Maren Eltze (520) 891-4783 | meltze@bu.edu

PhD Candidate
Biomedical Engineering, Boston University
44 Cummington Mall, Boston, MA 02215

EDUCATION

Biomedical Engineering, PhD September 2021 - Present
Boston University
Translational Research in Biomaterials (TRB) Alum

Biomedical Engineering, BSE, Summa Cum Laude August 2017 - May 2021
Minor: German
Arizona State University
Barrett, the Honors College
New American University Scholar - President's Award
Dean's List 2017, 2018, 2019, 2020, 2021

RESEARCH

PhD Candidate | Boston University
- Pratt Laboratory Spring 2022 – Present
  - Developing novel functional assays for detection and monitoring of oncogenic enzyme activity.

Undergraduate Laboratory Intern | Arizona State University
- Personalized Molecular Diagnostics Laboratory Fall 2018 – Fall 2019
  - Was part of a small team that designed a rapid dehydration diagnostic device for the Barrow Neurological Institute.
  - Took lead in product testing and computational calibration.
  - Presented the device to clinicians at Barrow Neurological Institute.
- Bartelle Laboratory Winter 2019 – August 2021
  - Member of a small team engineering bacteria to develop a sensor for neuroinflammation.
  - Instrumental in developing physical prototypes to run a directed evolution system.
  - Independently granted funding in the Fulton Undergraduate Research Initiative and presented at symposium.
  - Awarded further funding by W.L. Gore & Associates.

High School Laboratory Intern | Sarver Heart Center, University of Arizona Spring 2017
- Designed an experiment protocol, learned different laboratory skills, shadowed lab technicians, and transferred knowledge to a blog: https://bmeinternship.weebly.com/.

TEACHING EXPERIENCE

Graduate Teaching Fellow | Boston University Spring 2023, Fall 2023
Helped teach a Transport course with a co-teaching fellow across two semesters. Ran independent office hours, graded assignments, quizzes, and exams, and generated homework and exam questions.

Undergraduate Teaching Assistant | Arizona State University Winter 2019 – Spring 2021
Part of a small team running a TA-led design class in which students develop a theoretical blood glucose meter. Independently taught class segments, and provided in-class explanations, office hours, and additional support as needed.

Private Tutor | Self- Employed June 2016 – Winter 2020
Developed effective lesson plans and study strategies for middle and high school students during both the school year and the summer.

Teacher's Assistant | BASIS Oro Valley Fall 2016 – Spring 2017
Was responsible for grading assignments, documenting students' grades, and helping students improve their writing styles.

Tutor | The Tutoring Center Spring 2017
Worked with children from 1st grade - 11th grade in studying, completing and understanding homework, and furthering reading, writing, and math skills.

Volunteer Calculus Tutor | BASIS Oro Valley Fall 2015 – Spring 2017
Independently provided weekly 1:1 calculus tutoring to high school students after school hours.

CONFERENCES

Eltze, M. C., Gliford, L., Heier, J. L., Joseph, S. J., Parker, L. L., Pratt, E. D. (2024). Cancer-specific SRC Activity Profiling Using Cell-deliverable Affinity-based Peptide Probes (cAfBPs). *GRS/GRC – Bioanalytical Sensors.* Newport, RI.

Eltze, M. C., Gliford, L., Heier, J. L., Joseph, S. J., Parker, L. L., Pratt, E. D. (2023). Cancer-specific SRC activity profiling using exogenous artificial peptide probes. *BMES.* Seattle, WA.

Eltze, M. C. & Bartelle, B. B. (Eds.). (2020). Directed Evolution for Biosensor Creation. *Fulton Undergraduate Research Initiative Symposium.* Arizona State University.

Eltze, L. M., **Eltze, M. C**., & Garcia, A. (Eds.). (2020). Variations in Salivary Viscosity. *Arizona Psychology Undergraduate Research Conference.* Arizona State University.

LITERATURE

Eltze, M. C. (2021). Developing a Polymer for Treatment of Basal Cell Carcinoma. Arizona State University. https://keep.lib.asu.edu/items/147931

Eltze, L., **Eltze, M.,** & Garcia, A. (2020). Variability of Saliva Viscosity-Potential Impact. In *Oral Health Care*. IntechOpen. https://www.intechopen.com/chapters/73626

Eltze, M., Huber, K., Eltze, L., Smith, K., Soldevila, M., Ross, A., & Garcia, A. A. (2019). Inexpensive Metal Oxide Gas Sensors for Salivary Urea Quantitation.

PROJECTS

Biomedical Engineering Capstone Design | Arizona State University Spring 2020-2021
- Led the prototyping development in a small team that designed a novel hydrogel patch for treatment of superficial basal cell carcinoma.
- Collaborated with a team of experts to ensure technical and clinical feasibility.
- Presented product at the School of Biological and Health Systems Engineering's Biomedical Engineering Symposium.
- Successfully completed and defended Honors Thesis evaluating characteristics of polymer system.
- Received award for diligence and successful project completion.

INDUSTRY EXPERIENCE

Intern | Apex Microtechnology Spring 2020 – Fall 2021
Led and completed all HTML website development projects. Independently managed outward facing technical newsletters. Worked closely with one other colleague to run the marketing and communications department.

Volunteer | Vaccinate State 48 Winter - Spring 2021
Facilitated COVID-19 vaccine distribution among the Phoenix metropolitan area through organization, patient registration, question answering during 26.5 hours of volunteering. These tasks helped ensure efficient and safe vaccination for hundreds of people per day.

Volunteer | Editha House Spring 2019 – Winter 2020
Provided baked goods and emotional support for cancer patients and their families living full-time at the Editha House in Phoenix, AZ.

Volunteer | APEX Microtechnology – APEC Conference Spring 2018
Gained experience in power-electronic devices as well as engineering conventions by volunteering for an analog microtechnology company during the APEC convention in San Antonio, TX.

Volunteer – Inpatient Rehabilitation Activities | Oro Valley Hospital Fall 2015 – Fall 2016
Independently organized and carried out activities for patients to supplement physical and speech therapy in an in-patient setting.

SKILLS

Proficient in:
English, German, 3D Printing, Adobe Photoshop, MATLAB, Microsoft Office Applications, SolidWorks, ZOOM, SPSS, ImageJ, FlowJo

Exposed to:
Spanish, LTSpice, Adobe Illustrator, C++, HTML, Microsoft Excel, Arduino, Mathcad, LabView

AWARDS

- FURI Project sponsorship awarded by W. L. Gore & Associates. November 2020
- Awarded New American University Scholar - President's Award Scholarship.
- Received project professionalism award for capstone design project by class.
- Dean’s List: 2018, 2019, 2020, 2021