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Andrew Huchala

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Employment

University of Oregon
Mathematics Graduate Teaching Fellow **2019 - present**
Instructor of record for 13 undergraduate courses, teaching assistant for 18 sections, and grader for 5 advanced courses.

University of Washington, Seattle
Graphene Nanodevice Lab under Prof. David Cobden **Summer 2017 - Fall 2017**
Conducted research with a team of graduate physics students fabricating topological insulating/superconducting devices. Also led a team of undergraduate physics and computer science students working on computer vision techniques (color clustering, perceptrons/neural networks) for monolayer material collection.

Sage Math Cloud (now CoCalc) under Prof. William Stein
SageManifolds project **Fall 2015 - Winter 2016**
Created a physics section of math website to aid users in computations/visualizations of general relativity with interactive graphics of curved spacetime, equations, etc.

Web Developer **Summer 2014 - Winter 2015**
Collaborated with a small team on front end web development, bug testing, bug fixing, documentation.

Education

University of Oregon
Ph.D. in Mathematics. **2026 (expected)**
Dissertation: *Griffiths Residues for Grassmannians*,
supervised by Nicolas Addington.

University of Washington, Seattle **2018**
B.S. in Mathematics.
Thesis: *Repeated Dimensions of Semisimple Lie Algebra Representations*,
supervised by William McGovern.
B.S. in Physics (comprehensive).
Mathematics degree with honors.

Papers and Preprints

Bounded core partitions and Borel–Weil–Bott **2025**
with F. Gossow.
Submitted. arXiv:2510.17239.

Pole order reduction via Griffiths residues on Grassmannians **2026+**
with A. Yae.
(in preparation).

Grants and Awards

NSF Summer Funding (under RTG Grant no. DMS-2039316) **Summer 2024**

Teaching

University of Oregon: *instructor of record unless noted otherwise*

Math 251: Calculus I	**Fall 2025**
Math 636 Algebraic Topology [Grader]	**Spring 2025**
Math 251: Calculus I	**Winter 2025**
Math 251: Calculus I	**Fall 2024**
Math 458: Cryptography [Grader]	**Spring 2024**
Math 607: Applied Mathematics [Grader]	**Spring 2024**
Math 246: Calculus for Biological Sciences	**Fall 2023**
Math 343: Statistical Models [Grader]	**Spring 2023**
Math 425/525: Statistical Methods [Grader]	**Spring 2023**
Math 111: Precalculus	**Winter 2023**
Math 241: Calculus for Business [TA, 4 classes]	**Fall 2022**
Math 107: Voting Theory	**Summer 2022**
Math 112: Trigonometry	**Spring 2022**
Math 112: Trigonometry	**Winter 2022**
Math 243: Statistics [TA, 4 classes]	**Fall 2021**
Math 107: Voting Theory	**Summer 2021**
Math 111: Precalculus	**Summer 2021**
Math 241: Calculus for Business [TA, 4 classes]	**Winter 2021**
Math 243: Statistics [TA, 4 classes]	**Fall 2020**
Math 101: Foundations of Math Modeling	**Summer 2020**
Math 111: Precalculus	**Spring 2020**
Math 111: Precalculus	**Winter 2020**
Math 111: Precalculus [TA, 2 classes]	**Fall 2019**

Art Exhibitions

Girls' Angle Bulletin **October 2021**
Magazine to encourage girls' interest in mathematics Online Issue

Research as Art Competition **December 2020**
University of Oregon Online Gallery
Permanent installation in Eugene Airport

Creativity Counts **April - July 2020**
Jordan Schnitzer Museum of Art, University of Oregon Online Gallery

Leadership, Community Service, and Outreach

Secretary, local chapter of American Mathematical Society (AMS)	**2023 - 2026**
Organizer, Graduate Student Teaching Seminar	**2024 - 2025**
Organizer, Graduate Student Combinatorics Seminar	**2023 - 2024**
Mentor, Directed Reading Program for undergraduates	**2022 - 2023**
Mentor, Incoming Graduate Students	**2021**

Presentations

t-Core Partitions and Borel–Weil–Bott **Oct 2025**
Student Combinatorics Seminar, University of Oregon

Effective Use of Prediction in Teaching **Oct 2025**
Student Teaching Seminar, University of Oregon

MAA Best Practices of Course Design **May 2025**
Student Teaching Seminar, University of Oregon

The Hirzebruch-Riemann-Roch Theorem **May 2025**
Student Combinatorics Seminar, University of Oregon

A Framework for Understanding the Quality of Evidence Use in Education **Feb 2025**
Student Teaching Seminar, University of Oregon

The Weil Conjectures **Feb 2025**
Student Geometry Seminar, University of Oregon

Access and Equity in the Classroom **Jan 2025**
Student Teaching Seminar, University of Oregon

Hodge Theory in Positive Characteristic **Nov 2024**
Student Algebra Seminar, University of Oregon

Universal Design for Learning **Nov 2024**
Student Teaching Seminar, University of Oregon

Educational Benefits of Students Self-Explaining Material **Oct 2024**
Student Teaching Seminar, University of Oregon

Cohomology Ring of Complete Intersections in Complex Projective Space. **May 2024**
Student Algebra Seminar, University of Oregon

Small Teaching: Pretesting **May 2024**
Student Teaching Seminar, University of Oregon

Elliptic Curve Cryptography **April 2024**
Student Combinatorics Seminar, University of Oregon

Sphere Packings and Laminated Lattices **Nov 2023**
Student Combinatorics Seminar, University of Oregon

Spectral Graph Theory and the Action of Frobenius **June 2023**
Student Combinatorics Seminar, University of Oregon

Algebraic de Rham Cohomology and Hodge Theory **May 2023**
Student Algebra Seminar, University of Oregon

Matrix Products on Arithmetic Progressions **Feb 2023**
Student Counting Seminar, University of Oregon

Étale Cohomology **Nov 2022**
Student Algebra Seminar, University of Oregon

The Weil Conjectures **Oct 2022**
Student Combinatorics Seminar, University of Oregon

Projects

Zeta function calculator
Github.com/Ahuchala/ZetaFunctions **2021 - present**
Computes the zeta function of a smooth complete intersection in projective space; ongoing progress on computing the zeta function of smooth hypersurfaces in Grassmannians. See research statement for details and examples.

Hodge diamond calculator **2024 - present**
Ahuchala.com/research
Computes Hodge numbers of complete intersections in projective space and Grassmannians from scratch; limited implementation for complete intersections in partial flag varieties.

Complex function implementations in GLSL **2021 - present**
Implemented geometric, analytic, and number theoretic functions on Cruz Godar's website which run in parallel on the browser. Also, implemented all functions used by this applet for visualizing elliptic curves as complex tori.

Editor of the On-line Encyclopedia of Integer Sequences (OEIS) **2017 - present**
Ahuchala.com/oeis
My website showcases original visualizations for some of my favorite integer sequences. I am an active OEIS contributor, with over a thousand edits and 37 authored sequences.

Technical Skills

Programming Languages
Python, Sage, Javascript, Julia, Java, C, C++, GLSL, Macualay2, Magma, Mathematica

Tools and Packages
CUDA, Gurobi, Keras, TensorFlow

Citizenship

United States