MAXIMILIAN 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

- Interested in physio-biochemical marine ecosystems, biomimetic engineering, conservation and implementation science, behavioral neuroscience, and complex, interacting systems.

EDUCATION

William and Mary, Williamsburg, VA

- Graduated *summa cum laude* in Engineering Physics & Applied Design (EPAD) and Psychology

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. Chiefly involved in vocalization research, identifying the neural circuits involved in speech production and disorders. Project skills include: electrocorticography (ECoG) and calcium optrode arrays for recording *in-vivo* neural activity, using machine learning models to identify vocalization behaviors and disorders (activity, facial expression, breathing), and performing single-cell sequencing genomic analysis. Research involves humans, rodents, and marmoset monkeys.

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 include: 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 was recorded and documented for use by William & Mary students and faculty.

Schniepp Nanomaterials and Imaging Lab

Researcher, Algae Diatoms 3-D Bioprinting, May 2019 – August 2020

- Biomaterials researcher in the William & Mary Nanomaterials and Imaging Lab. Project skills include: 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.

ADDITIONAL SKILLS

- Skilled in Python, MATLAB and adept at C++, Octave, and R programming
- Tutoring and mentoring experience in physics, psychology, biology, chemistry, mathematics, economics, international politics, and time management.
- Competent with machine learning and vision techniques
- Fluent in English, conversational in Mandarin Chinese, beginner French, Spanish, Japanese
- Skilled at CAD and electronic circuit design
- Proficient in MATLAB EEG analysis
- Advanced Open Water scuba certified
- Familiar with optical, confocal, scanning-electron, and atomic force imaging
- Competent learner, highly self-motivated

EXTRAOCCUPATIONAL ACTIVITIES

- Actively involved in sustainability and conservation efforts
- Designer for an autonomous fleet of miniature, ML-driven ships for trash cleanup in a local lake.
- Published an extended abstract on increased concentrations of dust following sustained lunar human presence at The Impact of Lunar Dust on Human Exploration Workshop, a conference organized by the NASA Lunar and Planetary Institute.
- Organized and managed a Climate Strike in affiliation with the Sunrise Movement.
- Constructed a home lab to perform research in genetics, biological imaging, chemistry, electrical engineering, and energy storage devices.
- Painter, sculptor, gardener, musician, and writer
- Self-taught in a variety of different fields and interests

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

PUBLICATIONS AND MENTIONS

- 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
- 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