

Austin Grant Wardrip

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Education:

University of California, Irvine

2014 – 2017, Master of Science (MS) in Chemistry

Graduate Student with the Department of Chemistry. Primarily took chemistry classes, with additional physics and engineering classes as well.

Stanford University

2011 – 2014, Bachelor of Science (BS) in Chemistry

Transfer student. Majored in chemistry, with additional physics, engineering, and mathematics classes.

Portland Community College

2009 – 2011, Associate of Arts, Oregon Transfer (AAOT) degree

Completed general studies with intentions to transfer to a 4-year university to earn a BS in chemistry.

American School of Correspondence

2006 – 2008, High School Diploma

Research Experience:

University of California, Irvine, Henry Samueli School of Engineering

2021 – Present

Working in the Gorodetsky Group (physical, synthetic, organic electronics, and electrochemistry) for my PhD in Engineering concentrating in Materials and Manufacturing Technology (MMT). Project involves the design, synthesis, and study of biologically-inspired polymeric materials

University of California, Irvine, Department of Chemistry

2015 – 2017

Worked in the Gorodetsky Group (physical, synthetic, organic electronics, and electrochemistry) for my MS in Chemistry. Project involved the design, synthesis, and study of biologically-inspired molecular wires, which were studied via electrochemistry and synchrotron-based X-ray spectroscopy.

Stanford University, Department of Chemistry

2011 – 2014

Worked in the Chidsey Group (physical, surface, and electrochemistry) in the Department of Chemistry. Project involved examining the kinetics of the copper-catalyzed alkyne-azide triazole-forming “click” reaction (CuAAC) on functionalized surfaces.

NASA Jet Propulsion Laboratory

Summer 2010

Worked as a Space Grant Summer Intern in the High Capability Computing and Modeling Group, where I modeled microwave emissions from comet comae. This work supported the MIRO instrument, a NASA-built microwave spectrometer aboard the ESA-led Rosetta Spacecraft.

Portland State University

2009 – 2011

Worked in the Ranavare Group (physical chemistry) in the Department of Chemistry. Worked with data gathering, which consisted of fixing/adjusting old/delicate instruments, interfacing them to modern computers, and writing software to obtain and save data. Performed material characterization, synthesis, and general lab maintenance.

Employment Experience:

Intel Corporation

Wet Etch Process Engineer (Intel Contract Employee)

Spring 2018 – Spring 2019

Worked in the wet etch group (front-end of line) during startup, ramp, and sustaining manufacturing of 10th and 11th generation Intel CPUs at the 10 nm process node.

Lowe's Companies, Inc.

Hardware Department Customer Service Associate (CSA)

Spring 2018 – Spring 2019

Worked on and off the sales floor giving customers the best experience possible.

McCoy Russell LLP

Patent Technology Specialist

Winter 2018

Worked as a technical staff/consultant evaluating, preparing, revising, prosecuting, and taking office action on patents for clients.

University of California, Irvine

Advanced Materials Chemistry/Chemical Engineering Laboratory Teaching Assistant

Spring 2017

Worked as a TA in Prof. Yee's CBEMS 160 class, where I designed and implemented two 4-hour advanced undergraduate laboratories, ran multiple weekly lab sections, held office hours, and proctored examinations.

Organic Chemistry Laboratory Teaching Assistant

Winter 2017

Worked as a TA in Prof. Link's CHEM 51LB class (Organic Chemistry Lab 1), where I ran multiple weekly lab sections, held office hours, and proctored examinations.

General Chemistry Laboratory Teaching Assistant

Fall 2014 – Spring 2015, Fall 2015

Worked as a TA in Prof. Edwards' CHEM 1C and 1D classes (General Chemistry Labs 1 and 2), where I ran multiple weekly lab sections, held office hours, and proctored examinations.

Physical Sciences Undergraduate Mentoring Program (PSUM) Mentor

September 2014 – May 2015

Helped expose undergraduates to the career and networking opportunities offered by the School of Physical Sciences and STEM in general.

Stanford University

Splash Teacher

November 2013

Co-taught a class, “P3083: Magic Sand,” for Splash, the educational enrichment program of the Stanford Educational Studies Program (ESP).

Portland Community College

Mathematics and Science Tutor

2009 – 2011, Spring 2014

Worked in the Rock Creek Campus Student Learning Center (SLC), a drop-in tutoring center where students can come and get help with math and science problems and check-out textbooks.

Calculus Teaching Assistant

Winter 2010

Worked as a TA in Prof. Barman's MTH 251 (Differential Calculus) class, where I tutored during the in-class recitation and graded in-class problem sets.

Student Judge for Intel ISEF Qualifying Tournament

Winter 2009

Volunteered as a science fair student judge for a regional Intel science fair at the Portland Community College Sylvania Campus.

Publications:

- 5) Mukazhanova, A.; Trerayapiwat, K. J.; Mazaheripour, A.; Wardrip, A. G.; Frey, N. C.; Nguyen, H.; Gorodetsky, A. A.; Sharifzadeh, S. Accurate First-Principles Calculation of the Vibronic Spectrum of Stacked Perylene Tetracarboxylic Acid Diimides. *J. Phys. Chem. A. Soc.* **2020**, *124* (16), 3055–3063. DOI: 10.1021/acs.jpca.9b08117
- 4) Dibble, D. J.; Kurakake, R.; Wardrip, A. G.; Bartlett, A.; Lopez, R.; Linarez, J. A.; Firstman, M.; Schmidt, A. M.; Umerani, M. J.; Gorodetsky, A. A. Aza-Diels-Alder Approach to Diquinolinetetracene and Polydiquinolinetetracene Derivatives. *Org. Lett.* **2018**, *20* (3), 502–505. DOI: 10.1021/acs.orglett.7b02970
- 3) Mazaheripour, A.; Kladnik, G.; Jocson, J.-M.; Wardrip, A. G.; Markegard, C. B.; Frey, N.; Cossaro, A.; Floreano, L.; Verdini, A.; Bartlett, A.; Burke, A. M.; Hüskén, N.; Miller, K.; Van Wouterghem, K.; Lopez, R.; Lu, M.; Masurkar, A.; Dickson, M. N.; Sharifzadeh, S.; Nguyen, H. D.; Kymissis, I.; Cvetko, D.; Morgante, A.; Gorodetsky, A. A. Unexpected length dependence of excited-state charge transfer dynamics for surface-confined perylenediimide ensembles. *Mater. Horiz.* **2017**, *4*, 437–441. DOI: 10.1039/c6mh00465b

- 2) Wardrip, A. G.; Mazaheripour, A.; Hüsken, N.; Jocson, J.-M.; Bartlett, A.; Lopez, R. C.; Frey, N.; Markegard, C. B.; Kladnik, G.; Cossaro, A.; Floreano, L.; Verdini, A.; Burke, A. M.; Dickson, M. N.; Kymissis, I.; Cvetko, D.; Morgante, A.; Sharifzadeh, S.; Nguyen, H. D.; Gorodetsky, A. A. Length Independent Charge Transport in Chimeric Molecular Wires. *Angew. Chem. Int. Ed.* **2016**, *55*, 14267–14271. DOI: 10.1002/anie.201605411
- 1) Umerani, M. J.; Dibble, D. J.; Wardrip, A. G.; Mazaheripour, A.; Vargas, E.; Ziller, J. W.; Gorodetsky, A. A. Synthesis of polyquinolines *via* an AA/BB-type aza-Diels–Alder polymerization reaction. *J. Mater. Chem. C* **2016**, *4*, 4060–4066. DOI: 10.1039/C5TC03974F

Presentations:

The 2nd International Symposium on the Synthesis and Application of Curved Organic π -Molecules & Materials (CURO-Pi II)

September 12th–14th 2016

Research Poster Session

“Length-Dependent Exciton Dynamics in Surface-Confined π -Stacked Molecular Wires”

251st American Chemical Society National Meeting and Exposition

March 15th 2016

Oral Presentation

“Electrochemical characterization of DNA-inspired organic nanowires”

Symposium of Undergraduate Research and Public Service (SURPS)

October 17th 2013

Research Poster Session

“Kinetics of the Surface Cu(I) Catalyzed Azide–Alkyne Cycloaddition ‘Click’ Reaction”

Symposium of Undergraduate Research and Public Service (SURPS)

October 4th 2012

Research Poster Session

“Examining the Role of the Copper Catalyst in the Triazole-forming ‘Click’ Reaction at Surfaces”

Oregon Space Grant NASA Student Symposium

November 5th 2010

Oral Presentation and Research Poster Session

“Modeling Microwave Spectra from Cometary Comae in Support of the Rosetta Mission”

Awards and Honors:

Lowe's of McMinnville Oregon, July 2018 Employee of the Month.
University of California, Irvine School of Physical Sciences Graduate Fellowship
Bing Summer Program (REU), Department of Chemistry, Stanford University
President's List (Highest Honors), Portland Community College
Oregon Space Grant Summer Research Fellow (REU), Jet Propulsion Laboratory, NASA
Oregon Space Grant Freshman/Sophomore Undergraduate Scholarship

Organizations:

Alpha Chi Sigma (Alpha Alpha Colony), *inducted Spring 2013*
American Chemical Society, *joined Summer 2012*
Phi Theta Kappa (Beta Gamma Lambda Mission), *joined 2010*

Skills:

Experimental Techniques

Air-sensitive synthetic chemistry (Schlenk line/vacuum gas manifold), Atomic Force Microscopy (AFM), Chemical Vapor Deposition (CVD), Clean Room Experience, Contact angle goniometry, Cyclic Voltammetry (CV), Differential Scanning Calorimetry (DSC), Dynamic Mechanical Analysis (DMA), Electrochemical Impedance Spectroscopy (EIS), Energy-Dispersive X-ray Spectroscopy (EDS), Fourier Transform Infrared Spectroscopy (FTIR), Gas Chromatography (GC), High-Performance Liquid Chromatography (HPLC), Hot-stage optical microscopy, Electrospray Ionization Mass Spectrometry (ESI-MS), Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry (MALDI-MS), Near Edge X-Ray Adsorption Fine Structure (NEXAFS), Nuclear Magnetic Resonance Spectroscopy (NMR), Photolithography, Rotary Evaporation, Scanning Electron Microscopy (SEM), UV-Vis spectroscopy, and X-ray Photoelectron Spectroscopy (XPS).

Programming and Software

AutoCAD/Autodesk Inventor, C/C++, ChemDraw, COMSOL Multiphysics, Gaussian/GaussView, Igor Pro, LabVIEW, Linux/Unix, Maple, Mathematica, MATLAB, Mestrelab Mnova, Microsoft Office Suite, Microsoft Visio, PyMOL, Python, SpinWorks, Visual Molecular Dynamics (VMD).

Other

Experience working in cleanroom/fab environment. Machine shop trained. Can solder under microscope. Can operate several forklifts (standard, narrow-aisle reach, and order picker). Hobbies include: amateur locksmithing, remote-controlled (RC) aircraft, robotics, hydroponic/aeroponic agriculture, and mircorbrewing. Saltwater aquarium setup and upkeep.