

# Amanda Lyn Gunn

## Summary

### Programming

- Developed a high content siRNA screening pipeline from conception to wet lab, through python-based image processing and data analysis/statistical programming with R
- Founded and coordinated a Code Club to facilitate growth and sharing of programming skills
- Comfortable learning and implementing new workflows, packages, and modules in R, python, shell scripting

### Research and Development

- 10+ years of academic research experience in cellular and molecular biology at cancer research centers
- 3 years industry experience, including product development, quality control, and diagnostics
- 5 years of experience with environmental and microbiological sciences
- Experience with leading a group, along with working as a functioning member of a team

### Teamwork and Leadership

- 10+ years of building and managing collaborative team environments
- 15+ years of providing mentorship and support for both peers and trainees
- 15+ years of providing community and public health education through invited speaker roles and mentorship programs

## Education

### PhD

Biological Sciences  
2011

### City of Hope Comprehensive Cancer Center

**Dissertation:** Effects of biological context on DNA double strand break repair  
Advisor: Dr. Jeremy M. Stark

### BS

Forensic Science  
2005

### University of New Haven

**Research:** Formation of lead nanoparticles and carbon nanotubes  
Advisor: Dr. Saion Sinha

## Appointments

### Senior Analyst Health Informatics

Norstella  
2023 - Present

- Providing clinical support and subject matter expertise to RWD analytics projects
- Bridging communications between healthcare and data science teams
- Coding claims utilizing ICD-10, CPT, HSPCS, LOINC, NDC
- Managing projects in an Agile environment

### Staff Scientist

Fred Hutchinson  
Cancer Center  
2019 - 2023

- Designed, implemented, and completed analysis for research projects identifying mechanisms related to the loss of nuclear integrity
- Conducted bioinformatics and statistical analysis, cell biology experiments, and confocal microscopy imaging
- Utilized data analysis and visualization tools such as R, python, and shell scripting
- Managed laboratory operations and oversaw high-throughput screening projects
- Applied molecular biology techniques and microscopy methods
- Developed a Code Club to lower the barrier of entry for trainees learning to code

### Tenured Biology Professor

Grays Harbor College  
2014 - 2019

- Taught courses in molecular and cellular biology, fisheries science, and microbiology
- Managed a salmon hatchery and engaged in community science outreach activities
- Piloted grant writing, project management, and team leadership efforts

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	<ul style="list-style-type: none"><li>Conducted field work and supervised microscopy, microbiome, and chemistry experiments</li><li>Led research projects assessing the contribution of riparian zone destruction to the changing microbiome of salmon habitat</li></ul>
<b>Laboratory Director</b> Keck Science Department Claremont McKenna, Pitzer, and Scripps Colleges 2012 - 2013	<ul style="list-style-type: none"><li>Managed an interdisciplinary laboratory focused on innovative science courses</li><li>Collaborated with physicists, chemists, and biologists to develop protocols and adapted for training undergraduates in the laboratory</li><li>Developed and delivered undergraduate science curriculum</li><li>Conducted research focusing on the design and development of plant based vaccines in collaboration with the Grill Lab at the Pitzer Vaccine Institute</li></ul>
<b>Research Assistant</b> Zymo Research 2006 – 2007	<ul style="list-style-type: none"><li>Developed and streamlined Genomic and Plasmid DNA extraction kits</li><li>Assisted in marketing and communication with clients about products</li></ul>
<b>FISH technician</b> <b>Cytogeneticist in training</b> Labcorp 2005 - 2006	<ul style="list-style-type: none"><li>Advanced from entry level FISH Technician to Cytogenetic Technologist in training</li><li>Wet lab processing of patient tissues for fluorescent in situ hybridization and metaphase spreads</li><li>Manual and automated microscopic diagnostics by FISH and karyotyping</li></ul>

## Additional Training

<b>Nature</b> <b>Masterclasses</b> <b>Certificates</b>	<ul style="list-style-type: none"><li>Data Analysis: Conducting and Troubleshooting</li><li>Data Analysis: Planning and Preparing</li><li>Interpreting Scientific Results</li><li>Managing Research Data to Unlock its Full Potential</li></ul>
<b>Datacamp</b> <b>Certificates</b>	<ul style="list-style-type: none"><li>Visualization Best Practices in R</li><li>Intermediate Data Visualization with ggplot2</li><li>Introduction to Data Visualization with ggplot2</li></ul>
<b>Coursera Certificates</b>	<ul style="list-style-type: none"><li>Intro to Genomic Technologies (John Hopkins University)</li><li>Python for Genome Sciences (John Hopkins University)</li><li>Bioinformatics I (University of California San Diego)</li><li>Clinical Trials Operations Specialization (Johns Hopkins University)<ul style="list-style-type: none"><li>Design and Conduct of Clinical Trials</li><li>Clinical Trials Data Management and Quality Assurance</li><li>Clinical Trials Management and Advanced Operations</li><li>Clinical Trials Analysis, Monitoring, and Presentation</li></ul></li><li>SAS Programmer Professional Certificate (In Progress)<ul style="list-style-type: none"><li>Getting Started with SAS Programming (Completed)</li></ul></li></ul>

## Society Memberships

<b>Member</b> 2019-2022	American Society for Cell Biology
<b>Member</b> 2013-2019	American Society for Microbiology

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<b>Executive Board Member</b> 2016-2019	Chehalis Basin Fisheries Task Force
<b>Extramural Funding</b>	
<b>Principle Investigator</b> 2015-2018	Rose Foundation for Communities and the Environment
<b>Principle Investigator</b> 2018-2020	USDA National Institute of Food and Agriculture, Capacity Building Grant (NLGCA: 2018-70001-28767)
<b>Academic and Professional Honors</b>	
2018	Faculty Excellence Award, Grays Harbor College
2017	Faculty of the Year Award, Grays Harbor College
2015	Faculty Excellence Award, Grays Harbor College
2011	Merit Award, Duarte Unified School District
2010	Travel Fellowship, Irell and Manella Graduate School for Biological Sciences
2007	Fellowship, Berger Foundation
2005	Travel Fellowship, Bartels Foundation
<b>Service</b>	
<b>Mentor, Program Support, Data Analyst</b> 2019-present	<b>Binning Singletons</b> <ul style="list-style-type: none"><li>Assist in the generation and development of ideas to foster a more inclusive environment for early career scientists at conferences</li><li>Analyze participation data and develop visualizations for use in recruitment, marketing, and funding slide decks</li><li>Provide mentorship and support on the ground and virtually for companion programs run at ASM Microbe</li></ul>
<b>Founder, Program Director</b> 2014-2019	<b>Grays Harbor College Fish Lab</b> <ul style="list-style-type: none"><li>Developed and successfully funded a community science program making scientific research opportunities available to low income and historically marginalized groups</li><li>Supported over 3000 volunteers, and 20+ research assistants over 5 years</li><li>Created community events with lasting impact, through which tens of tons of garbage were removed from streambanks, replaced by thousands of trees planted</li></ul>
<b>Publications</b>	
	A high-content siRNA screen reveals new regulators of nuclear membrane stability. <b>Gunn AL</b> , Yashchenko AI, Hatch EM, bioRxiv 2023 May; <a href="https://doi.org/10.1101/2023.05.30.542944">https://doi.org/10.1101/2023.05.30.542944</a>

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Chromosome identity regulates micronucleus rupture. Mammel AE, Huang HZ, **Gunn AL**, Choo EC, Hatch EM, Life Science Alliance 2021 Nov, 5 (2) e202101210  
BAF facilitates interphase nuclear membrane repair through recruitment of nuclear transmembrane proteins. Young AM, **Gunn AL**, Hatch EM, Mol Biol Cell 2019 31(15):1551-1560

Binning Singletons: Mentoring through Networking at ASM Microbe. James J, **Gunn AL**, Akob D, 2019. mSphere 5(1)

OpenStax: Microbiology Provides a Cost-Effective and Accessible Resource for Undergraduate Microbiology Students. **Gunn AL**, J Microbiol Biol Educ. 2016 May; 17(2): 305–306

RING finger nuclear factor RNF168 is important for defects in homologous recombination caused by loss of the breast cancer susceptibility factor BRCA1. Munoz MC, Laulier C, **Gunn A**, Cheng A, Robbiani DF, Nussenzweig A, Stark JM, Journal of Biological Chemistry 287(48):40618-28

I-SceI-based assays to examine distinct repair outcomes of mammalian chromosomal double strand breaks. **Gunn A**, Stark JM, Methods in Molecular Biology (Clifton, N.J.) 2012 920: 379-91

Correct End Use during End Joining of Multiple Chromosomal Double Strand Breaks Is Influenced by Repair Protein RAD50, DNA-dependent Protein Kinase DNA-PKcs, and Transcription Context. **Gunn A**, Bennardo N, Cheng A, Stark JM, Journal of Biological Chemistry 2011 286:42470-82

53BP1 inhibits homologous recombination in Brca1-deficient cells by blocking resection of DNA breaks. Bunting SF, Callén E, Wong N, Chen HT, Polato F, **Gunn A**, Bothmer A, Feldhahn N, Fernandez-Capetillo O, Cao L, Xu X, Deng CX, Finkel T, Nussenzweig M, Stark JM, et al., Cell 2010 141: 243-54.

Bennardo N, **Gunn A**, Cheng A, Hasty P, Stark JM, Limiting the persistence of a chromosome break diminishes its mutagenic potential. Plos Genetics 2009 5: e1000683.

TGF-beta activates Akt Kinase through a microRNA-dependent amplifying circuit targeting PTEN. Kato M, Putta S, Wang M, Yuan H, Lanting L, Nair I, **Gunn A**, Nakagawa Y, Shimano H, Todorov I, Rossi JJ, Natarajan R. Nat Cel Biol 2009 11(7): 881-889

## Presentations

2023 Seminar Speaker: "Development of molecular tools enables high content screening for factors influencing nuclear integrity", University of Puget Sound

2020 Invited Lecture: "What you need to know about COVID-19 and mRNA vaccinations", San Juan County Fire District (Invited back for 2 more lectures)

2019 Poster Presentation at ASM Microbe2019 L. Thompson, M. Thompson, **A. Gunn**, "Characterization of Anthropogenic Impacts on Alder Creek."

2018 Invited Lecture: OTEP Infectious Diseases Training, Grays Harbor Fire Department

2017 Poster Presentation at ASM Microbe2017 S. Richardson, **A. Gunn**, "Stream Microbiome Analysis During Restoration."

2017 Poster Presentation at ASM Microbe2017 J. Kalisch, **A. Gunn**, "Genetic Analysis of Innate Immunity in *Oncorhynchus kisutch*."

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2015 Poster Presentation at ASMicrobe2015 A. Keith, **A. Gunn**, "Development of a Candidate Plant-Based Vaccine Against *O. volvulus*."

2015 Invited Lecture: OTEP Infectious Diseases and Vaccine Training, Grays Harbor Fire Department

2010 Poster Presentation at the Gordon Research Conference on Mammalian DNA Repair, **A. Gunn**, J. Stark "Affects of Transcription State on DNA Double Strand Break Repair."

2010 Guest Lecture at the University of New Haven, "Women in Science."

2009,2010 Poster Presentation at the City of Hope Research Organization Advance, "Understanding the Biological Context of DNA Double Strand Break Repair."

2008 Guest Lecture at Cal Poly Pomona, "Understanding Context in DNA Repair."

*References available upon request.*