**Julia Danischewski**

Department of Chemistry and Chemical Biology • Rensselaer Polytechnic Institute • Troy, NY 12180

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**PERSONAL INFORMATION**

Birth: May 26, 1999 – Staten Island, NY

Citizen of the United States of America

**EDUCATION**

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| 2021-present | Rensselaer Polytechnic Institute | Troy, NY |
|  | *Ph.D. Candidate in Chemistry* |  |
|  | Research Advisor: Professor Jacob T. Shelley |  |
|  | Thesis Title: Characterization of the Interactions of Gas-Phase Ions with Acoustic Fields: Fundamental Studies and Applications |  |
|  | *Anticipated Completion Date: Spring 2026* |  |
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| 2017-2021 | Skidmore College | Saratoga Springs, NY |
|  | *B.A. Chemistry (ACS Certified), B.A. German* |  |
|  | Minor: Physics |  |
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**RESEARCH EXPERIENCE**

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| 2021-present | Rensselaer Polytechnic Institute | Troy, NY |
|  | *Graduate Research Assistant* |  |
|  | Advisor: Professor Jacob T. Shelley |  |
|  | Investigated novel interactions of ions with acoustic fields. Maintained and facilitated the use of multiple mass spectrometers and ionization sources. Aided training and on-boarding procedures for new group members. |  |
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| 2018-2021 | Skidmore College | Saratoga Springs, NY |
|  | *Undergraduate Research Assistant* |  |
|  | Advisor: Professor Maryuri Roca |  |
|  | Worked collaborative to develop new synthetic techniques for silica coating silver nanoparticles, as well as complete method optimization and ruggedness testing. Gained experience with numerous analytical techniques (TEM, UV-Vis, Raman spectroscopy). |  |
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| 2019 | National Institute of Standards and Technology  Materials Measurement Laboratory | Gaithersburg, MD |
|  | *Summer Undergraduate Research Fellow* |  |
|  | Mentors: Dr. Nicholas Posey and Dr. Vivek Prabhu |  |
|  | Used dynamic light scattering to assess polymer-protein interactions with the goal of developing injectable drug delivery hydrogels. Completed chemical synthesis using Schlenk-line techniques and gained exposure to numerous characterization methods (NMR, DLS, refractometry, SANS). |  |
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| 2018 | Skidmore College | Saratoga Springs, NY |
|  | *Undergraduate Research Assistant* |  |
|  | Advisor: Professor Kimberly Frederick |  |
|  | Analyzed the composition of a mid-19th century oil painting with the goal of developing a condition assessment to be used by museum conservators. Gained experience with numerous analytical techniques (GC/MS, SEM, XRF, FTIR). |  |

**TEACHING EXPERIENCE**

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| 2022-present | Teaching Assistant | Troy, NY |
|  | Experimental Chemistry III and IV  Supported instruction of junior- and senior-level chemistry labs with a focus on inorganic, physical, and analytical chemistry |  |
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| 2018-2021 | Laboratory Preparation Assistant | Saratoga Springs, NY |
|  | General Chemistry, Biochemistry, Analytical Chemistry  Prepared reagents and other materials for a variety of chemistry labs. Supported instruction during class time. |  |

**HONORS**

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| 2024 | “Best of” Podium Presentations  Graduate Research Symposium | Rensselaer Polytechnic Institute |
| 2024 | Slezack Memorial Fellowship | Rensselaer Polytechnic Institute |
| 2024 | American Society for Mass Spectrometry Graduate Student Travel Award | ASMS, Anaheim, CA |
| 2023 | Department of Chemistry and Chemical Biology Poster Award, Third Place | Rensselaer Polytechnic Institute |
| 2023 | FACSS Innovation Award  \*Co-Author with PI Jacob T. Shelley | FACSS, Reno, NV |
| 2023 | FACSS Student Poster Award, Third Place | FACSS, Reno, NV |
| 2023 | Poehlman Award for outstanding SAS Chapter | FACSS, Reno, NV |
| 2023 | NYCRSAS Oral Presentation Award | Albany, NY |
| 2021 | Rensselaer Graduate Research Fellowship Award | Rensselaer Polytechnic Institute |
| 2021 | Charlotte W. Fahey Prize | Skidmore College |
| 2018 | Schupf Scholarship | Skidmore College |

**PUBLICATIONS**

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| 4. **Danischewski, J.L.;** You, Y.; Bauer, L.; Riedel, J.; Shelley, J.T.; Use of Resonant Acoustic Fields as Atmospheric Pressure Ion Gates, *Submitted.* **2024** |
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| 3. You, Y.; **Danischewski, J.L.**;Molnar, B.T.; Riedel, J.; Shelley, J.T.; Manipulation of Gaseous Ions with Acoustic Fields at Atmospheric Pressure, *J. of the Am. Chem. Soc.,* **2024** |
| 2. **Danischewski, J.;** Donelson, D.; Farzansyed, M.; Jacoski, E.; Kato, H.; Roca, M.;Color Transferability from Solution to Solid Using Silica Coated Silver Nanoparticles, *Langmuir*, **2023**, 39, 1786-1792 |
| 1. Posey, N.D.; Ma, Y.; Lueckheide, M.; **Danischewski, J.;** Fagan, J.A.; Prabhu, V.; Tuning Net Charge in Aliphatic Polycarbonates Alters Solubility and Protein Complexation Behaviors, *ACS Omega,* **2021**, 35, 22589-22602 |

**PATENTS**

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| 1. Manipulation of Gaseous Ion Beams with Acoustic Fields, J. T. Shelley, Y. You, J. Riedel, and **J. Danischewski**, United States Provisional Patent. |

**INVITED PRESENTATIONS**

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| 1. Expanding Our AIMs: Building on Acoustic Ion Manipulation (AIM) Capabilities through Changes to the Standing Acoustic Wave, **J.L. Danischewski**, L.S. Bauer, Y. You, J. Riedel, J.T. Shelley, *Oral,* to be presented at SciX 2024, Raliegh, NC |

**FIRST AUTHOR PRESENTATIONS**

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| 16. Students Exploring Raman Spectroscopy: Developing Outreach Efforts and Training Young Scientists via Surface Enhanced Raman Spectroscopy; **J.L. Danischewski,** J. Viggers, A. Fagbenro, J.T. Shelley,*Poster,* SciX 2024, Raleigh, NC  15. Novel Use of Standing Acoustic Waves for the Development of Atmospheric Pressure Ion Gates; **J.L. Danischewski**, L. Bauer, Y. You, J. Reidel, J.T. Sheley *Oral*, New York Capital Region Society for Applied Spectroscopy Student Chapter Annual Symposium 2024, Albany, NY |
| 14. Electric-field-free Approach to Ion Manipulation Based on Acoustic Fields **J.L. Danischewski**, Y. You, J. Riedel, J.T. Shelley, *Oral,* ASMS 2024, Anaheim, CA |
| 13. Stopping with Sound: Novel Use of Standing Acoustic Waves for the Development of Atmospheric-Pressure Ion Gates, **J. Danischewski,** Y. You, J. Riedel, L. Bauer, J.T. Shelley, *Oral*, Graduate Research Symposium 2024, Troy, NY |
| 12. Exploration of Acoustic Based Ion Optics for the Control of Gaseous Ions, **J. Danischewski**, Y. You, J. Riedel, J. T. Shelley, *Poster*, Department of Chemistry and Chemical Biology Graduate Symposium 2022, Troy, NY |
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| 11. Exploration of Acoustic Based Ion Optics for the Control of Gaseous Ions, **J. Danischewski**, Y. You, J. Riedel, J. T. Shelley, *Poster*, SciX 2023, Reno, NV |
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| 10. Characterizing the Behavior of an Ion Beam within an Acoustic Field, **J. Danischewski**, Y. You, J. Riedel, B. Molnar, J. T. Shelley, *Oral*, New York Capital Region Society for Applied Spectroscopy Student Chapter Annual Symposium 2023, Albany, NY |
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| 9. Gas-Phase Ion Manipulation Using Acoustic Fields, **J. Danischewski**, Y. You, J. Riedel, B. Molnar, J. T. Shelley, *Oral*,Graduate Research Symposium 2023, Troy, NY |
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| 8. Gas-Phase Ion Manipulation Using Acoustic Fields, **J. Danischewski**, Y. You, J. Riedel, B. Molnar, J. T. Shelley, *Oral*, Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy 2023, Philadelphia, PA |
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| 7. Gas-Phase Ion Manipulation Using Acoustic Fields, **J. Danischewski**, Y. You, J. Riedel, B. Molnar, J. T. Shelley, *Poster*, Department of Chemistry and Chemical Biology Graduate Symposium 2022, Troy, NY |
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| 6. More than Music: The Potential of Sound Waves for Mass Spectrometry, **J. Danischewski**, Y. You, B. Molnar, J. T. Shelley, *Poster,* New York Capital Region Society for Applied Spectroscopy Student Chapter Annual Symposium 2022, Albany, NY |
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| 5. More than Music: The Potential of Sound Waves for Mass Spectrometry, **J. Danischewski**, Y. You, B. Molnar, J. T. Shelley, *Poster*, Graduate Research Symposium 2022, Troy, NY |
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| 4. Preserving the Color of Silver Nanoparticles from Solution into PVA Films using Silica Coatings, **J. Danischewski**, D. Donelson, M. Farzansyed, E. Jacoski, H. Kato, Q. Lucin, M. Roca, *Oral*, Academic Festival 2021, Saratoga Springs, NY |
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| 3. Finding the Binding: Synthesis and Dynamic Light Scattering Analysis of Polyelectrolytes, *Oral*, **J. Danischewski**, N. D. Posey, Y. Ma, M. Lueckheide, V. Prabhu, *Oral*, National Institute of Standards and Technology Summer Undergraduate Research Fellowship Colloquium 2019, Gaithersburg, MD |
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| 2. Lost Treasure: Analytical Analysis of North and South by George Henry Hall, **J. Danischewski**, J. Ballot, L. Madloch, K. Frederick, *Poster*, Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy 2019, Philadelphia, PA |
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| 1. Validating Raman Spectroscopy for the Detection of Surface Molecules on Silver Nanoparticles, **J. Danischewski**, D. Donelson, M. Roca, *Poster*, American Chemical Society Spring National Convention 2019, Orlando, FL |

**CO-AUTHOR PRESENTATIONS**

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| 8. Acoustic Ion Manipulation: A Novel Means to Gate and Focus Ions, J.T. Shelley, Y. You, **J.L. Danischewski,** J. Riedel, 2024 US Winter Conference on Plasma Spectrochemistry, Tucson, AZ |
| 7. Training the next generation of analytical scientists with Project SEED through the detection of fluorinated persistent organic pollutants, J.T. Shelley, T.S. Jones, **J.L. Danischewski**, J. Viggers, 2023 Southeast Regional Meeting of the ACS, Durham, NC |
| 6. Acoustic Ion Manipulation: A Novel Approach to Enhance Ion-based Spectroscopies, J.T. Shelley, Y. You, **J.L. Danischewski**, J. Riedel, B.T. Molnar, SciX 2023, Innovation Award Finals Lecture (won the award), Sparks, NV |
| 5. Plasmas, Droplets, and Acoustic Fields: Century-Old Tools to Understand Abiotic Chemistry on the Early Earth, J.T. Shelley, **J.L. Danischewski**, S.E. Pryor, B.T. Molnar, S.P. Badal, Y. You, J. Riedel. European Winter Conference on Plasma Spectrochemistry 2023, Ljubljana, Slovenia |
| 4. Parallel Elemental and Molecular Chemical Imaging with Tandem Laser-Ablation Mass Spectrometry and Laser-Induced Breakdown Spectroscopy, J.T. Shelley, S.P. Badal, M.D. Young, J.G. Park, **J.L. Danischewski**, SciX 2022, Covington, KY |
| 3. Bunseniana: Drawing on the Character and Insights of Bunsen and Kirchhoff to Drive the Future of Analytical Spectroscopy, J.T. Shelley, S.P. Badal, B.T. Molnar, **J.L. Danischewski**, S.E. Pryor, Analytica Conference 2022, Munich, Germany |
| 2. Exploring Unique Chemistry in Plasmas and Droplets to Better Understand the Chemical Origins of Life, J.T. Shelley, B.T. Molnar, S.P. Badal, S.E. Pryor, E.A. Breves, **J.L. Danischewski**, M.F. Schaller, 10th Nordic Conference on Plasma Spectrochemistry (2022), Loen, Norway |
| 1. Novel Chemistry in Plasmas and Droplet – Implications for the Chemical Origins of Life, J.T. Shelley, B.T. Molnar, S.P. Badal, S.E. Pryor, E.A. Breves, **J.L. Danischewski**, Colloquium Spectroscopicum Internationale XLI(2022), Gijon, Spain |

**SERVICE AND OUTREACH**

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| 2024-present | Rensselaer Polytechnic Institute | Troy, NY |
|  | *President, New York Capital Region Society for Applied Spectroscopy Student Chapter* |  |
|  | Advisor: Professor Jacob T. Shelley and Professor Igor Lednev |  |
|  | Facilitated communication between regional and national levels of the Society for Applied Spectroscopy. Organized scientific outreach and professional development for regional graduate and undergraduate students. |  |
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| 2021-2023 | Rensselaer Polytechnic Institute | Troy, NY |
|  | *President Elect, New York Capital Region Society for Applied Spectroscopy Student Chapter* |  |
|  | Advisor: Professor Jacob T. Shelley and Professor Igor Lednev |  |
|  | Supported NYCRSAS president by planning and managing numerous student social and professional events. Helped coordinate an annual regional symposium for undergraduate and graduate students. |  |
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| 2023 | Rensselaer Polytechnic Institute | Troy, NY |
|  | *ACS Project SEED Mentor* |  |
|  | Advisor: Professor Jacob T. Shelley |  |
|  | Mentored a local high school student in mass spectrometry with a focus on PFAS detection in ski waxes. |  |
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| 2023 | Rensselaer Polytechnic Institute | Troy, NY |
|  | *Going Places >> Changing the World* |  |
|  | Represented the Shelley Lab at an outreach program meant for local students (grades 1-12). Helped prepare demos on acoustic levitation, plasma formation, optical spectroscopy, and microscopy. |  |

**PROFESSIONAL AFFILIATIONS**

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| 2024-present | American Chemical Society Division of Analytical Chemistry |  |
| 2024-present | American Society for Mass Spectrometry |  |
| 2021-present | Society for Applied Spectroscopy |  |
| 2018-present | American Chemical Society |  |