

Ethan O'Keefe, Biochemist

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About



Hi, I'm Ethan. With a B.S in Biochemistry and a minor in economics, I have considerable experience working on both small- and large-scale research projects. I've used my passion for research and data modeling in the fields of chemistry, molecular biology, and neuroscience to gain valuable experience in fast paced and highly efficient laboratories.

In my spare time I play guitar, piano and drums, and compose music. I follow golf, football, and am an avid F1 fan.

I am currently looking for a full-time role in a research focused lab.

Education

University of New Hampshire (UNH), Durham, NH

B.S. Biochemistry, Molecular and Cellular Biology, Minor in Economics

May 22

Achievements

- Advanced GPA: 3.75
- Dean's list High Honors, Fall 2020, Spring 2021, Spring 2022
- Dean's list Honors, Fall 2021

Graduate Certificate; Data Science

Jan 23 - May 23

Relevant Coursework: Molecular Biology Research Methods, Organic Chemistry, Calculus, Genomics and Bioinformatics, Principles of Biochemistry, Data Architecture, Data Mining and Predictive Modeling

Skills and Training

Biochemical/Molecular/Cellular Biology: PCR, ddPCR, gel electrophoresis, ELISA, NMR spectroscopy, DNA extraction, microscopy, aseptic technique, pipetting, pH titration, distillation, serial dilutions, cell culturing, gram staining.

Data Modeling: RStudio, Python, Excel, Command line, Med Associates custom programming language, MedPC to Excel, Snapgene, QX Manager, Qiime2.

Technical: soldering, circuit board repair, repair and usage of Med Associates equipment, usage of Qiacube connect system and various protocols, lab safety training, biohazard safety training.

Animal Model: rat husbandry and care, subcutaneous and intraperitoneal injections on rats, suturing, flushing jugular catheters, use of rats with Med Associates operant chambers, intracranial brain surgery on rats, cryostat brain sectioning, mounting brain tissue on slides, rat anesthesia training.

Professional: grant writing, excellent mathematical comprehension, scientific writing, interpersonal communication, proctoring.

Research and Projects

Genomics and eDNA Processing Lab, UNH Department of Civil/Environmental Engineering

Apr 22 - Jan 23

Research Technician

- Principle Investigator: Dr. Alison Watts
- Archived, extracted, amplified and processed eDNA samples for several projects contracted by the team.
- Analyzed data using quantification software to draw conclusions on project progress and help direct next steps.
- Assembled final project reports for partnering agencies.
- Trained new undergraduate team members on core molecular lab techniques.

Lead Undergraduate Research Assistant

- Principle Investigator: Dr. Sergios Charntikov
- Project leader on two studies, secured grant funding and presented at a conference, authorships promised:
 - o Creating an endophenotype of individuals vulnerable to ethanol abuse using behavioral and neurological markers in male and female rats.
 - o Examining the role of the corticostriatal pathway in learning with nicotine stimulus in rats.
- Led and trained a team of undergraduate researchers; oversaw generation and collection of data, monitored project progress, supervised shifts and project work.
- Analyzed and reported on behavioral data; used large scale behavioral data sets to identify components of drug addiction and used them to help shape procedures.
- Animal handling: gained proficiency in rat husbandry, injections, holds, surgeries and perfusions to arrange experimental conditions for unbiased data collection and harvesting.

Relevant Work Experience

Population Genetics, UNH, Durham, NH

Fall 2022

Adjunct Teaching Assistant

- Assisted with sampling sessions and extracted students' sampling efforts.
- Worked with professor to plan projects for future semesters of the class, assisted in creating and ordering primers and supplies, optimized relevant protocols for academic use.

Intro to Physics 2, UNH, Durham, NH

Spring 2022

Learning Assistant

- Planned content and facilitated group work sessions, aided students with learning process and graded their efforts.

UNH Covid Lab, UNH Hubbard Center for Genome Studies, Durham, NH

Sep 20 - Aug21

Clinical Lab Assistant

- Responsible for initial specimen intake and processing of university population's Covid samples.
- Coordinated with team to optimize detection protocols for large sample pools.
- Worked closely with the SARS- Cov-19 virus in a BSL2 lab and maintained an aseptic environment.

Research Awards and Publications

Effects of Inactivation of the Corticostriatal Pathway Projecting from Infralimbic Cortex to Posterior Dorsomedial Caudate-Putamen on Learning in Male Rats

- Project in Progress, publication promised

Establishing Behavioral and Neurobiological Markers Associated with Ethanol Vulnerable Endophenotype.

- **Undergraduate Research Award**, Spring 2022
 - o Research Budget: \$1,200, Stipend: \$1,000
- Project in Progress, publication promised

Conferences

UNH Undergraduate Research Conference, Durham, NH

Apr 22

Presenter

- Identifying Vulnerable Ethanol Endophenotypes using Behavioral and Neurobiological Markers

National Conference of Undergraduate Research, Eau Claire, WI

Apr 23

Poster Author

- Identifying Vulnerable Ethanol Endophenotypes using Behavioral and Neurobiological Markers