

Summary

Biomedical Engineer. Wide experience in academic biochemistry, biomechanical, and virology research as a research specialist. Experienced in all stages of the academic research pipeline, including collaboration, experiment development and execution, data analysis and visualization, and publication. Goals include moving into the medical research industry as a Data Analyst, developing tools and resources for research, and working in a collaborative team to improve the lives of patients.

Education

- MS Drexel University**, Biomedical Engineering 2014 - 2016
- **Concentration:** Biomedical Technology Development
- BS University of Delaware**, Biomedical Engineering 2010 - 2014
- **Minors:** Bio-electrical Engineering and Chemistry

Experience

- Data Analytics and Visualization Boot Camp**, University of Pennsylvania Sep 2023 - Mar 2024
- Received certification from September 2023 Penn Data Science Boot Camp
 - Passed a 24-week intensive coding program focused on Python, Machine Learning, Big Data, generative AI, Tableau, VBA, Javascript, SQLPostgres/Mongodb database management and Microsoft Excel.
 - Lead several collaborative project groups in healthcare, natural disasters, and fraud prediction.
 - Created and produced projects in different frameworks for data management, analysis, visualization, and presentation.
 - For more information, please refer to <https://eroberts91.github.io/personal-site/>
- Research Specialist C**, University of Pennsylvania School of Medicine Sep 2022 - Jul 2023
Philadelphia, PA
- Helped to identify several drugs for further research in different virus treatments from a several tens-of-thousands drug library.
 - Maintained cell lines, ran assays and performed data analysis and presentation while managing an accelerated weekly viral assay testing pipeline.
 - Worked under Dr. Dave Schultz in the High Throughput Screening Core at the University of Pennsylvania running assays for virus and cancer drug research.
- Research Specialist B**, University of Pennsylvania School of Medicine Dec 2016 - Aug 2022
Philadelphia, PA
- Developed and tested new protocols for self-driven experiments as well as adoption by other researchers in pressure myography and hydrogel-based cell culture assays.
 - Interacted directly with collaborators of Institute for Translational Medicine and Therapeutics(ITMAT) Bio-mechanics Core services, to organize orders for both existing services as well as newly developed services.
 - Lead researcher for new service adaptation including: atomic force microscopy-based mechanical testing, cell-embedded 3D biodegradable hydrogels, cellular traction force microscopy, and pressure myography mechanical testing.

Skills

Lab Research: Aseptic technique, cell culture, tissue culture, cell assay development, immunohistochemistry, immunofluorescence, microscopy, Atomic force microscopy, tissue dissection, pressure myography, 2D/3D hydrogel development and testing, laboratory organization/ordering, journal writing/review

Data: MS Office products, Python, Machine Learning, Big Data, Tableau, VBA, Javascript, SQLPostgres/Mongodb database management, Matlab, Minitab, Bruker Nanoscope Analysis, DMT Myoview, TeX

Collaboration: Inter-Group academic research collaboration, detail-oriented reporting, data synthesis, interpretation and presentation, developing and deploying data-rich tools/methodologies, data analysis, motivation to learn new skills, willingness to take on new challenges, scientific curiosity

University of Pennsylvania School of Medicine

- Roberts, Emilia, et al. "Cell contractility and focal adhesion kinase control circumferential arterial stiffness." *Vascular Biology*, vol. 4, no. 1, 1 Nov. 2022, pp. 28–39, <https://doi.org/10.1530/vb-22-0013>.
- Llewellyn, Jessica, et al. "Efemp1 modulates elastic fiber formation and mechanics of the extrahepatic bile duct." *bioRxiv*, 7 Dec. 2021, <https://doi.org/10.1101/2021.12.05.471313>.
- Camillo, Chiara, et al. "Rage antagonist peptide mitigates age-mediated endothelial hyperpermeability and accumulation of glycoxidation products in human ascending aortas and in a murine model of aortic aneurysm." *bioRxiv*, 24 Oct. 2021, <https://doi.org/10.1101/2021.10.22.465199>.
- Von Kleeck, Ryan, Emilia Roberts, et al. "Arterial stiffness and cardiac dysfunction in Hutchinson–gilford progeria syndrome corrected by inhibition of Lysyl oxidase." *Life Science Alliance*, vol. 4, no. 5, 9 Mar. 2021, <https://doi.org/10.26508/lsa.202000997>.
- Von Kleeck, Ryan, Paola Castagnino, et al. "Decreased vascular smooth muscle contractility in Hutchinson–gilford progeria syndrome linked to defective smooth muscle myosin heavy chain expression." *Scientific Reports*, vol. 11, no. 1, 19 May 2021, <https://doi.org/10.1038/s41598-021-90119-4>.