

# 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 microscopic images 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.

## FIELD EXPERIENCE:

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<b>Associate Scientist</b>	<b>Chicago, IL</b>	<b>2024-Present</b>
<b>Business Development Associate</b>	<b>Chicago, IL</b>	<b>2024-Present</b>

*Phi Optics, Inc.*

- 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).
- Venture development for novel QPI- and AI-based pharmaceutical and fermentation bioprocess monitoring.
- Organized and implemented email-, social media-, and conference-based marketing and outreach campaigns for academic customers, OEM partnerships, and novel QPI applications for biopharma.
- Global customer relationship support and application engineering for 2D & 3D label-free imaging.

<b>Postbaccalaureate Fellow</b>	<b>Bethesda, MD</b>	<b>2022-2024</b>
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*National Institutes of Health (NIH) – National Institute of Neurological Disorders and Stroke (NINDS)*

- 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

<b>Teaching Assistant</b>	<b>Corvallis, OR</b>	<b>2021-2022</b>
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*Oregon State University (OSU) – Department of Botany and Plant Pathology (BPP).* Shaped coursework and fostered student success in the first offering of BDS311 “Computational Approaches to Biological Data”.

<b>Research Assistant</b>	<b>Corvallis, OR</b>	<b>2020-2022</b>
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*Oregon State University (OSU) – Department of Biochemistry and Biophysics (BB)*

- 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)

<b>Bioinformatics Intern</b>	<b>Portland, OR</b>	<b>2019</b>
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*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 11<sup>th</sup> largest health system.

## EDUCATION:

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<b>Oregon State University</b>	<b>Corvallis, OR</b>	<b>2020-2022</b>
<i>Biochemistry and Molecular Biology (B.S.); Biological Data Sciences (Minor) and Chemistry (Minor)</i> Graduated Summa Cum Laude; 6X Honor Roll		
<b>Udacity</b>	<b>Online</b>	<b>2020</b>
<i>Nanodegree – Introduction to Machine Learning with TensorFlow</i>		
<b>Portland Community College</b>	<b>Portland, OR</b>	<b>2018-2020</b>
<i>Bioscience Technology (A.A.S.)</i> Graduated with Honors; 5X President's List, 1X Dean's List		

## SKILLS:

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**Personal:** Leadership, team / project development, project management, problem solving, performance under pressure, communication, public speaking / presentations, Portuguese (near-fluency), French (advanced).

**Technical:** Machine learning, primary neuronal cell culture, cell line culture, confocal microscopy, grant writing, FIJI, TensorFlow, Python, western blotting, genetic code expansion, calcium transfection, literature review.

## FELLOWSHIPS & SCHOLARSHIPS:

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<b>George T. Abed Award</b>	OSU	<b>\$3,000</b>	<b>2022</b>
Competitive yearly award for an Acacian exhibiting exceptional leadership, scholarship, and community service.			
<b>CURE Summer Fellowship</b>	OSU	<b>\$5,000</b>	<b>2021</b>
Competitive research grant from OSU's College of Science for carrying out a proposed summer research project.			
<b>Merrill Family Foundation Scholarship</b>	OSU	<b>\$4,500</b>	<b>2020</b>
An OSU College of Science competitive scholarship awarded to students embodying service and leadership.			

## AWARDS:

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<b>Spirit of NINDS Award</b>	NIH/NINDS		<b>2023</b>
"In recognition of invaluable insights and recommendations for program enhancement, contributing to improved working conditions, training and mentorship opportunities, and a positive workplace culture."			
<b>Honorable Mention</b>	ASBMB		<b>2022</b>
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.			
<b>JP Travel Award</b>	OSU	<b>\$500</b>	<b>2022</b>
Competitive award to fund discipline-related travel to professionally beneficial opportunities for undergraduates in OSU's Department of Biochemistry and Biophysics.			
<b>Undergraduate Young Investigator Award (YIA)</b>	SfRBM	<b>\$250</b>	<b>2021</b>
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.			
<b>Best Lightning Talk &amp; Undergraduate Poster</b>	CQLS		<b>2021</b>
Oral talk & poster voted best at regional Center for Quantitative Life Sciences (CQLS) 2021 Fall Conference.			
<b>Runner-Up for Best Undergraduate Poster</b>	CQLS		<b>2019</b>
Awarded by poster judges for my presentation of EACRI research at OSU's regional CQLS 2021 Fall Conference.			

## PUBLICATIONS:

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Nguyen KT<sup>1</sup> & Sathler AR<sup>1</sup>, 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” In Preparation.

## CONFERENCE PROCEEDINGS:

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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:

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<b>Trustee, Capital Development Chair</b> <i>The DMV Petri Dish</i>	<b>Bethesda, MD</b>	<b>2022-Present</b>
<ul style="list-style-type: none"><li>Managed a feasibility study for \$100k to build the first community lab in the DC Metro Area (DMV).</li><li>Organized two 10+ speaker seminar series and two revenue-generating educational workshops.</li><li>Established institutional collaborations with Montgomery College, the City of Rockville, and TEDCO.</li></ul>		
<b>Founder and President</b> <i>Office of Intramural Training and Education Biotech Interest Group (OITE-BIG)</i>	<b>Bethesda, MD</b>	<b>2022-2024</b>
<ul style="list-style-type: none"><li>Identified and filled the NIH’s biotechnology industry training gap to serve over 5,000 fellows.</li><li>Organized industry-related seminar series, workshops, networking with OITE and researchers nationwide.</li></ul>		
<b>Mentor</b> <i>PATHS Mentorship Program</i>	<b>Alexandria, VA</b>	<b>2022-2023</b>
<ul style="list-style-type: none"><li>Gave talks in academic success, college readiness, summer internships, and career exploration to Alexandria City Public Schools high school students.</li><li>Provided one-on-one career and academic mentorship to a high school student.</li></ul>		
<b>ICM Cares Clinic – Committee Member, MA</b>	<b>Gaithersburg, MD</b>	<b>2023-2024</b>
<b>Wyzant – Independent Tutor</b>	<b>Portland, OR &amp; Chicago, IL</b>	<b>2019-2021, 2024</b>
<b>Presidential Campaign – Regional Coordinator</b>	<b>Portland, OR</b>	<b>2019-2020</b>

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<sup>1</sup> Authors contributed equally to this work.

## MENTORSHIP:

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**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:

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**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**