

# Melanie Quick

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## EDUCATION

**Boston University College of Engineering** | Boston, MA  
Bachelor of Science in Biomedical Engineering, *Magna Cum Laude*  
GPA: 3.78/4.00

May 2019

### *Awards & Recognitions:*

- Outstanding Senior Design Project in Biomedical Engineering
- National Science Foundation Living Computing Project Award
- Undergraduate Student Service Award
- FIRST Robotics Research Scholarship
- Dean's List (All Semesters)

### *Selected Coursework:*

- Systems Biology of Human Disease
- Systems Physiology
- Control Systems in Biology
- Psychological Anthropology
- Device Design & Diagnostics
- Molecular Bioengineering

## WORK EXPERIENCE

**Research Technician**  
**Thomas E. Starzl Transplantation Institute** | Pittsburgh, PA

08/2019 – Present

- Researched and developed preclinical animal models for targeted cancer immunotherapy
- Investigated the role of T cell receptor (TCR) affinity using in vivo models
- Implemented a high throughput, modular cloning system for TCR transfer
- Presented research progress during lab-affiliated company meetings

**Clinical Intern**  
**ACIST Medical Systems, Inc.** | Eden Prairie, MN

05/2019 – 08/2019

- Synthesized contrast-induced acute kidney injury research to ensure FDA compliance of clinical claims
- Developed materials to broaden understanding of company research for non-technical staff

**Research Assistant – Senior Design Project**  
**BU Neuronal Dynamics Lab** | Boston, MA

09/2018 – 05/2019

- Investigated memory storage/recall mechanisms via theta wave signal processing
- Developed a real-time theta wave peak and trough detection algorithm

**Research Assistant**  
**BU Design, Automation, Manufacturing, & Prototyping (DAMP) Lab** | Boston, MA

06/2018 – 05/2019

- Engineered automated assembly platform for recombinase-based genetic circuits
- Presented automated platform at an NSF site visit

**Medical Scribe**  
**Boston Children's Hospital Department of Gastroenterology** | Boston, MA

03/2018 – 05/2019

- Accompanied gastroenterologist into the exam room to document patient history, symptoms, recent diagnostics, and physical exams
- Managed clinical notes in electronic medical record (EMR) system

**Research Intern** 06/2017 – 08/2017  
**Mayo Clinic Department of Otorhinolaryngology** | Rochester, MN

- Published chart review of functional outcomes in HPV+ oropharyngeal carcinoma patients post-robotic surgery
- Developed scripts to expedite data retrieval and organization from patient charts

**Live-in Caregiver** | Rochester, MN 05/2017 – 06/2017

- Administered fluids, medication, and stoma dressing changes to an infant with a G-J tube

**English Teaching Assistant** 01/2017 – 05/2017  
**Grenoble Institute of Technology** | Grenoble, France

- Taught technical language to French engineering university students

**General Chemistry Teaching Assistant** 09/2016 – 12/2016  
**Boston University Department of Chemistry** | Boston, MA

- Guided learning in office hours and lecture
- Led discussion sections and demonstrated example problems

**Software Intern** 05/2016 – 08/2016  
**FurnitureDealer.Net** | Burnsville, MN

- Implemented front-end website design from provided mock-ups
- Corresponded with clients about website features and design iterations

## ACADEMIC WORK

### Peer-Reviewed Publications

Van Abel KM, **Quick MH**, Graner DE, Lohse CM, Price DL, Price KA, Ma DJ, Moore EJ. Outcomes following TORS for HPV-positive oropharyngeal carcinoma: PEGs, tracheostomies, and beyond. *American Journal of Otolaryngology* 2019;40(5): 729-734.

### Oral Presentations

Lahner B and **Quick MH**, Rahsepar B, Noueihed J, White JA. The Effect of Phase-Specific Optogenetic Stimulation on Memory Recall in Mice. Presented at: Biomedical Engineering Senior Design Project Conference, May 2019, Boston MA.

### Poster Sessions

**Quick MH**, Rowe A, Shlomchik WD, Shlomchik MJ. Minor histocompatibility antigen murine model for production of targeted cytotoxic T cells in GVL. Abstract accepted at: 2020 Tumor, Transplant, and Tolerance (TTT) Retreat (poster presentation postponed), April 2020, Pittsburgh PA.

Lahner B and **Quick MH**, Rahsepar B, Noueihed J, White JA. The Effect of Phase-Specific Optogenetic Stimulation on Memory Recall in Mice. Presented at: Northeast Bioengineering Conference (NEBEC), March 2019, New Brunswick NJ.

**Quick MH**, Pavan M, Jung G, Wu J, Zhu X, Lu T, Densmore D. Flexible Automated Platform for the Assembly & Test of Recombinase State Machine-Based Genetic Circuits. Presented at: International Workshop for Biomanufacturing Automation (IWBMA) and Undergraduate Research Opportunities Symposium (UROP), October 2018, Boston MA.

Van Abel KM, **Quick MH**, Graner DE, Lohse CM, Price DL, Price KA, Ma DJ, Moore EJ. Outcomes following TORS for HPV-positive oropharyngeal carcinoma: PEGs, tracheostomies, and beyond. Presented at: Combined Otolaryngology Spring Meetings (COSM), April 2018, National Harbor MD.

## COMMUNITY INVOLVEMENT

**Bethany Community Ministries** | Pittsburgh, PA 04/2020

- Prepared and distributed meals to mitigate food insecurity during the COVID-19 pandemic

**BU Technology Innovation Scholars Program** | Boston, MA 09/2017 – 05/2019

- Organized “Females in STEM” outreach event at BU Academy
- Lead Mentor for BU Academy FIRST Robotics team
- Performed outreach at Boston area high schools to engage teenagers in STEM

**STEM Pathways** | Boston, MA 06/2019 – 05/2019

- Created STEM opportunities for high schoolers with limited access to science resources
- Trained two high school interns in molecular biology techniques

**BU College of Engineering Dean’s Host** | Boston, MA 09/2017 – 05/2019

- Acted as a resource to potential students at College of Engineering events

**Dana Farber Cancer Institute Volunteer** | Boston, MA 09/2017 – 05/2018

- Provided directions, support, and helpful information to patients and their families

**Black Cat Rescue Organization Foster** | Boston, MA 09/2017 – 05/2018

- Fostered two elderly cats and vetted potential adopters

## PROJECTS

**Educational App** | Boston, MA

- Developed a smartphone app for synthetic biology education for STEM Pathways

**Infant Fecal Management System** | Boston, MA

- Used flexible 3D printing techniques to construct a functional balloon catheter
- Corresponded with gastroenterologists to identify medical needs and relevant physiology

## SKILLS

### **Laboratory:**

- |  |                                |                             |
|--|--------------------------------|-----------------------------|
| • Flow cytometry                         | • Colony maintenance           | • Bacterial transformations |
| • Aseptic technique                      | • Animal handling/vaccinations | • Gel electrophoresis       |
| • Mammalian cell culture                 | • Tissue harvest/processing    | • Protocol automation       |
| • Retroviral production/<br>transduction | • Molecular cloning            | • Primer optimization       |

**Languages:** Spanish (Intermediate), French (Intermediate)

**Programming Languages:** C++, Java, MATLAB, Python, HTML, CSS, LaTeX, R

**Software:** FlowJo, GraphPad, SolidWorks, Android Studio, Photoshop, Illustrator, InDesign