

CATHERINE BUTLER

Phone: (978) 770-7549

Email: catherine.butler@wne.edu

Linkedin: <https://www.linkedin.com/in/catherine-butler-594718158>

31 Captain Circle
Tewksbury, MA 01876

EDUCATION

- | | | |
|------------|---|------------------------|
| BS | Western New England University, Neuroscience
3.98 GPA
Honors Program for College of Arts and Sciences
Alpha Lambda Delta | Expected December 2021 |
| HSD | Tewksbury Memorial High School (TMHS)
4.45 GPA
Top 5% of the class
<i>Summa Cum Laude</i> | June 2018 |

RESEARCH EXPERIENCE

- | | |
|---|-----------|
| Research Assistant in Electrophysiology Project
Dr. Jacob Krans, Associate Professor of Neuroscience
Western New England University, Springfield, MA | Fall 2019 |
| <ul style="list-style-type: none">• Quantified neural activity of <i>P. Periplaneta</i>'s ventral nerve chord• Utilized literature to devise research proposal and apply a molecular manipulation• Conducted feasibility experiments that utilized extracellular recording techniques• Peer reviewed proposals and presented findings in a PowerPoint presentation | |
| Research Assistant in Behavioral Neuroscience Project
Dr. Michael Jarvinen, Associate Professor of Neuroscience
Western New England University, Springfield, MA | Fall 2019 |
| <ul style="list-style-type: none">• Quantified behavior in genetically modified mice to construct an ethogram• Established inter-rater reliability with peers• Compared the accuracy of focal and scan sampling strategies• Analyzed mouse behaviors using SPSS statistical software• Presented findings in a written report | |
| Research Assistant in Molecular Neuroscience Project
Dr. Michael Jarvinen, Associate Professor of Neuroscience
Western New England University | Fall 2019 |
| <ul style="list-style-type: none">• Quantified dendritic measures in genetically modified mice• Compared the effects of different sodium channel isoforms in Purkinje cells throughout development• Used SPSS statistical software to analyze these comparisons | |

- Project had a special emphasis on Immunohistochemistry (IHC)

Neuroscience Lab Assistant

Fall 2018 – Spring 2019

Dr. Sheralee Tershner, Chair and Professor of Neuroscience

Western New England University

Springfield, MA

- Worked as part of IACUC approved protocol to monitor animal health
- Performed animal husbandry procedures such as cleaning rat and mice cages
- Worked as part of a team to prepare animals for experimentation
- Discussed and analyzed current published paper
- Assisted in animal care for upperclassmen's behavioral neuroscience project

TMHS Student-run Research Project for AP Science Fair

May – June 2017

Shelly Galusha

Tewksbury, MA

- Determine if Pirate Booty contained genetically modified organisms
- Ran PCR using plant and GMO specific primers
- Performed gel electrophoresis on self-made gel and ran a specific protocol to visualize the gel
- Awarded 1st place in AP Science Fair

WORK EXPERIENCES

Writing Center Tutor (part-time)

September 2019 – Present

Western New England University, Springfield, MA

- Received training through a practicum course
- Worked with students to provide tools and guidance in improving their writing, reading, and critical thinking skills
- Took part in multiple workshops relating to Literary Analysis, Student with Disabilities, ESL students, Basic Writer's, and Tutoring Reading

Interviewer (seasonal)

October 2018 – Present

Western New England University Polling Institute, Springfield, MA

- Developed interview and public relations skills through telephone interviews
- Matured survey research skills
- Accurately recorded responses of interviewees on public political opinions

Residential Camp Counselor (summer)

June 2019 – August 2019

YMCA Camp Frank A. Day, East Brookfield, MA

- Cultivated child-care skills
- Supervised and taught water and land elective activities
- Campaigned and partook in evening programs
- Developed interpersonal relationships with international staff and campers

Kitchen Staff (part-time) June 2016 – August 2018
Heatherwood Gracious Retirement Living Community, Tewksbury, MA

- Optimized food and drink preparations
- Practiced customer service skills
- Fostered time management through efficient dishwashing and table setting
- Trained new staff

STEM Intern (part-time/seasonal) July 2017 – August 2017
Thermo Fisher Scientific, Tewksbury, MA

- Pioneered pilot internship program for high school students
- Ran statistical analysis to form a dosimetry report
- Contributed ideas for implementing visual environmental health safety protocols

Food Server (part-time) November 2015 – June 2016
Heatherwood Gracious Retirement Living Community, Tewksbury, MA

- Developed customer service skills
- Enhanced meal service through memorization and efficiency

Youth Umpire (part-time/seasonal) April 2013 – June 2014
Tewksbury Girls Softball League, Tewksbury, MA,

- Ensured fair game-play with assertiveness

HONORS/AWARDS

President's Scholarship/List 2018-2020
Achieved a semester grade point average of 3.80 or above.

Delbridge Family Endowed Scholarship 2019
Awarded to full-time undergraduate who majors in a program within the Departments of Physical and Biological Sciences or Psychology based on financial need and demonstrated academic ability.

TA Grant 2018-2019

Gilbert Grant 2018-2019

AP Scholar Award with Distinction 2018
Awarded for achieving an average score of at least 3.5 on all AP exams taken, and scores of 3 or higher on five or more exams.

William J. DeGregorio Scholar Athlete Award 2018

Samuel and Abigail Adams Scholarship 2018
Awarded to senior students for academic success on MCAS Assessments.

SKILLS/CERTIFICATIONS

Lab Techniques: Acid/Base titration, protein purification, PCR, gel electrophoresis, HIC, TLC, column chromatography, dissection (rat, cow eyeball, & cockroach), dilution, filtration, solution prep, recrystallization, solid purification, NMR and IR analysis, extracellular and intracellular central and peripheral nervous system recordings, extraction

Equipment: micropipettes, microscopes, stereoscopes, micro-centrifuge, thermal cycler, gel electrophoresis chamber, amplifier, oscilloscope, electrical stimulator, reflux apparatus, vacuum filtration, separation funnel

Computer: Proficient in Microsoft Word, Excel, PowerPoint, Outlook, and SPSS

Language: English (fluent)

Social Media: Instagram, @ted.butler46

First Aid Certification: American Red Cross, 6/26/2019

World Travel: Italy, British Virgin Islands

Ropes Training Certification: YMCA, 6/21/19

VOLUNTEER WORK

American Cancer Society Relay for Life	2015, 2016, 2018
Zero Waste Day	2014, 2015, 2016, 2018
Project Linus	2014, 2015, 2016, 2017
Lazarus House Hike for Hope	2015, 2016, 2017
American Cancer Society Fire Truck Pull	2016, 2017
Easter Seals	2015, 2017

OTHER ACTIVITIES/INTERESTS

Fantasy Football	September 2019 – December 2019
<ul style="list-style-type: none">• Executed statistical analysis and conducted research on players to manage a successful team• Placed second in my first year twelve-team league	
Neuroscience Club	September 2018 – Present
Western New England University	

Secretary of RHA Franklin Hall Council
Western New England University

September 2018 – May 2019

President of National Honor Society

March 2017 – May 2018

William J. DeGregorio Chapter at Tewksbury Memorial High School

- Devised record keeping skills to track service projects and member participation
- Community-enrichment building/planning through introducing volunteer opportunities to members
- Fostered leadership and teamwork skills through working with fellow e-board members

Job Shadow

April 2017

MIT Lincoln Laboratory

- Shadowed Lauren Milechin in the Supercomputing center

NSLC for Psychology and Neuroscience

July 5 – 14, 2017

Harvard Medical School and Emmanuel College

Varsity Softball and Volleyball Athlete

August 2014 – May 2018

Tewksbury Memorial High School

- Captain for softball 2018 season and volleyball 2017 season
- High School Softball Eastern State Champions 2016
- Streamlined team volunteering opportunities, planned team meals/big team events (Senior Night), and designed team apparel

Secretary of 2018 Class Council

September 2014 – May 2016

Tewksbury Memorial High School