

JOSEPH J. THIEBES

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EDUCATION

- Doctor of Philosophy Candidate in Chemistry** *graduation expected May 2024*
Montana State University, Bozeman
- Bachelor of Science in Chemistry** *June 2017*
Portland State University
- Bachelor of Arts in Physics & Liberal Studies** (double major) *June 2017*
Portland State University
- Associate of Science in Oregon Transfer Program** *March 2013*
Portland Community College

RESEARCH & TECHNICAL EXPERIENCE

- Graduate Research Assistant** Jun. 2018 - present
Montana State University · Research Advisor: Prof. Erik Grumstrup *Bozeman, MT*
- Synthesis, sample prep, and characterization of lead-halide perovskite crystallites and nanoparticles using steady-state fluorescence spectroscopy, FE-SEM, XRD, UV/Vis, DLS, and femtosecond laser microscopic & spectroscopic methods including pump-probe transient absorption and photoluminescence
 - Kinetic Monte-Carlo modeling of charge carrier transport and statistical modeling of regression algorithms, using Mathematica and Python
 - Development of cybernetic auto-focus with computer-controlled optomechanics and LabView interface; implemented on optics benches throughout the lab
 - Lab manager role (from Aug. 2020) included training new students and maintaining safety documents
- Chemist I** May 2017 - Dec. 2017
Diatomix, Inc. · Supervisor: Dr. Nicholas Day, C.T.O. *Portland, OR*
- Research and development of a photocatalytic paint additive that continuously eliminates VOCs
 - Writing, editing, and proofreading grant proposals, including successful NSF SBIR
 - Characterization by XRD, UV-Vis spectrophotometry, and gas chromatography
- Gravimetry Laboratory Technician** Aug. 2016 - May 2017
Chester LabNet *Tigard, OR*
- Gravimetric analysis at microgram levels following EPA & CFR protocols
- Undergraduate Research Assistant** Dec. 2013 - Jun. 2017
Portland State University · Faculty Mentor: Prof. Raj Solanki *Portland, OR*
- Synthesis of Prussian Blue analogue materials and preparation of electrodes and cells
 - Characterization by SEM/EDX, cyclic voltammetry, and galvanic cycling
 - Development of MATLAB data analysis script for use by our group, saving hours of effort per experiment
- Research Intern** Jun. - Aug. 2015
NASA Glenn Research Center · Mentor: Dr. Dionne Hernandez-Lugo *Cleveland, OH*
- Preparation and assembly of lithium-sulfur coin cells
 - Characterization of cells by SEM/EDX, cyclic voltammetry, galvanic cycling, electrochemical impedance spectroscopy, FT-IR, Raman spectroscopy, and thermo-gravimetric analysis
- Research Intern** Jan. - Mar. 2014
Center for Electron Microscopy & Nanofabrication · Supervisor: Greg Baty, M.S. *Portland, OR*
- SEM/EDX analysis for industry, government, and academic clients

TEACHING EXPERIENCE

- Graduate Teaching Assistant** Jan. - May 2018; Aug. 2021 - present
Montana State University Bozeman, MT
· Classroom instruction and evaluation in General Chemistry and Physical Chemistry lab sections
- Freelance Tutor** Dec. 2015 - Dec. 2017
Self-Employment Portland, OR
· Personalized assistance in mathematics, chemistry, and physics for adults and high-school-age children
- Teacher and Tutor** May 2016 - Dec. 2017
The Princeton Review Portland, OR
· Facilitation of SAT and ACT preparatory coursework in a classroom setting and individual tutoring
- Volunteer Tutor** Mar. 2013 - Apr. 2014
PCC Volunteer Literacy Tutoring Program Portland, OR
· Provided individual instruction to adults in basic mathematical literacy through beginning algebra
- Chemistry Instructional Support Technician** Nov. 2012 - Jul. 2013
Portland Community College, Rock Creek Campus Portland, OR
· Prepared reagents, glassware, and instruments for chemistry and physics labs
- Peer Mentor** Sep. 2011 - Jun. 2012
Portland Community College, Cascade Campus Portland, OR
· Facilitated weekly study sessions for Calculus I-III, in a program of the Associated Students of PCC

AWARDS & RECOGNITION

- TechConnect World Innovation Conference & Expo, **National Innovation Award** (team) 2018
- American Chemical Society, Portland Section, Green Chemistry Essay Contest, **First Place** 2016
- Sigma Xi National Meeting, Student Research Symposium, **Superior Presentation** 2015
- Erik Nielsen Scholarship, awarded for **academic excellence** 2015
- Nebraska Book Company Scholarship, awarded for **academic excellence** 2015
- NASA Glenn Research Center Intern Design Challenge, **Second Place** (team) 2015
- Sigma Xi Columbia-Willamette Chapter, Student Research Symposium, **Outstanding Research** 2015
- Portland Community College Foundation Scholarship, awarded for **academic excellence** 2012
- James F. & Marion L. Miller Foundation Scholarship, awarded for **academic excellence** 2012
- NASA National Community College Aerospace Scholar, **First Place** (team) 2012

PROFESSIONAL MEMBERSHIPS

- German Physical Society (German: Deutsche Physikalische Gesellschaft, DPG) *since 2022*
- Society for Applied Spectroscopy (SAS) *since 2020*
- Optica (formerly The Optical Society, OSA) *since 2020*
- The International Society for Optical Engineering (SPIE) *since 2018*
- National Education Association (NEA) *since 2018*
- American Academy for the Advancement of Science (AAAS) *since 2016*
- Sigma Xi Scientific Research Honor Society ($\Sigma\Xi$) *since 2015*
- American Chemical Society (ACS) *since 2014*
- Materials Research Society (MRS) *since 2014*
- American Physical Society (APS) *since 2013*

OTHER EXPERIENCE AND SKILLS

Previous experience prior to 2011

- Past employment included experience with transferable skills in management, training, writing, proof-reading, editing, desktop publishing, graphic design, and website development.

Programming & software skills

- *Data Acquisition & Automation:* LabView, CorrWare, Arduino; *Programming:* Mathematica, MATLAB, Python, Julia; *Computational Chemistry:* Gaussian, Avogadro, Spartan, Mercury, ChemDraw; *Computer Assisted Design:* AutoDesk Fusion 360, TinkerCAD; *Graphics / Publishing:* L^AT_EX, Adobe Photoshop, Acrobat Pro, HTML/CSS; *Office Software:* Microsoft Word, Excel, Access, PowerPoint

OUTREACH EVENTS & VOLUNTEER ROLES

Workshop Facilitator: *Montana State University STEAM Day* Apr. 15, 2023

- Birefringent art demonstration and workshop for girls in grades 6-8

Event Coordinator and Host: *Online seminar featuring Prof. Donna Strickland* Mar. 15, 2023

- Nobel Laureate seminar sponsored by *The Optics & Photonics Society at MSU (OPS)*

House Photographer: *Verge Theater* Oct. 2019 - Jun. 2022

- DSLR photography of theatrical events

Event Coordinator and Host: *International Day of Light, Bozeman* May 16, 2022

- Recruitment of speakers and volunteers, event planning and promotion
- Coordination with sponsoring organizations: *The Optics & Photonics Society at MSU (OPS)*, *Montana Science Center*, *Montana Photonics Industry Alliance*

President: *The Optics & Photonics Society at MSU (OPS)* May 2021 - May 2022

- Established chapter affiliation with Optica and continued chapter affiliation with SPIE
- Incorporated as a non-profit organization registered with IRS & Montana Secretary of State
- Outreach, event planning, optics demonstrations, and membership recruitment

Treasurer: *Montana State University SPIE Student Chapter* Jun. 2019 - May 2021

- Bookkeeping, event planning, optics demonstrations, and membership recruitment

Presenter: *Montana State University Family Science Day* Feb. 27, 2020

- Laser optics demonstration for middle-school children

Presenter: *Zoot Adventure Learning Academy* Jul. 10, 2019

- Laser optics demonstration for middle-school children

Artist: *Research Art Project at Montana State University* Oct. - Nov. 2019

- Exhibition of scientific artwork at *Montana Science Center* and *Bozeman Public Library*

Treasurer: *PSU Student Affiliates of the ACS (SAACS) PSU Physics Society* Jan. 2015 - Jun. 2017

- Bookkeeping & event planning for two clubs at Portland State University
- Chemistry demonstrations, physics demonstrations, and membership recruitment

Independent Reporter: *PSU Vanguard & Portland Spectrum* Sep. 2014 - Jun. 2015

- Science journalism, including writing, photography, and video production for two publications

Founding President: *PCC Campus Cycling Club* Sep. 2011 - Jun. 2013

- Coordination of club activities, including bike rides, classes, and other events

Student Representative: *Portland Community College Bike Task Force* Sep. 2011 - Jun. 2012

- Student advocacy in the PCC Department of Parking and Transportation Services

PUBLICATIONS & PRESENTATIONS

Peer-Reviewed Journals

- Kuperman, N.; Padigi, P.; Goncher, G.; Evans, D.; **Thiebes, J. J.**; Solanki, R. High performance Prussian Blue cathode for non-aqueous Ca-ion intercalation battery. *J Power Sources* **2017**, *342*, 414-418.
- Padigi, P.; Kuperman, N.; **Thiebes, J. J.***; Goncher, G.; Evans, D.; Solanki, R. Calcium cobalt hexacyanoferrate cathodes for rechargeable divalent ion batteries. *J New Mater Electrochem Syst* **2016**, *19*, 57-64. (*Corresponding author.)
- Padigi, P. **Thiebes, J. J.**; Swan, M.; Goncher, G.; Evans, D.; Solanki, R. Prussian green: a high rate capacity cathode for potassium ion batteries. *Electrochim Acta* **2015**, *166*, 32-39.

Book Chapters

- Kuperman, N.; Padigi, P.; Goncher, G.; **Thiebes, J. J.**; Evans, D.; Solanki, R. Electrochemical Energy Storage in Prussian Blue Batteries and Capacitors. In *Prussian Blue-Type Nanoparticles and Nanocomposites: Synthesis, Devices, and Applications*; Guari, Y., Larionova, J., Eds. Jenny Stanford Publishing: Singapore, 2019.

Conference Proceedings

- Day, N.; Olsen, J; Dereviankin, V.; **Thiebes, J. J.**; Beyers, B.; Polliak, A. Diatom Frustules as Substrates for Photocatalysts. *TechConnect Briefs* **2018**, *5*, 263-266.

Presentations & Poster Sessions

- Optical Technology Center Conference, Montana State University Oral presentation, *Sep. 2022*
- ACS Fall Virtual Meeting & Expo Poster session, *Aug. 2020*
- Materials Science Symposium, Montana University System Poster Session, *Sep. 2019*
- Optical Technology Center Conference, Montana State University Poster session, *Aug. 2019*
- Northwest Regional Meeting (NORM) of the ACS Oral presentation, *Jun. 2019*
- Montana Local Section of the ACS Meeting and Social Poster session, *Oct. 2018*
- National Meeting of the American Chemical Society Poster session, *Apr. 2017*
- National Meeting of Sigma Xi Scientific Research Honor Society Poster session, *Oct. 2015*
- NASA Glenn Research Center Summer Intern Research Symposium Poster session, *Aug. 2015*
- Northeast Ohio Undergraduate Research Symposium Poster session, *Aug. 2015*
- NASA Glenn Research Center Summer Intern Presentation Oral presentation, *Jul. 2015*
- Sigma Xi Columbia-Willamette Chapter, Student Research Symposium Poster session, *Apr. 2015*
- Undergraduate Poster Symposium, ACS Portland Section Poster session, *Oct. 2014*