Kateryna Voitiuk

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EDUCATION

University of California, Santa Cruz   *2019 - Present*
Ph.D. Candidate, Biomolecular Engineering and Bioinformatics   GPA: 4.0
Designing an Electronics and Software Platform for Bio and in Silico Hybrid Neural Networks
Advisors: David Haussler, Mircea Teodorescu

University of California, Santa Cruz   *2015 - 2019*
B.A. Network & Digital Technology   GPA: 3.85
Graduated with Highest Honors in the major
University Honors: Cum Laude

EXPERIENCE

Haussler Lab, Teodorescu Lab, UC Santa Cruz   *2019 - Present*
Graduate Researcher

Designing models and algorithms for interaction with live neural networks
Developing hardware platform for electrical sensing and stimulation of neural activity
Engineering microfluidic scaffolds and protocols for connected organoid models

Haussler Lab, Teodorescu Lab, UC Santa Cruz   *2017 - 2019*
Undergraduate Researcher

Created components of an automated imaging platform for monitoring cell and organoid growth
Built cloud infrastructure for optogenetic experiment remote control
Designed custom hardware for optogenetic stimulation
Designed and manufactured mechanical and fluidic prototypes for organoid culture

Riedel-Kruse Lab, Stanford University   *June - July 2015*
Robotics Research Intern

Created and built 3 pipetting Lego robot designs for STEM curriculum
Programmed automated experiments including dilution gradients, fluid density, and droplet generation

PUBLICATIONS

Baudin, P. V., Sacksteder, R. E., Worthington, A. K., **Voitiuk, K.**, Ly, V. T., Hoffman, R. N., Elliott, M. A. T., Parks, D. F., Ward, R., Torres-Montoya, S., Amend, F., Duran, N. M., Vargas, P. A., Martinez, G., Ramirez, S. M., Alvarado-Arnez, L. E., Ehrlich, D., Rosen, Y. M., Breevoort, A., Schouten, T., Kurniawan, S., Haussler, D., Teodorescu, M., Mostajo-Radji, M. A., 2022. Cloud-Controlled Microscopy Enables Remote Project-Based Biology Education in Underserved Latinx Communities. Heliyon, vol. 8, no. 11. https://doi.org/10.1016/j.heliyon.2022.e11596

Parks, D.F., **Voitiuk, K.**, Geng, J., Elliott, M.A.T., Keefe, M.G., Jung, E.A., Robbins, A., Baudin, P.V., Ly, V.T., Hawthorne, N., Yong, D., Sanso, S.E., Rezaee, N., Sevetson, J., Seiler, S.T., Currie, R., Pollen, A. A., Hengen, K.B., Nowakowski, T.J., Salama, Mostajo-Radji, M. A., S.R., Teodorescu, M., Haussler, D., 2021. IoT Cloud Laboratory: Internet of Things Architecture for Cellular Biology. Internet of Things 2022, 20, 100618. https://doi.org/10.1016/j.iot.2022.100618

Voitiuk, K., Geng, J., Keefe, M.G., Parks, D.F., Sanso, S.E., Hawthorne, N., Freeman, D.B., Currie, R., Mostajo-Radji, M.A., Pollen, A.A., Nowakowski, T.J., Salama, S.R., Teodorescu, M., Haussler,

D., 2021. Light-weight Electrophysiology Hardware and Software Platform for Cloud-Based Neural Recording Experiments. J. Neural Eng. https://doi.org/10.1088/1741-2552/ac310a

Ly, V.T., Baudin, P.V., Pansodtee, P., Jung, E.A., **Voitiuk, K.**, Rosen, Y., Willsey, H.R., Mantalas, G.L., Seiler, S.T., Selberg, J.A., Cordero, S.A., Ross, J.M., Pollen, A.A., Nowakowski, T.J., Haussler, D., Mostajo-Radji, M.A., Salama, S., Teodorescu, M., 2021. Picroscope: Low-Cost System for Simultaneous Longitudinal Biological Imaging. Communications Biology.
https://doi.org/10.1038/s42003-021-02779-7

Gerber, L.C., Calasanz-Kaiser, A., Hyman, L., **Voitiuk, K.**, Patil, U., Riedel-Kruse, I.H., 2017. Liquid-handling Lego robots and experiments for STEM education and research. PLOS Biology 15, e2001413.
https://doi.org/10.1371/journal.pbio.2001413

TECHNICAL SKILLS

Languages	Python, C, C++, Java, Bash, MATLAB
Approaches	Machine Learning, Networks Programming, Concurrent Programming
Web/Markup	LaTeX, Markdown, HTML, CSS
Tools/Platforms	UNIX, Git, Jupyter, Docker, Kubernetes, Amazon Web Services, Redis
Electronics	FPGA, Printed Circuit Board Design
Mechanical	3D Modeling (Autodesk Inventor, Fusion), 3D Printing/Rapid Prototyping, CNC

TEACHING EXPERIENCE

University of California, Santa Cruz

Scientific Principles of Life (BME 18), Teaching Assistant, *Fall 2021*
Robot Automation (ECE 8), Guest Lecture, *Fall 2021*
Alisal High School AP Biology, Mentor/Guest Teacher, *Fall 2020 - Present*
Genomics Institute Research Mentoring Internship (RMI) program, Mentor, *Fall 2020 - Spring 2021*
NeuroTechSC, Project Mentor, *Spring 2020 - Spring 2021*
Scientific Principles of Life (BME 18), Course Developer & Course Assistant, *Summer 2018 - Fall 2018*
Computer Systems and C Programming (CMPE 13/L), Tutor/Grader, *Winter 2017*
Computer Systems and Assembly Language (CMPE 12/L), Tutor/Grader, *Fall 2016*

Graham Middle School

Robotics Team Mentor, *September - November 2014*

POSTERS & PRESENTATIONS

2022 CSHL Meeting: Development and 3D Modeling of the Human Brain (Poster)
2022 SfN Annual Conference (Poster)
2022 Asilomar Bioelectronics Symposium (Poster)
2022 PBSE Annual Conference (Poster)
2022 18th Annual Graduate Research Symposium (Talk)
2021 NHGRI Centers of Excellence in Genomics Science, 19th Annual Grantee Meeting (Flashtalk)
2021 PBSE Annual Conference (Poster)
2021 NHGRI Research Training and Career Development Annual Meeting (Poster)
2020 PBSE Annual Conference (Poster)
2019 UCSC Graduate Society of Women Engineers (Guest Talk)
2019 Braingeneers Presentation for UCSC Deans Council
2019 Genomics Institute Open House Braingeneers Presentation
2018 Braingeneers UC San Francisco Retreat Presentation
2019 Genomics Institute Science Meeting Research Presentation

2018 Symposium for Undergraduate Research at UCSC (Poster)
2018 Braingeneers Schmidt Grant Kick-off Retreat Presentation
2018 Koret Research Slam (Poster)
2018 Braingeneers Presentation for NSF Visitor Jim Kurose
2018 UCSC Baskin School of Engineering Graduation Open House (Poster)
2018, 2019 UCSC Alumni Weekend (Poster)
2017, 2018, 2019 Braingeneers Presentation for Genomics Institute
2017 Braingeneers Presentation Talk for UCSF Visitors at UCSC
2017 Braingeneers Presentation Talk at UCSF

HONORS & AWARDS

2022-23 ARCS Foundation Fellowship
2020-21, 2022-23 UCSC Genome Sciences NHGRI T-32 Trainee
2018-19 Koret Scholarship
2015, 2016, 2017, 2018 Dean's Honors List
2015 Impressive Participation in the 2015 US National Chemistry Olympiad Local Competition

ORGANIZATIONS

NeuroTechSC - Technical and Research Advisor
Applied Artificial Intelligence Institute (AAII) - Member

LANGUAGES

English (fluent), Russian (native), Ukrainian (native), French (limited working)