Patrick J. Lohr

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Education

UNIVERSITY OF ARIZONA, *Tucson, Arizona* — 2019 - Present

Doctor of Philosophy in Chemical Engineering

- Awarded the prestigious University Fellowship, which focuses on community outreach
- Completed 10 advanced courses in chemical engineering and optical sciences, 4.0 GPA
- Simulated atomic interactions in perovskite films using *ab initio* molecular dynamics
- Created an interactive heat transfer model for a custom perovskite film printing system
- Simulated absorption of metallic core/shell nanoparticles using Lorenz-Mie scattering
- Developed mathematical models for adsorption of proteins at nanoparticle interfaces
- Assisted in the fabrication of hybrid plasmonic nanoparticles and subsequent classification using TEM, SEM, and UV-Vis spectroscopy
- Facilitated the image analysis of nano-materials using ImageJ and Python
- Served on the leadership team for the Association of Chemical and Environmental Engineering Students (ACES)

UNIVERSITY OF ARIZONA, *Tucson, Arizona* — 2015 - 2019

Bachelors of Science in Chemical Engineering

- Graduated Summa Cum Laude with a GPA of 3.97, Top of Class
- Graduated from the University of Arizona Honors College
- Completed graduate courses in advanced transport phenomena, mathematical modeling, and numerical simulation
- Performed synthesis of metallic nanoparticles for light conversion and energy storage
- Modified metallic nanostructures for plasmon frequency analysis
- Demonstrated strong leadership skills by working with faculty to maintain an interactive learning environment for undergraduate students as a supplemental instructor
- Demonstrated strong leadership and communication skills by substituting as a lecturer for a graduate mathematics course as an undergraduate

Experience

UNIVERSITY OF ARIZONA, *Tucson, Arizona* — 2020 - Present

UNIVERSITY FELLOW

- Collaborated in myriad projects involving students from various disciplinary backgrounds
- Mentored a fellow Ph.D. seeking graduate student from Arizona State University
- Attended several workshops on leadership, professional development, writing efficiency, and team-building
- Organized a journal club for University Fellowship recipients to workshop manuscripts

UNIVERSITY OF ARIZONA, *Tucson, Arizona* 2019 - Present

TEACHING ASSISTANT

- Instructed 11 teams on embedded systems and PID controller design
- Facilitated the creation of multiple technical reports by introducing collaborative software
- Designed and lead workshops for MATLAB, Python, and Github integration within the chemical, biosystems, and electrical engineering disciplines
- Created solutions and graded assignments for 90 students

UNIVERSITY OF ARIZONA, *Tucson, Arizona* 2019 - Present

GRADUATE RESEARCH ASSISTANT

- Compiled physical data for crop growth modeling, including weather, soil parameters, and plant characteristics
- Developed multiple MATLAB modules for automated data retrieval and processing
- Assisted with cross-platform development of several interdisciplinary projects, including antenna design, hybrid nanoparticles, and web design
- Fabricated polymer nanofibers for use in perovskite photovoltaic devices

PIMA COMMUNITY COLLEGE, *Tucson, Arizona* 2014 - 2018

TUTOR

- Responsible for facilitating the academic success of students and bridging the gap between student and professor
- Certified as an advanced tutor by the College Reading & Learning Association
- Provided supplementary instruction in math, chemistry, physics, and writing

Skills

- C, C++
- Python
- MATLAB
- Materials Studio
- LAMMPS
- Git
- Vienna Ab Initio Simulation Package (VASP)
- SEM
- XRD
- Adobe Photoshop + Lightroom

Awards

- Lototski, W.L. Scholarship
- Park, John Scholarship
- Edwards, Richard Scholarship
- Fraps, Conrad Scholarship
- Outstanding Senior Award for academic excellence
- Don White award for academic achievement in chemical engineering

Membership

- Phi Kappa Phi Honor Society
- University of Arizona Honors College
- Tau Beta Pi
- AICHE
- SHPE
- ACS

Publications

- Li, Y., Dailey, M., **Lohr, P. J.**, & Printz, A. D. (2021). Performance and stability improvements in metal halide perovskite with intralayer incorporation of organic additives. Journal of Materials Chemistry A, 9(30), 16281–16338. https://doi.org/10.1039/d1ta05252g
- **P. Lohr**, A. Piatkiewicz, A. Matalgah, A. Tadj, "Pyrolytic Conversion of Waste Biomass to Jet Fuel," 2018, Submitted to the University of Arizona Honors College

Presentations

- P. Lohr, "AquaCrop Modeling of Guayule," SBAR Annual Retreat, Tucson, AZ, 2019
- P. Lohr, "Adapting Annual Models to Perrenial Crops," SBAR Update, Tucson, AZ, 2020

Volunteer

UNITED WAY, *Tucson, Arizona* — 2021 - Present

DAYS OF CARING VOLUNTEER

UNIVERSITY OF ARIZONA, *Tucson, Arizona* — 2021 - Present

COVID-19 POD VOLUNTEER

SARSEF SCIENCE AND ENGINEERING, *Tucson, Arizona* — 2020 - Present

GRAND JUDGE

ST. ODELIA CATHOLIC CHURCH, *Tucson, Arizona* — 2015 - Present

MUSIC MINISTER

ST. VINCENT DE PAUL, *Tucson, Arizona* — 2010 - Present

FOOD COLLECTION VOLUNTEER