

Harrison R. Griffin

CONTACT INFORMATION

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EDUCATION

B.S., Physics, Union College, Schenectady, NY, USA

June 2016

G.P.A.: **3.84**/4.00

Summa Cum Laude, With Honors in Physics

Minor: Mathematics

Thesis Topic: Heat of Fusion of Primary Alcohol Confined in Nanopores

Thesis Advisor: Dr. Samuel Amanuel

Relevant Courses—Condensed Matter Physics, Quantum Mechanics, Computational Physics, Electronics, Classical Mechanics, Electrodynamics, Modern Experimental Physics, Integral Vector Calculus, Differential Equations, Applied Mathematics, Logic and Set Theory, Intro Chemistry

WORK EXPERIENCE

Darkfield Microscopy and SEM Defect Engineer
GLOBALFOUNDRIES, Albany Area, NY, USA

April 2017–Present

- Formulate effective inline defect inspection techniques and recipes on darkfield microscopy and SEM tools.
- Work with Process Integration and Advance Module Engineering teams to improve capture rate of defects of interest.
- Generate and manage recipes for automatic defect image classification.

RESEARCH EXPERIENCE

Strain Engineering Graphene Transistors

Aug 2016–Jan 2017

Champagne Research Group, Concordia University, Montreal, QC, Canada

- Microfabrication of monolayer suspended graphene channels via photolithography, e-beam lithography, thermal evaporation, RIE, wet etching.
- Characterize devices via optical microscope, tilted SEM, Raman Spectroscopy.
- Wire bond and package devices for measurement in He-3 cryostat.
- Build Mathematica model to simulate varying strain and magnetic field on suspended graphene devices.

Phase Transitions of Nano-Confined 1-Decanol.

June 2015–June 2016

Department of Physics, Union College, Schenectady, NY, USA

- Prepare samples of silica nanopores filled with 1-Decanol.
- Precisely heat and cool sample via Differential Scanning Calorimeter to measure energy of phase transitions.
- Explore and understand the effects of nanoscale confinement and overnormalization of Heat of Fusion.
- Presented results at American Physical Society March Meeting.

Fabrication of Self Ordering Alumin Oxide Nanopores.

March–Oct 2015

Department of Physics, Union College, Schenectady, NY, USA

- Prepare samples of pure aluminum via mechanical polishing, electropolishing, and thermal annealing.

- Anodize aluminum to create self-ordered array of AAO nanopores with diameters of 200-300 nm.
- Characterize pores via SEM and AFM.
- Presented results at Union College Summer Research Series.

Developing Optical Tweezers.

Summer 2014

Department of Physics, Union College, Schenectady, NY, USA

- Machined aluminum parts and aligned optical components.
- Successfully trapped 0.5 and $1\mu m$ polystyrene beads.
- Created programs using MATLAB to control piezoelectric stage to move particles at precise velocities in different patterns.
- Presented results at Union College Summer Research Series.

TEACHING
EXPERIENCE

Teaching Assistant, Concoridia University

Fall 2016

PHYS 252, Optics

Teaching Assistant, Union College

Fall 2013–Spring 2016

PHY 120, Matter in Motion

PHY 121, Principles of Electromagnetics

SCIENTIFIC
INSTRUMENTS

Characterization—Scanning Electron Microscope, Optical Microscope, Atomic Force Microscope, Raman Spectroscopy.

Microfabrication—Photolithography, E-Beam Lithography, Reactive Ion Etching, Wet Bench, Wire Bonder, Thermal Evaporator.

COMPUTER
SKILLS

Languages—Proficient in Mathematica, Python, LaTeX. Experience in Javascript, Bash, HTML, CSS.

Operating systems—Windows, Linux.

Software—Proficient in Mathematica, Igor Pro. Experience in MATLAB.

LANGUAGE SKILLS

English—**Native**; Spanish—**A2**; French—**A1**