engineers (SASE)*, since 2019
- Member of *American Indian Science and Engineering Society (AISES)*, since 2019
- Member of the *Society for the Advancement of Chicanos and Native Americans in Science (SACNAS)*, since 2010
- Mentor & Science Panelist for Chicago's *NAACP Afro-Academic, Cultural, Technological and Scientific Olympics*, 2020 -2021
- STEM Career Counselor for Resume Preparation, *QuantumHispano*, 2020 -2021
- Founding Board Member of Northwestern University's *Mentorship Opportunities for Research Engagement (MORE)*, 2013 – 2017
- President of the University of Illinois at Urbana-Champaign's *Society for Women in Physics (SWIP)*, 2011 – 2012

To the community:

- Science Fair Judge for the Illinois Junior Academy of Science, 2013 – 2017
- Science Fair Judge for the Rhode Island Science and Engineering Fair, 2023 - 2024