

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, using literature reviews to identify useful protocols that could be modified for current research needs.
- Performed various experiments on various cells and plant extracts.

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

- Research aimed at developing 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. Performed control experiments to confirm findings.
- Designed and tested many novel microfluidic chips to address sorting issues.
- Led efforts to improve sorting system throughput, coordinating between lab members.
- Wrote portions of two published manuscripts, contributed to grant writing, wrote Honors Thesis, and performed literature reviews to find citations and keep the group up to date on current research.

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.
- Performed analyses with a variety of spectroscopic techniques.
- 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.
- Followed up with students when assignments are missing.

Self employed, MCAT Tutor 2019-2020

- Tutored many students for the Medical College Admission Test (MCAT).
- Walked students through difficult scientific passages, ensuring that they could understand the content.
- Developed learning strategies and mnemonics for students.

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.
- Worked with many patients, on both trauma and medical calls.
- 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 doctors, nurses, 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 philosophy papers, reading philosophical texts and engaging others in discussion.

References

Available upon request. Likely would include Dr. Paul Abbyad (Santa Clara University).