MAXIMILIAN S. WEINHOLD

308 Baltimore Rd. Apt 2, Rockville, MD 20850 - (571) 373-9238
max.s.weinhold@gmail.com -- linkedin.com/in/max-weinhold -- maximilianweinhold.github.io

RESEARCH INTERESTS

Physio-biochemical ecosystem interactions, pluralist and participatory economics, regenerative ecology, system communication and universality, scaling dynamics, fusion energy, equitable wildlife urban interfaces.

EDUCATION

William and Mary, Williamsburg, VA, 2021
Bachelor of Science in Engineering Physics & Applied Design (EPAD), Psychology
Summa cum laude

Wakefield High School, Arlington, VA, 2017
High School Diploma
Valedictorian

PROFESSIONAL EXPERIENCE

National Institutes of Health, Neuron-Glia Signaling and Circuits Unit
Postbaccalaureate research fellow, June 2021 – Present

Computational behavioral researcher at the National Institute of Neurological Disorders and Stroke. Involved in vocalization and behavioral research; identifying the neural circuits implicated in speech disorders. Project skills: electrocorticography (ECoG) and calcium optrode arrays for recording *in-vivo* neural activity; machine learning models to identify vocalization behaviors and disorders (activity, facial expression, breathing); single-cell sequencing genomic analysis. Research involves working with humans, mice, rats, and marmoset monkeys.

Kaplan-Cohen Tutoring
Academic tutor, August 2021 – Present

Tutor for K-12, university. Subjects include psychology, mathematics, chemistry, biology, physics, economics, government, history, and time management. Lessons typically involve problem sets, essay writing, research articles, and guided explanations. Tutoring is geared toward students from a variety of backgrounds, including those with learning disabilities and special needs.

Engineering Physics and Applied Design Capstone
Designer, Breakout Board Process, August 2020 – May 2021

Project manager and lead designer of printed circuit board fabrication for use in applied research. Project skills: designing and simulating circuit schematics, 3D modelling software and computer-aided design (CAD) development of 2D footprint and 3D board layout, and operation of PCB milling machine and reflow soldering oven for board fabrication. Process recorded and documented for use by William & Mary students and faculty.

Nano and biomaterials Lab
Researcher, Algae Diatoms 3-D Bioprinting, May 2019 – August 2020

Algae biomaterials researcher in the William & Mary Applied Science Department.
Project skills: Algae bioreactor construction, algae cultivation and growth media modulation, scanning electron imaging of diatoms and diatomite (a sedimentary deposit of silica remains of compactified diatoms), design and fabrication of 3-D diatomite bioprinter, and material testing.

SKILLS AND COMPETENCIES

- Python, MATLAB, Octave, and R programming experience
- Skilled educator, tutor, and mentor in a variety of subjects
- Survival surgical skills, laboratory equipment operation
- Competent with machine learning, vision techniques
- Languages:
    - Fluent English;
    - Intermediate Mandarin Chinese, French;
    - Beginner Spanish, Japanese.
- Skilled at CAD and electronic circuit design
- Proficient in EEG analysis
- Advanced Open Water scuba certified
- Familiar with optical, confocal, scanning-electron, and atomic force imaging
- Competent learner, highly self-motivated

AWARDS AND HONORS

- Outstanding Poster Award, National Institutes of Health Postbac Poster Day 2022
- Summer Research Mentor Award, National Institutes of Health, 2022
- Graduated *summa cum laude* with dual degrees in engineering physics and psychology, 2021
- Academic dean's list for all semesters at William & Mary
- Valedictorian, Wakefield High School 2017

PRESENTATIONS, PUBLICATIONS AND MENTIONS

- **Weinhold, M.**, SheikhBahaei, S. "Behavioral Defects in Mice with human GNPTAB stuttering mutations: Hyperactivity, Initiations, and Interruptions." Post-baccalaureate Poster Day, May 2022.
- Bishop, M., **Weinhold, M.**, Turk, A., Adeck, A., SheikhBahaei, S. "An open source tool for automated analysis of breathing behaviors in common marmosets and rodents." eLife, Jan. 2022. Doi: 10.7554/eLife.71647
- **Weinhold, M.**, Levine, J. "Increased concentrations of Lunar dust associated with a denser Lunar atmosphere resulting from heightened human presence and activity on the Moon." 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 Technical Memorandum: https://ntrs.nasa.gov/citations/20205008219
- Learning about dust key to return of NASA's lunar mission: https://www.dailypress.com/virginiagazette/opinion/va-vg-ed-shatz-apollo-0708-20200706-7rd4ehk4ojbwbn3mlqh64dyhle-story.html
- Gen Z in Hampton Roads to strike for climate action: https://www.dailypress.com/news/dp-nw-climate-strikes-20191204-4jbnb2256vgkbglfsjmpm3m65e-story.html
- A dusty road leads back to the Moon: https://www.dailypress.com/virginiagazette/opinion/va-vg-ed-shatz-0918-20190916-nzvhmnetvjbbdjxmrzvk4p5bva-story.html

EXTRAOCCUPATIONAL ACTIVITIES

- Experimental garden-scale ecosystem engineering
- SeedtheWorld – an initiative to connect stakeholders (currently within the US, Canada, and Mexico) with free, native seeds for rewilding and restoring efforts
- Volunteering at Rockville Science Center for science education and outreach
- Activist and advocacy op-eds
- Painting, sculpting, piano, guitar,
- Designed an autonomous fleet of miniature, ML-driven ships for trash cleanup in a local lake.
- Organized and managed a Climate Strike in affiliation with the Sunrise Movement.
- Learning, bridging, and exploring