

Shelby Galinat
PhD Candidate, Maughan Group
Golden, CO
shelbygalinat@mines.edu

Education:

- Colorado School of Mines (CSM) *Present*
 - Materials Science Graduate Program, fourth year, Maughan Group
 - Passed qualifying exam
 - GPA: 3.96
 - University of Utah (UU), Honors College, Magna Cum Laude *Graduation May 2022*
 - Bachelor of Science in Chemistry, Atmospheric and Environmental emphasis
 - GPA: 3.99
 - Dean's List *2018 to 2022*
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Honors:

- NSF Graduate Research Fellow *Present*
 - National Neutron Scattering School Student *2025*
 - Competitive school for neutron scattering at Oak Ridge National Laboratory
 - NSF Institute for Data Driven Dynamical Design (ID4) Vice President *2023*
for Research and Technology Transfer (VPRTT) Fellow
 - CSM Chemistry Department Outstanding New Graduate Student Award *2022*
 - Bonner Memorial Award *2022*
 - UU chemistry department award for excellence in undergraduate chemistry
 - Honors in Chemistry Award *2022*
 - UU chemistry department award for writing an undergraduate honors thesis
 - Eccles Distinguished Scholar *2018 to 2022*
 - Full ride scholarship from UU Honors College
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Research:

- Maughan Group Graduate Researcher (CSM) *Present*
 - Orientational phase transitions and Li ion transport in Li argyrodite solid state electrolytes
 - Impact of intentionally designed, aligned with learning outcomes, authentic general chemistry laboratory curriculum on student experience and self-efficacy.
 - Sigman Group Undergraduate Researcher (UU) *2020 to 2022*
 - Undergraduate Research Opportunities Program (UROP): *2020 to 2022*
Synthesized and modeled the solubility of bipyrimidine electrolytes in acetonitrile for non-aqueous redox flow batteries (NRFBs)
 - REU: Developed conditions for a novel bipyrimidine electrophotocatalyst to reduce naphthalene chloride *2021 to 2022*
 - UROP: Computed properties of cyclic poly(phthalaldehyde) derivatives to build a predictive model for depolymerization temperatures *2020*
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Publications:

- **Galinat, S.**; Willard, C. M.; Teja Valeti, K.; Smaha, R. W. ; Staerz, A.; Maughan, A. E. Expanding Configurational Complexity through Dipole Dilution in Pseudohalide Argyrodite Ion Conductors. *Chem. Mater.* In review. 2025
- Ray, C.; Yao, Y.; **Galinat, S.**; Addison, B.; Blum, V.; Maughan, A. E. Site Disorder Drives Cyanide Dynamics and Fast Ion Transport in $\text{Li}_6\text{PS}_5\text{CN}$. *Chem. Mater.* **2024**, 36 (19), 9424–9441. DOI: 10.1021/acs.chemmater.4c00979 2024
- Pancoast, A.; McCormack, S.; **Galinat, S.** ; Walser-Kuntz, R.; Jett, B. M.; Sanford, M. S.; Sigman, M. S. Data Science Enabled Discovery of a Highly Soluble 2,2' Bipyrimidine Anolyte for Application in a Flow Battery, *Chem. Sci.*, **2023**, 14 (47), 13734-13742. DOI: 10.1039/D3SC04084D 2023
- **Galinat, S.** Bipyrimidine Solubility Modeling For Applications In Non-Aqueous Redox Flow Batteries, *University of Utah Honors Theses Open Access*, **2022**. <https://collections.lib.utah.edu/ark:/87278/s6ny8r1a> 2022

Presentations:

- Colorado Center for Advanced Ceramics (CCAC) Oral Presentation (CSM) 2025
 - “Expanding Configurational Complexity through Dipole Dilution in Pseudohalide Argyrodite Ion Conductors”
- Front Range Electrochemistry Workshop Poster 2025
- Graduate Research And Discovery Symposium (GRADS) Oral Presentation (CSM) 2025
 - “Dipole Dilution Improves Li^+ Conductivity in $\text{Li}_6\text{PS}_5(\text{CN})_{1-x}\text{Br}_x$ ”
- College Teaching Certificate Program Showcase 2025
 - “From Obligation to Opportunity: Reimagining General Chemistry Lab”
- ACS Rocky Mountain Regional Meeting Presentation (Univ. of Wyoming) 2023
 - “If at first you don’t succeed, nitride, nitride again: Mg ternary nitride solid state electrolyte synthesis”
- Institute for Data Driven Design (ID4) Meeting Poster (Harvard) 2024
- Colorado Center for Advanced Ceramics (CCAC) Poster (CSM) 2024
 - Winner: Best Poster
- Colorado Center for Advanced Ceramics (CCAC) Poster (CSM) 2023
- Alliance for Diversity in Science and Engineering (ASDE) Young Researchers Conference Poster (Texas A&M) 2023
- Graduate Research And Discovery Symposium (GRADS) Poster (CSM) 2023
- Rocky Mountain Solid State Chemistry Workshop Poster (CU Boulder) 2023

Outreach:

- Chemistry Graduate Association President (CSM) *Present*
 - Advocating for chemistry graduate students to chemistry department faculty.
- Trefny Center Graduate Teaching Fellow (CSM) 2024-2025
 - Redesigning general chemistry laboratory materials and curriculum to focus on key learning objectives.
- Discipline-Based Education Research Workshop (CSM) 2025

- Materials Mystery science kit development (CSM) *Present*
 - Designing hands-on materials science activities for high school students
 - College Teaching Certificate Program (CSM) *2023 to 2024*
 - Developing a syllabus, teaching statement, and statement of diversity, equity and inclusion as well as practicing micro-teaching
 - Integrating LLMs into the Materials Chemistry Curriculum Workshop (CSM) *2024*
 - Brainstorming opportunities to leverage large language models (LLMs) for chemistry and materials science education
 - Mentorship of undergraduates
 - Student: Claire Willard (CSM) *2024 to 2025*
 - Student: Lexi Collins (CSM) *2023*
 - Integrating Computation And Experiment To Create Revolutionary Materials (ICECRM) Research Experiences for Undergraduates (REU) *2023*
 - Students: Rae Earnest (Iowa State), Eleni Ziu (Virginia Tech.)
 - Rocky Mountain Mathematics, Engineering, and Science Achievement Mentor (CSM) *2023*
 - Collaborating with a teacher to generate and teach STEM curriculum once per week at Arvada K8
 - SWE Girls Lead the Way Event Volunteer (CSM) *2023*
 - Performed materials science demonstrations and answered questions about STEM careers and education
 - Bud Bailey Tutor and Program Director (UU) *2019 to 2022*
 - Tutor: Facilitated English reading practice and homework completion with predominantly immigrant and refugee students
 - Program Director: Recruited and managed volunteers, coordinated STEM activities with a community partner
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Teaching:

- General Chemistry 1 Guest Lecture - Introduction to Materials Chemistry *2025*
 - Advanced Materials Kinetics and Transport Guest Lecture – Li^+ ion Migration in $\text{Li}_6\text{PS}_5(\text{CN})_{1-x}\text{Br}_x$ *2025*
 - Structure of Materials Guest Lecture – Bragg's Law (CSM) *2024*
 - Physical Chemistry I Lab TA (CSM) *2023*
 - Molecular Engineering and Materials Chemistry Lab TA (CSM) *2023*
 - General Chemistry I Lab TA (CSM) *2022*
 - Organic Chemistry II TA (UU) *2021*
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Extracurricular:

- Mines Mountain Bike Collegiate Nationals Team Member *2022*
 - 7th place individual club cross-country
 - 1st place D2 club team omnium