



Acamaro Cutcher

Research Experience

Theoretical / Computational Modeling Experience:

- Guided by [Brandon Peden](#), WWU Physics Senior instructor, I applied Maxwell's equations, boundary conditions and Bloch's theorem to semi-infinite metal insulator metal (MIM) devices and infinite superlattice models.
- Computed in Mathematica the dispersion relations and electric field plots for both finite and infinite superlattice structures. [Access Sample Code on GitHub.](#)
- Methods were sufficient and comparable to guide laboratory experiments of thin film devices for Surface Plasmon Resonance.

Laboratory Experience:

- Thermal and sputter deposition process of thin Gold & TiO₂ films
- Reflectance measurements of thin film devices done by attenuated total internal reflection
- Thickness measurement techniques including Atomic Force Microscopy and X-Ray Reflectometry

Work History

Research Assistant – LSAMP

Portland, OR Liubomir Chiriac

09/2023-Present

LSAMP has provided me with the opportunity to work in Dr. Liubomir Chiriac exploring finite group embedding questions of order 15 or less.

Tutor – Learning Center

Portland, OR

09/2022- 09/2023

Support and help students solve various problems in mathematics and physics, which include topics from basic mathematics to Linear algebra and Differential Equations.

Line Cook – VeggieGrill

Portland, OR

05/2022-09/2022

I prepare various food items and perform closing duties, such as cleaning the floors, changing food containers, clean/remove/replace oil from fryers.

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Portland, OR 97221

Education

Portland State University

Spring 2022-Present

Portland, OR

Expected Graduation Date: Spring 2024

Western Washington University (WWU)

2019-2021

Bellingham, WA

South Whidbey High School

High school diploma 2019

Langley, WA

International Baccalaureate Diploma 2018

Publication

“[Excitation of “forbidden” guided-wave plasmon polariton modes via direct reflectance using a low refractive index polymer coupling layer](#)”, Journal Plos One, October 2022.

Skills

Programming Knowledge

- Mathematica
- Java
- Python

Math Knowledge

- Calculus
- Linear Algebra
- Number Theory
- Differential Equations.
- Abstract Algebra
- Basic Analysis

Fluent in both Spanish & English

Fabricator – Davis Tool, Inc.

Hillsboro, OR

09/2021-03/2022

Deburred, grained, orbital sanded & removed shaker tabs of diverse metal parts of variant complexities, material handler, and other activities.

Research Assistant – Western Washington University

Bellingham, WA

Summer 2020, 2021

Office Assistant – Western Washington University

Bellingham, WA

11/2019 – 3/2020

Graded homework assignment for teachers, attended to phone calls, created posters for the Physics Department.

Scholarships & Stipends WWU

- Jarvis Memorial Summer Research Stipend 2021
- Mickey and Carole Ghio Science Scholarship 2020-2021
- MAP Scholarship 2020-2021
- Dave Fitzpatrick Math & Stats Scholarship 2023-2024
- Mercer Family Foundation Scholarship 2023-2024