

Samuel Braza

Research technician, incoming medical student
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Education

Santa Clara University, B.S. Biochemistry, B.A. Philosophy. Santa Clara, CA. 2020

Research

Enveda Biosciences, Research Technician. 2021

- Drug discovery work aimed at discovering and testing pharmaceutically active compounds in plants.
- Helped develop and test proteomics and metabolomics protocols.
- Performed various experiments on various cells and plant extracts.

Santa Clara University, Abbyad Lab. Research Assistant. 2017-2020

- Helped develop label-free sorting systems, in order to quickly isolate metabolically-active cancer cells for genomic analysis, as well as sort enzymes based on activity.
- Designed experiments and contributed to finding that with surfactant QX-100 present, droplet surface tension is inversely associated with pH.
- Designed and tested many novel microfluidic chips to address sorting issues.
- Wrote portions of two published manuscripts, aided grant writing, wrote Honors Thesis.

UCCS Department of Physics, Glushchenko Lab. Research Assistant. 2016

- Work aimed at improving zinc oxide microrod length through varying reagents.
- Conducted experiments with different reagents and used scanning electron microscopy and optical microscopy to measure rods.
- Reviewed literature and contributed to manuscript writing.

Publications and Presentations

Publications

Horvath, D. G., **Braza, S.**, Moore, T., Pan, C. W., Zhu, L., Pak, O. S., & Abbyad, P. (2019). Sorting by interfacial tension. *Analytica chimica acta* 1089, 108-114.

Pan, C. W., Horvath, D. G., **Braza, S.**, Moore, T., Lynch, A., Feit, C., & Abbyad, P. (2019). Sorting by interfacial tension (SIFT): label-free selection of live cells based on single-cell metabolism. *Lab on a Chip* 19(8), 1344-1351.

Corral-Flores, V., **Braza, S.**, Christensen, T. M., & Glushchenko, A. (2018). Synthesis of zinc oxide microrod arrays and their performance as piezo-generators. *Analytica chimica acta* 33(9), 575-581.

Presentations

Braza, S. (2019). *Label-free enzyme sorting using droplet microfluidics*, MSB 2019. Corvallis, OR.

Employment

Sand Creek High School, Educational Paraprofessional. Colorado Springs, CO. 2020-2021

- Tutored special education students in math and science.
- Tracked student academic standing, contacting students and teachers as necessary.

Self employed, MCAT Tutor 2019-2020

- Tutored many students for the Medical College Admission Test (MCAT).
- Walked students through difficult scientific passages, to help them understand content.
- Developed learning strategies and mnemonics for students.

Skills

- Data and statistical analysis with R and Excel
- Meta-analysis with R and the {meta} package (currently learning)
- Website development and management with R, Blogdown, Hugo, and Netlify
- Document generation with R Markdown
- Image manipulation and editing with Gimp, Adobe Illustrator
- Scientific writing

Volunteer Experience

Crisis Text Line (CTL), Crisis Counselor. 2019-2021

- Helped hundreds of people who text into the crisis line.
- Provided a way for people to cope with stressful or crisis situations, connected them with useful resources specific to each situation.

Santa Clara University EMS, Emergency Medical Technician. Santa Clara, CA. 2018-2020

- Volunteered through my university's EMS organization, responding to many calls in teams with other EMTs.
- Member of the organization's Judicial Board. Dealt with a number of ethically-tricky situations within the group, taking witness statements and deliberating on discipline decisions.

St. Francis Medical Center, Hospital Volunteer. Colorado Springs, CO. 2013-2019

- Volunteered four summers, most recently in 2019.
- Transported patients between ED and Radiology, assisted staff and patients in ED.

ESL Conversation Club, Volunteer. Santa Clara Public Library, Santa Clara, CA. 2018-2019.

- Volunteered with recent immigrants to help them learn English.
- Had conversations about all sorts of topics to include a broad range of vocabulary.

Personal Interests

- *Violinist*: practiced and performed for 18 years, 3 year member of Santa Clara University Orchestra (concertmaster final year). Started string quartet final year.
- *Hiking and mountaineering*: Climbed many 14,000+ foot mountains in Colorado over last 8 years.
- *Philosophy*: Writing and reading philosophy papers, engaging others in discussion.