**MAXIMILIAN WEINHOLD**

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**Present passions**

Fluids, phase transitions, legalities, care economies

Mycelium, transboundary governance, large scale symbolic systems

Efficiency algorithms

**Education**

*University of Edinburgh, Edinburgh, Scotland, 2024*

Master of Science

Ecological Economics

*With Merit*

*William and Mary, Williamsburg, VA, 2021*

Bachelor of Science

Engineering Physics & Applied Design (EPAD), Psychology

*Summa cum laude*

*Wakefield High School, Arlington, VA, 2017*

Secondary School Diploma

*Valedictorian*

**Hono(u)rs**

Distinctions in *Spatial Modelling and Analysis* and *Creativity and the Environment,*

University of Edinburgh 2024

Outstanding Poster, National Institutes of Health Postbaccalaureate Poster Day 2022

Summer Research Mentor Award, NIH 2022

Intramural Research Training Award, NIH 2021

Academic dean’s list, William & Mary 2017-2021

**Proffesional Capacity**

*The Last Wind Up*

Sales and watch repair

*May 2025- Present*

*American Indian Institute*

Revitalization coordinator

*January 2025 - May 2025*

Organization and prospecting

*National Institutes of Health,*

Neuron-Glia Signaling and Circuits Unit

*June 2021 – June 2023*

Computational neuroscientist, speech-motor interactions.

Programming; *in-vivo* neurosurgery; R-methods for multiomics. Fiber photometry, optogenetics.Mice, rat, and marmoset models.

*Kaplan-Cohen Tutoring*

Academic tutor

*August 2021 – Present*

Tutor for K-12, university, and postgraduate

Physics, mathematics, chemistry, psychology economics, time management, mentoring.

**Extracurricular Activities**

*Engineers for Change*

1 kW Wind turbine control systems design

*October 2023 – March 2024*

**Academic Research**

***Postgraduate dissertation***

Ecological Economics MSc (23-24)

Decentralized institution and network design using ecology and technology inspirations

***Baltic sea fisheries***

Applications of Ecological Economics (2024)

Agent-Based Model

***Capital Greenspace Project***

Spatial Modelling and Analysis (2023)

GIS, SQL database design, ecological surveying.

***Undergraduate Capstone Projec****t*

Engineering Physics & Applied Design (20-21)

Printed circuit board fabrication - Computer-aided design (CAD) - PCB milling.

***Nano and biomaterials laboratory***

William & Mary; Applied Science (19-20)

Algae biomaterials and imaging, bioreactor for aquaponics, algae cultivation.

**SKILLS**

Python, SQL, R, C++, MATLAB

CAD - Computer-Aided Design; circuits, structures, mechanics

Material-energetic flow analysis

Fluid mechanics and electromagnetism

GIS, Spatial Analysis, Database development

Habitat connectivity, quality, and monitoring

Agent-based modelling, life-cycle analysis, cost-benefit analysis, Bayesian belief networks

Travel cost, contingent valuation, choice experiments, benefits transfer, non-monetary valuation

Experimental design, behavior monitoring, data acquisition, computational processing.

*in vivo* electrophysiology, calcium optometry

Survival surgery - suturing, craniotomy, stereotaxic operation, intracranial injection, optrode implantation

Optical, confocal, SEM, TEM, AFM imaging

Electronic circuit design, milling, and fabrication

**Languages**:

Intermediate Mandarin, French;

Beginner Spanish, Japanese.

**PRESENTATIONS, PUBLICATIONS AND MENTIONS**

Non-vocal motor deficits in a transgenic mouse model linked to stuttering disorders - Millwater, M., **Weinhold, M**., Bragg, C., Kaur, H., Zhang, R., Sheikhbahaei, S. *bioRxiv* Aug 2025

<https://www.biorxiv.org/content/biorxiv/early/2025/08/10/2025.08.08.669441.full.pdf>

A Decentralized More-than-Human World, or, How Can Slime Molds Build Social Movements - **Weinhold M**. *Dissertation Research, University of Edinburgh.* Preprints.org, Sep 2024. <https://doi.org/10.20944/preprints202409.2239.v1>

Don’t Ban Plastic — Rethink How It’s Designed and Make It Part of Our Ecosystem - **Weinhold M**. *Plastics Today*, Feb. 2023. <https://www.plasticstoday.com/materials/dont-ban-plastic-%C2%A0rethink-how-its-designed-and-make-it-part-our-ecosystem>

An open source tool for automated analysis of breathing behaviors in common marmosets and rodents - Bishop, M., **Weinhold, M**., Turk, A., Adeck, A., SheikhBahaei, S. *eLife*, Jan. 2022. Doi: [10.7554/eLife.71647](https://doi.org/10.7554/eLife.71647)

* This work was showcased by the National Institute of Neurological Disorders and Stroke (NINDS) Innovative Research Award, awarded to Mitchell Bishop and our advisor, Shahriar Sheikhbahaei.

Increased concentrations of Lunar dust associated with a denser Lunar atmosphere resulting from heightened human presence and activity on the Moon - **Weinhold, M**., Levine, J. NASA Lunar and Planetary Institute, Feb. 2020: <https://www.hou.usra.edu/meetings/lunardust2020/pdf/5001.pdf>

Lunar Dust and Its Impact on Human Exploration: A NASA Engineering and Safety Center (NESC) Workshop