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Andrew Philip Freiburger

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EDUCATION

Northerwestern University Evanston, IL, USA — September 2023 – Present
Degree: Ph.D.; Chemical and Biological Engineering

University of Victoria Victoria, BC, CAN — January 2020 – April 2022
GPA: 8.0 / 9.0 (4.0 / 4.0 eqv.) **Degree:** M.A.Sc.; Civil Engineering Major

Grand Valley State University Allendale, MI, USA — August 2016 – April 2019
GPA: 3.6 / 4.0 **Degree:** B.S. (honors); Chem. major, Bio. minor, Green Chem. certificate

Grand Rapids Community College Grand Rapids, MI, USA — May 2022 – Present
GPA: 3.8 / 4.0 **Degree:** A.A.A.S.; Computer Programming

Grand Rapids Community College Grand Rapids, MI, USA — August 2015 – August 2016
GPA: 3.8 / 4.0 **Degree:** A.S. (honors)

East Grand Rapids High School East Grand Rapids, MI, USA — September 2011 – May 2015
GPA: 3.7 /4.0; 4.22 weighted **Degree:** Diploma (honors)

RESEARCH

Northwestern University, Keith Tyo's Lab — October 2023 – Present

- **Assistant Computational Biologist** (metabolic modeling) for KBase and PMI projects.

Argonne National Lab, Christopher Henry's Group — June 2021 – Present

- **Assistant Computational Biologist** (metabolic modeling) for KBase and PMI projects.

University of Victoria, Heather Buckley's Group — January 2020 – April 2022

- **Software engineer** for models of bacterial biochemistry and desalination geochemistry

Mount Sinai School of Medicine, Jonathan Karr's Lab — December 2020 – April 2022

- **Data scientist** and bioinformatician for Biosimulators.org and Biosimulations.org

Lawrence Berkeley National Lab, Reactive Transport Group — June 2020 – October 2020

- **Software engineer** of geochemical reactive transport during desalination

North Carolina State University, Lucian Lucia's Group — May 2019 – December 2019

- **Metabolomics spectroscopist** of *Cannabis* – w/ Shaw Univ. and a startup GenoVerde Biosciences

Washington State University, Michael Wolcott's Group — May 2018 – August 2018

- **NSF-funded REU** researcher of photocatalyzed oxygen-scavenging cellulosic materials

Grand Valley State University, Dalila Kovacs' Group — October 2016 – June 2019

- **Analytical chemist** of willow metabolomics to identify applications as an alternative feedstock.

EXPERIENCE

Webmaster

Assistant Webmaster, ACS Division of Organic Chemistry — June 2020 – Present

- Maintainer of www.organicdivision.org and www.organicchemistrydata.org
- 2022 ACS ChemLuminary Recipient

Webmaster, ACS Division of Geochemistry — July 2022 – Present

- Maintainer of https://www.acsgeoc.org/

Webmaster, Jewish Studies programs — June 2023 – Present

- Maintainer of www.studyjudaism.net and www.convertingtojudaism.net

Teaching

Instructor

- University of Victoria — May 2021 – August 2021
  - CIVE 210 Sustainable Design

Teacher's Assistant

- University of Victoria — January 2020 – April 2021
  - ECE 340 Applied Photonics and Electromagnetism
  - CIVE 345 Fluid Mechanics
  - CIVE 210 Sustainable Design
  - CHEM 150 and 102 laboratories
- Grand Valley State University — August 2018 – December 2018
  - CHM 109 discussion section

Tutor

- Shaw University — September 2019 – November 2019
  - Organic Chemistry
- Grand Valley State University — August 2017 – April 2019
  - College Reading & Learning Association **certified tutor** of general and Organic Chemistries
- High School Tutor — February 2017 – November 2020
  - Chemistry, Physics, Biology, Mathematics, and Writing

Science Writer

Freelance Science Writer — December 2019 – March 2021

- *Canadian Vegan* magazine (sampled here https://thesustainablevegan.org/reviews/)

Other

Fresh Thyme Farmer's Market Dairy Associate — May – August 2016

- Independently operated the dairy department

Sports and Recreation

- East Grand Rapids Recreation Department
  - Elementary school "Safety Town" Program — June 2014 – August 2014
  - Soccer and Basketball scorekeeper and referee — August 2011 – August 2016
- Southern Little League Baseball Umpire — June 2010 – August 2010

SKILLS

Computer

Python (data science and optimization), Java, C++, HTML & CSS, Git & GitHub, PHREEQ(C/Py), Julia, linux, command prompt, Microsoft office, WordPress

Instruments

^{1}H NMR, ^{13}C NMR, 2D-NMR, GC-MS, GC-FID, HPLC, UV-Vis, FTIR, ICPMS, Bomb Calorimeter, Lyophilizer, Muffle Furnace, Biological Safety Cabinet

Experiments

Matrix casting, Soxhlet Extraction, Steam Distillation, Ball milling, Dual Asymmetric Centrifugation, Plant Cloning, Risk Group II Bacterial Culturing

PRESENTATIONS

Oral (20-minute) Presentations

- ACS Spring National Conference (IN) March 2023
- ACS Spring National Conference (virtual) March 2022
- PacifiChem (virtual) December 2021
- (2 talks) ACS Spring National Conference (virtual) April 2021
- Central Canadian Association on Water Quality (56th) (virtual) March 2021
- ACS Green Chemistry and Engineering (23rd) (VA) June 2019
- GVSU Student Scholar's Day (MI) April 2019

Lightning Talks (3-minute)

- LBNL Molecular Foundry User Meeting (virtual) August 2020
- ACS Fall National Conference (260th) (virtual) August 2020
- ACS Green Chemistry and Engineering (24th) (virtual) June 2020

Poster Presentations

- ACS Fall National Conference (CA) August 2023
- ASM National Conference (TX) June 2023
- ACS Spring National Conference (IN) March 2023
- AIChE National Conference (AZ) November 2022
- ACS Fall National Conference (IL) August 2022
- ACS Spring National Conference (virtual) March 2022
- Central Canadian Association on Water Quality (55th) (virtual) July 2020
- Michigan Forest Bioeconomy conference (2nd) (MI) February 2019
- Center for Undergraduate Research REU symposium (VA) October 2018
- Washington State University Summer research symposium (WA) August 2018
- ACS Green Chemistry and Engineering (22nd) (OR) June 2018

- GVSU Student Scholar's Day (22nd) (MI) April 2018

* A complete list, with full citations, of my presentations are provided on my website (andrewfreiburger.com/CV/conferences.html)

ACCOLADES	NSF Innovation Corps (i-corps) Bay Area graduate	June 2020
	ACS Division of Organic Chemistry Undergraduate Award	April 2019
	Grand Valley State University Honor's college	Fall 2016 – April 2019
	Grand Rapids Community College Honor's college	Fall 2015 – April 2019
	Grand Valley State University Sustainability Award	April 2019
	(7x) Dean's List	Fall 2015 – Present
	President's List	1 Semester
	6th in National "We the People", Center for Civic Ed., competition	Winter 2014
	Michigan Youth Leadership school representative	June 2013
	1st Chair Trumpet in Concert Band	2012 – 2013
	Summa Cum Laude	Fall 2011 – Spring 2015
SCHOLARSHIPS	ACS GEOC Student Travel Award	April 2021
	(3x) University of Victoria Graduate Award	W., Spr., Sum. 2020
	Purdue University Graduate School Expo travel scholarship	September 2019
	Academic and Professional Enrichment Fund award	June 2018, 2019
	Great Finish Grand Scholarship	Fall 2018
OUTREACH	SLAC Science Accelerating Girls' Engagement in STEM (SAGE-S) camp	August 2020
	GVSU Networks of Support K-12 Tutoring	June 2020 – August 2020
	LBNL "Homework Help Volunteers" K-12 Education	April 2020 – May 2020
	British Columbia Virtual Science Fair judge and Mentor	June 2020
	Oakland Science and Engineering Fair judge and Mentor	May 2020
	Article reviewer for the journal of Wood and Fiber Science	September 2019
	Organic chemistry laboratory teaching assistant at Shaw University	September 2019
	Science Olympiad competition volunteer	March 2019
	"Fall in love with STEM" Valentine's day elementary student volunteer	February 2019
	ACS "Chemistry at the Mall" demonstrations	October 2017, 2018
	Guest lecturer for a 100-level chemistry class	October 2017
PERSONAL	Chinese Martial Artist	August 2015 – Present
	Volunteer chemist for the OpenAir Collective DACC initiative	July 2020 – August 2021
	Photography model	August 2017 – August 2020
	Band leader and gig musician	January 2018 – July 2020
	3rd degree Knight of Columbus	October 2018
	Groundswell and Green Wagon Organic Farm volunteer	Summers 2015, 2016
	"Hearts of Gold" charity student representative and public communicator	October 2012 – April 2015
	Michigan Youth Leadership (MYLead) camp counselor	June 2014
	100 hours as a "Safety Town" camp counselor	Summer 2013
	Monthly Church volunteer	2009 – 2013

REFERENCES

Chris Henry, Computational Science Leader, Data Science and Learning, ANL
– Research mentor (May 2021 – Present) chenry@anl.gov

Heather Buckley, Associate Professor, Department of Civil Engineering, UVic
– Research mentor (December 2019 – April 2022) hbuckley@uvic.ca

Lucian Lucia, Professor, Department of Forest Biomaterials, NCSU
– Research mentor (May 2019 – December 2019) lalucia@ncsu.edu

James Krikke, Professor, Department of Chemistry, GVSU
– Research mentor (December 2016 – June 2019) krikkeji@gvsu.edu

PUBLICATIONS

"BioSimulators: a central registry of simulation engines and services for recommending specific tools". *Nucleic Acids Research*. **2022**. https://doi.org/10.1093/nar/gkac331.

"Hemp is the 21st century Tobacco: A Review". *ACS Journal of Agricultural Science and Technology*. **2021**. https://doi.org/10.1021/acsagscitech.1c00114

*A complete list and full citations of my publications is provided on my website https://thesustainablevegan.org/publications/ *