

Education

Master of Science, Chemistry

University of Oregon – Eugene, OR
 Focus in Polymer Science
 Expected Graduation: June 2018

Bachelor of Science, Chemical Engineering

Oregon State University – Corvallis, OR
 Focus in Polymer Science & Sustainability
 Graduation: June 2017, GPA: 3.85, Summa Cum Laude

Technical Experience

Senior Capstone Team Member

Department of Chemical, Biological & Environmental Engineering (CBEE), Phil Harding lab
 Oregon State University – Corvallis, OR January 2017 – June 2017

Determined efficacy of three storm water filter sites on OSU campus ranging in age from 1-10 years. Proposed maintenance schedule and further research to mitigate negative effects of underperforming systems.

- Pioneered cost-effective device to sample filter outlet, lowering cost from \$400 to \$6 per site over 6 design iterations; low-cost device addressed design challenges by minimizing outlet-bypass contamination and successfully collecting dirty storm water from 1-m depth without ruining hand pump
- Increased \$200 budget by 600% by writing budget proposal and corresponding with potential project sponsors to meet self-defined project scope
- Developed 5 standard operating procedures for characterization techniques and lab material prep based on extensive filtration technology testing protocol from the Washington State Department of Ecology
- Inspired two novel capstone projects for next class of students by presenting project conclusions in 1-hour technical talk for the Corvallis city manager and head engineer, and OSU Capital Planning and Facilities Services department chairs

Research Assistant

Center for Sustainable Materials Chemistry, Doug Keszler lab
 Oregon State University – Corvallis, OR September 2015 – June 2017

Assisted graduate students in 6 proprietary and confidential green chemistry research projects by preparing and characterizing samples, discussing experiment results, and planning next steps.

- Mentored 3 undergraduates in green chemistry project by teaching laboratory skills, including synthesis, thin film sample prep, and characterization techniques
- Submitted manuscript to Chemistry of Materials as co-author on *Bulk Synthesis of Aqueous Aluminum Clusters and Their Use as Precursors for Metal Oxide Thin Films*
- Placed in top 3 of 40 undergraduates during annual Department of Chemistry poster session and earned the Outstanding Undergraduate Researcher Award; presented porous alumina thin film research for anti-reflective coatings

Research Intern

Center for Sustainable Materials Chemistry, Doug Keszler lab
 Oregon State University – Corvallis, OR June 2015 – August 2015

Researched environmentally-friendly fabrication of porous alumina thin films for anti-reflective coating applications in a team of 3 undergraduates.

- Fabricated porous alumina thin films with tunable refractive indices as low as 1.26, which is 9% smaller than lowest conventional dense film (MgF_2); this showed potential as an effective anti-reflective coating for materials with indices near 1.5, such as borosilicate glass
- Reduced data processing time from 30 min to 5 sec for surface area-measurement by creating visual basic script to perform statistical analysis and create figures
- Published in Optical Materials Express as co-author on porous alumina thin films

Work Experience

Private Tutor

Oregon State University – Corvallis, OR

January 2016 – August 2017

Instructed individuals and groups of students in material and energy balances, and electrical fundamentals.

- Improved student's grade by 20% in 5 weeks by teaching concepts from the ground up and formulating personalized problem sets for the student to clarify material
- Explained complex concepts over language barriers with non-native English speaking students by finding common ground and incorporating simple analogies to resolve misconceptions

Electrical Fundamentals Learning Assistant

Department of Electrical & Computer Engineering

Oregon State University – Corvallis, OR

September 2015 – April 2016

Instructed students in electrical fundamentals, graded quizzes and exams, and prepared content for class.

- Led two recitation sections of 30 students per term, introducing new material before lecture
- Organized and led extracurricular midterm review sessions for 200-300 students three times per term; prepared and presented problem sets to specifically address common conceptual misunderstandings
- Strengthened potential for student success by directing 6 hours of office hours per week for 3+ students

Skills

Spanish: Native and bilingual proficiency

Fast Learner: Transition and adapt to new situations easily and pursue new knowledge enthusiastically

Power Tools: Experienced with pneumatic nail/staple guns, miter/table/circular/reciprocating saws, belt/disc sanders, routers, planers, and drills

Instruments: Experienced with DSC, TGA, DMA, TMA, FTIR, and rheology

Publications

Peer-Reviewed Publications

Perkins, C.K.; Mansergh, R.H.; Ramos, J.C.; Nanayakkara, C.E.; Park, D.H.; Goberna-Ferrón, S.; Fullmer, L.B.; Arens, J.T.; Gutierrez-Higgins, M.T.; Jones, Y.R.; Lopez, J.I.; Rowe, T.M.; Whitehurst, D.M.; Nyman, M.; Chabal, Y.J.; Keszler, D.A. (2017) "Low-index, smooth Al₂O₃ films by aqueous solution process." *Optical Materials Express*. 10.1364/OME.7.000273.

Manuscripts Under Review

Fulton, B.; Perkins, C.K.; Mansergh, R.; Jenkins, M.; Gouliouk, V.; Jackson, M.; Ramos, J.C.; Rogovoy, N.; Gutierrez-Higgins, M.T.; Boettcher, S.; Conley, J.; Keszler, D.A.; Hutchison, J.; Johnson, D. (2017) "Minerals to Materials: Bulk Synthesis of Aqueous Aluminum Clusters and Their Use as Precursors for Metal Oxide Thin Films." *Chemistry of Materials*. cm-2017-02106x.R.

Awards and Honors

Secretary of Tau Beta Pi Engineering Honors Society, OSU 2016 – 2017
Top 8% of junior engineering class invited

Kenneth Spies Memorial Scholarship, Department of CBEE, OSU 2016 – 2017
23% of 250 senior students with GPA > 3.0 awarded scholarship

American Federation of State, County, and Municipal Employees Family Scholarship 2013 – 2017
2.5% of 400 selected nationally for union scholarship; based on academics and application

Outstanding Undergraduate Researcher Award, Department of Chemistry, OSU 2015 – 2016
7.5% of 40 candidates selected during annual poster session