ALEXANDRE R. SATHLER

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Hardworking, data-wrangling scientist with five years' experience in neurobiology research and in tool development through benchtop, computational, and AI workflows for novel treatments of neurological disorders:

- Four years engineering novel computational and AI analyses for imaging and omics data.
- Three years wet-lab experience investigating frontiers in neurobiology.
- Three years organizational leadership and business development in private and non-profit sectors.
- Three years STEM instruction and student mentorship.

SKILLS:

Lab: Mammalian cell culture (2D and 3D) · primary cell culture · cell-based assays (viability, proliferation, mitochondria) · imaging · confocal microscopy · Airyscan microscopy · western blotting · plasmid amplification · transformation · transfection · genetic code expansion · murine cortical dissection

Computational: Python · AI / ML · computer vision · OpenCV · Jupyter · Matplotlib · Pandas · Seaborn · R · MATLAB · TensorFlow · PyTorch

Business: Product development · grant writing · Monday · Jira · email marketing · social media marketing · venture research · event planning · Portuguese · French · Spanish (beginner)

FIELD EXPERIENCE:

Associate Scientist, Business Development Associate **2024-2025**
Phi Optics, Inc. – Chicago, IL

- Trained and developed a minimal viable product for biopharmaceutical applications of novel computer vision AI models for digital assays and digital staining of quantitative phase imaging (QPI).
- Led venture research on novel QPI- and AI-based solutions for pharmaceutical manufacturing and precision fermentation applications, driving investment opportunities in a $1.5 billion market.
- Managed email, social media, and in-person marketing campaigns, launching bi-monthly initiatives that increased email opens by 1.5x, click-through rates by 70x, and established 3 OEM partnerships.
- Updated user manuals for flagship microscope software and initiated a global customer feedback campaign, engaging clients across 4 continents.

Publication (co-author): Cheng et. al, in preparation

Postbaccalaureate Fellow **2022-2024**
National Institutes of Health (NIH) – Bethesda, MD

- Investigated aging-redox stress axis and dysregulated neuronal energy homeostasis in neurodegeneration and aging with primary neuronal cell culture, super-resolution confocal microscopy, extracellular flux analysis, and image analysis using ImageJ / FIJI and artificial intelligence.
- Pioneered novel computer vision-mediated phase separation phenotype segmentation and analysis.
- Communicated novel scientific findings regularly in lab meetings and during weekly journal clubs.
- Co-led a community resilience response to a career-altering facilities crisis.

Publication (co-author): Cheng et. al, in preparation

Teaching Assistant **2021-2022**
Oregon State University (OSU) – Corvallis OR
Shaped coursework and student success in the first offering of Computational Approaches to Biological Data.

Research Assistant **2020-2022**

Oregon State University (OSU) – Corvallis OR

- Investigated a Warburg-like metabolic switch in Glioblastoma Multiforme caused by the post-translational tyrosine nitration of HSP90 in using cell culture of malignant cell lines, confocal microscopy, western blotting, and genetic code expansion.
- Built a qualitative suite for protein distribution validation in any 3D culture model. This methodology has applications in cell biology, pathology, and tissue modeling.

Publication (co-first-author): Nguyen & Sathler et. al, *Frontiers in Cell & Dev. Bio.* (2024)

Bioinformatics Intern **Portland, OR** **2019**

Providence Health and Services – Earle A. Chiles Research Institute (EACRI). Designed CAR-T cell therapy quality control for all cancer patients in the nation's 11th largest health system.

EDUCATION:

Ph.D: Bioengineering **UC Berkeley & UC San Francisco – 2030**

B.S: Biochemistry & Molecular Biology (Data Science Minor) **Oregon State University – 2022**
Summa Cum Laude; 6X Honor Roll

A.A.S: Bioscience Technolgy **Portland Community College – 2020**
Honors; 5X President's List, 1X Dean's List

PUBLICATIONS:

Nguyen KT[1] & **Sathler AR**[1], Estevez AG, Logan IE, Franco MC. "ProDiVis: A Method to Normalize Fluorescence Signal Localization in 3D Specimens". *Frontiers in Cell & Dev. Bio.* (2024) DOI: 10.3389/fcell.2024.1420161

Cheng XT, Gao YF, **Sathler AR**, Chan CY, Sheng ZH. "Reprogramming of Redox Signaling Restores Mitochondrial Nucleoid Condensates and Energy Metabolism in Aging Neurons" Submitted.

Cheng AZ, Yin CZ, Lamba AS, Sertorio M, DeJesus M, Alexis J, Sathler AR, Chiritescu C, Best CA, Ionascu D, Kotov N, Nazarian S, Bogdan P. "AI-enabled live-dead cell viability classification and motion forecasting" Submitted.

FELLOWSHIPS & SCHOLARSHIPS:

NSF Graduate Research Fellowship UCSF **$159,000** **2025**
For outstanding graduate students pursuing research-based master's and doctoral degrees in STEM fields.

George T. Abed Award OSU **$3,000** **2022**
Competitive yearly award for an Acacian exhibiting exceptional leadership, scholarship, and community service.

CURE Summer Fellowship OSU **$5,000** **2021**
Competitive research grant from OSU's College of Science for carrying out a proposed summer research project.

Merrill Family Foundation Scholarship OSU **$4,500** **2020**
An OSU College of Science competitive scholarship awarded to students embodying service and leadership.

[1] Authors contributed equally to this work.

AWARDS:

Spirit of NINDS Award NIH/NINDS **2023**
"In recognition of invaluable insights and recommendations for program enhancement, contributing to improved working conditions, training and mentorship opportunities, and a positive workplace culture."

Honorable Mention ASBMB **2022**
Scored by poster judges for my post presentation of my undergraduate work at the American Society of Biochemistry and Molecular Biology (ASBMB)'s Undergraduate Poster Competition in Cancer Biology.

JP Travel Award OSU **$500** **2022**
Competitive award to fund discipline-related travel to professionally beneficial opportunities for undergraduates in OSU's Department of Biochemistry and Biophysics.

Undergraduate Young Investigator Award (YIA) SfRBM **$250** **2021**
YIA was awarded for my oral presentation of my OSU research being the first undergraduate oral presentation ever at the national Society for Redox Biology and Medicine (SfRBM) 2021 Annual Meeting.

Best Lightning Talk & Undergraduate Poster CQLS **2021**
Oral talk & poster voted best at regional Center for Quantitative Life Sciences (CQLS) 2021 Fall Conference.

Runner-Up for Best Undergraduate Poster CQLS **2019**
Awarded by poster judges for my presentation of EACRI research at OSU's regional CQLS 2021 Fall Conference.

CONFERENCE PROCEEDINGS:

Sathler AR, Nguyen KT, Marean-Reardon C, Estevez AG, Franco MC. "A Computational Method for the Visualization of Nitrated Hsp90 Distribution in 3D Culture Models" ASBMB (2022). Poster Presentation. *Undergraduate Poster Competition Honorable Mention*.

Sathler AR, Sung AL, Nguyen KT, Estévez AG, Franco MC. "A Computational Method to Visualize Nitrated Hsp90 Distribution in 3D Culture Models" SfRBM (2021). Oral Presentation. *Undergraduate YIA*.

Sathler AR, Sung AL, Nguyen KT, Estévez AG, Franco MC. "A Computational Method to Visualize Nitrated Hsp90 Distribution in 3D Culture Models" CQLS Fall Conference (2021). Oral and Poster Presentation. *Best Undergraduate Poster and Best Overall Lightning Talk*.

Sathler AR, Rajamanickam V, Dubay C, Bernard B. "Utilizing Genome Fingerprinting to Conclusively Pair Tumor-Normal Whole-Exome Sequencing Data for Adaptive T-Cell Therapy" CQLS Fall Conference (2019). Poster Presentation. *Runner-Up for Best Undergraduate Poster*.

VOLUNTEER & OTHER EXPERIENCE:

Trustee, Capital Development Chair **Bethesda, MD** **2022-2024**
The DMV Petri Dish

- Managed a cross-functional team executing a feasibility study to justify a $100k award from the State of Maryland to build the first community lab in the DC Metro Area (DMV).
- Spearheaded two 10-speaker seminar series and organized educational workshops, establishing the 501(c)3 organization's first revenue streams, and achieving 100% growth in income.
- Established institutional collaborations with Montgomery College, the City of Rockville, and TEDCO.

Founder and President **Bethesda, MD** **2022-2024**
Office of Intramural Training and Education Biotech Interest Group (OITE-BIG)

- Founded and led a biotech industry-focused professional organization, addressing a critical need by providing training in non-academic career development to over 5,000 NIH fellows.
- Orchestrated impactful seminar series, workshops, and networking events in collaboration with OITE and researchers nationwide to fostering professional growth and industry connections among 500 attendees.
- Cultivated a leadership succession plan and trained a successor, maintaining organizational stability continuing professional development of NIH fellows beyond term of presidency.

Mentor – Paths Mentorship Program **Alexandria, VA** **2022-2023**

ICM Cares Clinic – Committee Member, MA **Gaithersburg, MD** **2023-2024**

Wyzant – Independent Tutor **Portland, OR & Chicago, IL** **2019-21, 2024-25**

Presidential Campaign – Regional Coordinator **Portland, OR** **2019-2020**

MENTORSHIP:

Sara Woube **PATHS** **2023**
Provided mentorship through monthly phone calls and letters of recommendation. Resulted in her acceptance into Massachusetts Institute of Technology Introduction to Technology, Engineering, and Science (MITES) program.

Becca Bingham **OSU** **2022**
Supported my PhD mentor, Kyle T. Nguyen, in the mentorship of Becca Bingham, a new undergraduate in the Franco lab at OSU, by teaching common lab techniques such as western blotting.

HONORS:

Princeton Molecular Biophysics REU **Princeton, NJ** **2020, 2021**
Accepted in 2020 and in 2021, but cancelled both years due to COVID-19

Eagle Scout **Portland, OR** **2018**

CERTIFICATIONS:

Nanodegree – Generative AI **Udacity – 2025**

Nanodegree – Introduction to Machine Learning w/ TensorFlow **Udacity – 2020**