

Jess Millar

Curriculum Vitae

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Portland, OR 97201

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EDUCATION	University of Michigan	2022
	Ph.D. Bioinformatics	(exp)
	M.S. Molecular Epidemiology	
	Portland State University	2017
	M.S. Biology	(exp)
	M.S. Statistics	
	Portland State University	2014
	B.S. Biology, Health Studies, & Science	
	Minor: Mathematics	
	Coll. & Dept. Honors, <i>magna cum laude</i>	
FELLOWSHIPS & SCHOLARSHIPS	Portland Community College	2010
	A.S. Science	
	University of Michigan Rackham Merit Fellowship (\$118,000) (<i>upcoming</i>)	2017-2022
	NSF Graduate Research Fellowship (\$138,000)	2016-2021
	University of Michigan Benard Maas Fellowship (\$5,000) (<i>upcoming</i>)	2017
	Fariborz Maseeh Statistics Teaching Assistantship (\$23,500)	2016-2017
	Portland State Elsa Jorgenson Award (\$4,500)	2014-2017
	Portland State Laurels Graduate Award (\$10,600)	2015-2016
	Portland State President's Equal Access Scholarship (\$1,200)	2015-2016
	Fariborz Maseeh Statistics Teaching Assistantship (\$21,700)	2014-2015
RESEARCH & TRAVEL GRANTS	Portland State Laurels Graduate Supplemental Tuition Grant (\$1,100)	2014-2015
	Portland State Honors Laurels Merit Scholarship (\$1,100)	2013-2014
	NIH-NHGRI Genomic Research Fellowship (\$4,150)	2013
	NIH-NHGRI Genomic Research GRE Prep Scholarship (\$1,450)	2013
	Portland State Supplemental Tuition Grant (\$6,000)	2011-2013
	McNair Scholars Research Fellowship (\$2,800)	2012
	McNair Scholars Supplemental Tuition Grant (\$1,750)	2011-2012
	NIH-NIGMS Bridges to Baccalaureate Summer Research Internship (\$1,350)	2010
	Emory MITII Summer School Travel and Lodging Grant (\$800) (<i>upcoming</i>)	2017
	Sigma Xi Grants-in-Aid of Research Copernicus Fund (\$1,000)	2016
RESEARCH & TRAVEL GRANTS	Pacific Northwest Women in Science Retreat Scholarship (\$120)	2016
	Sigma Xi Columbia-Willamette Chapter Research Grant (\$100)	2016
	American Society for Microbiology Student Travel Grant (\$500)	2015
	Portland State Forbes-Lea Research Award (\$775)	2015
	American Society for Microbiology Research Capstone Grant (\$1,500)	2014
	Rose E. Tucker Trust Undergraduate Research Grant (\$400)	2014
	NIH-NHGRI Genomic Research Travel and Lodging Grant (\$2,100)	2013
	NIH-NHGRI Genomic Research Conference Travel Grants (\$2,900)	2013

	NIH-NIGMS Bridges to Baccalaureate Conference Travel Grant (\$700)	2013
	Portland State AAA Conference Travel Grant (\$750)	2013
	Harvard CCDD Conference Travel Grant (\$850)	2013
	McNair Scholars Research Grant (\$200)	2012
	NIH-NIGMS Bridges to Baccalaureate Conference Travel Grant (\$1,250)	2012
	Rose E. Tucker Trust Undergraduate Research Grant (\$300)	2012
	McNair Scholars Conference Travel Grant (\$500)	2012
HONORS & AWARDS	AAAS/Science Program for Excellence in Science	2015-2017
	SALP Academic Excellence Award, Portland State University	2013-2017
	NRHH Academic Achievement Award, Portland State University	2012-2017
	2 nd Place Poster Competition, Portland State Dept. Biology	2016
	Sigma Xi (Full Member), Scientific Research Society	2015
	Pi Mu Epsilon, National Mathematics Honor Society	2015
	American Society for Microbiology Science Teaching Fellow	2014-2015
	Portland State Dean's Academic Achievement Award (*top undergrad in college)	2013
	National Residence Hall Honorary, Portland State (*top 1% of student leaders)	2013
	Phi Kappa Phi National Honor Society (*top 7.5% of students)	2012
	Golden Key International Honour Society (*top 15% of students)	2012
	Urban Honors Scholar, Portland State University	2012
BOOK CHAPTERS	Chen Y, Millar JA . "Machine learning techniques in cancer prognostic modeling and performance assessment." <i>In: Frontiers of Biostatistical Methods and Applications in Clinical Oncology</i> . Matsui S, Crowley JJ. (Eds.) Singapore: Springer. (<i>accepted</i>)	2018
REFEREED PUBLICATIONS	Millar JA , Raghavan R. "Accumulation and expression of multiple antibiotic resistance genes in <i>Arcobacter cryaerophilus</i> that thrives in sewage." <i>PeerJ</i> . (<i>accepted</i>)	2017
	Kacharia FR*, Millar JA* , Raghavan R. "Emergence of new sRNA in enteric bacteria is associated with low expression and rapid evolution." <i>J Mol Evol</i> . (*Co-first authors) (<i>accepted</i>)	2017
	Ballhorn DJ, Schädler M, Elias JD, Millar JA , Kautz S. "Friend or foe - Light availability determines the relationship between mycorrhizal fungi, rhizobia and lima bean (<i>Phaseolus lunatus</i> L.)." <i>PLoS ONE</i> . 11(5):e0154116.	2016
	Millar JA , Valdés R, Kacharia FR, Landfear SM, Cambronne ED, Raghavan R. " <i>Coxiella burnetii</i> and <i>Leishmania mexicana</i> residing within similar parasitophorous vacuoles elicit disparate host responses." <i>Front Microbiol</i> . 6:794.	2015
	Raghavan R, Kacharia FR, Millar JA , Sislak CD, Ochman H. "Genome rearrangements can make and break small RNA genes." <i>Genome Biol Evol</i> . 7(2):557-566.	2015
	Millar JA , Ballhorn DJ. "Effect of mycorrhizal colonization and light limitation on growth and reproduction of lima bean (<i>Phaseolus lunatus</i> L.)." <i>J Appl Bot Food Qual</i> . 86(1):172-179.	2013

	Yeh PJ, Simon DM, Millar JA , Alexander HF, Franklin D. "A diversity of antibiotic-resistant <i>Staphylococcus</i> spp. in a public transportation system." <i>Public Health Res Perspect.</i> 2(3):202-209 (Erratum: 3(1):61).	2011
SUBMITTED MANUSCRIPTS	Moses AS*, Millar JA* , Bonazzi M, Beare PA, Raghavan R. "Horizontally acquired biosynthesis genes boost <i>Coxiella burnetii</i> 's physiology." <i>Front Cell Infect Microbiol.</i> (*Co-first authors) (<i>proposal abstract accepted</i>)	2017
	Millar JA* , Beare PA*, Moses AS, Martens CA, Heinzen RA, Raghavan R. "Whole genome sequence of <i>Coxiella burnetii</i> Nine Mile RSA 439 (phase II, clone 4): The laboratory workhorse strain." <i>Genome Announc.</i> (*Co-first authors)	2017
MANUSCRIPTS IN PREP	Hebert JF, Romney A, Millar JA , Podrabsky JE, Raghavan R, Morgan TK. "Fetal sex may affect uteroplacental vascular remodeling and placental function."	2017
	Xie Z, Zou Z, Raz A, Qin H, Fischetti V, Kreth J, Millar JA , Raghavan R, Merritt J. "Mechanistic insights into LytTR Regulatory Systems: A new class of prokaryotic signal transduction system."	2017
	Schumann C*, Chan S*, Millar JA , Bortak Y, Carey K, Fedchyk A, Taratula O, Taratula O. "Nanoparticle mediated DJ-1 siRNA delivery in combination with Cisplatin for the treatment of metastatic ovarian cancer." <i>J Control Release.</i> (*Co-first authors)	2017
CONFERENCE PRESENTATIONS	Millar JA , Moses AS, Bonazzi M, Beare PA, Raghavan R. "Horizontally acquired biosynthesis genes boost <i>Coxiella burnetii</i> 's physiology." Evolution 2017. Portland, OR. June 23 rd -27 th . (<i>upcoming</i>)	2017
	Millar JA , Moses AS, Bonazzi M, Beare PA, Raghavan R. "Horizontally acquired biosynthesis genes boost <i>Coxiella burnetii</i> 's physiology." American Society for Microbiology Microbe 2017. New Orleans, LA. June 1 st -5 th . (<i>upcoming</i>)	2017
	Millar JA , Raghavan R. "A sewage microbiome is dominated by <i>Arcobacter cryaerophilus</i> that expresses multiple drug resistance and virulence genes." American Society for Microbiology Microbe 2016. Boston, MA. June 16 th -20 th .	2016
	Millar JA , Raghavan R. "Pathogens residing within similar intracellular vacuoles elicit discordant host responses." 1 st Festival of Genomics California. San Mateo, CA. November 3 rd -5 th .	2015
	Millar JA , Valdés R, Cambronne ED, Landfear SM, Raghavan R. " <i>Coxiella burnetii</i> and <i>Leishmania mexicana</i> residing within similar parasitophorous vacuoles elicit discordant host responses." 1 st Pacific Northwest Quantitative Biology Meeting. Portland, OR. September 11 th .	2015

Millar JA , Valdés R, Cambronne ED, Landfear SM, Raghavan R. “ <i>Coxiella burnetii</i> and <i>Leishmania mexicana</i> residing within similar parasitophorous vacuoles elicit discordant host responses.” 115 th General Meeting of the American Society for Microbiology. New Orleans, LA. May 30 th -June 2 nd .	2015
Millar JA , Raghavan R. “A horizontally acquired tRNA facilitates <i>Coxiella burnetii</i> adaptation to an extreme environment.” 114 th General Meeting of the American Society for Microbiology. Boston, MA. May 17 th -20 th .	2014
Millar JA , McNulty SN, Zarlenga D, Mitreva M. “Transcriptional profiling of Ivermectin resistant <i>Cooperia punctata</i> using deep sequencing.” 53 rd Annual Meeting of the American Society for Cell Biology. New Orleans, LA. December 14 th -18 th .	2013
Millar JA , McNulty SN, Zarlenga D, Mitreva M. “Transcriptional profiling of Ivermectin resistant <i>Cooperia punctata</i> using deep sequencing.” 2 nd International Conference on Genomics in the Americas. Sacramento, CA. September 12 th -13 th .	2013
Millar JA , Ballhorn DJ. “Effect of mycorrhizal colonization and light limitation on growth and reproduction of lima bean (<i>Phaseolus lunatus</i> L.).” 113 th General Meeting of the American Society for Microbiology. Denver, CO. May 18 th -21 st .	2013
Millar JA , Ballhorn DJ. “Effects of light limitation on legume-mycorrhizae interactions.” 12 th Annual Biomedical Research Conference for Minority Students. San Jose, CA. November 7 th -10 th .	2012
Millar JA , Ballhorn DJ. “Effects of light limitation on plant-rhizobia and plant-mycorrhiza interactions.” 20 th Annual Pacific NW McNair/EIP/GO-MAP Research Conference. University of Washington, Seattle, WA. May 17 th .	2012
Millar JA . “The SARS virus - Different methods of curbing the epidemic.” 55 th Intel International Science and Engineering Fair. Portland, OR. May 9 th -14 th .	2004
CAMPUS & MISC PRESENTATIONS	
Millar JA , Chen Y. “Machine learning techniques in cancer prognostic modeling and performance assessment.” 6 th Annual OHSU Research Week. Oregon Health Science University, Portland, OR. May 1 st -3 rd . (<i>upcoming</i>)	2017
Millar JA , Raghavan R. “A sewage microbiome is dominated by <i>Arcobacter cryaerophilus</i> that expresses multiple drug resistance and virulence genes.” 20 th Annual Biology Alumni Night Symposium. Portland State University, Portland, OR. October 21 st .	2016
Millar JA , Raghavan R. “A sewage microbiome is dominated by <i>Arcobacter cryaerophilus</i> that expresses multiple drug resistance and virulence genes.” 4 th Annual Pacific Northwest Women in Science Retreat. Rockaway Beach, OR. July 8 th -10 th .	2016
Millar JA , Raghavan R. “A horizontally acquired tRNA facilitates <i>Coxiella burnetii</i> adaptation to an extreme environment.” Sigma Xi Columbia-Willamette Chapter Annual Meeting. Portland, OR. May 26 th .	2016

Millar JA , Raghavan R. "Pathogens residing within similar intracellular vacuoles elicit discordant host responses." 19 th Annual Biology Alumni Night Symposium. Portland State University, Portland, OR. October 23 th .	2015
Millar JA , Raghavan R. "Parallel adaptation of a bacterium and an eukaryote to an intracellular extreme environment." 18 th Annual Biology Alumni Night Symposium. Portland State University, Portland, OR. October 17 th .	2014
Millar JA , McNulty SN, Zarlenga D, Mitreva M. "Transcriptional profiling of Ivermectin resistant <i>Cooperia punctata</i> using deep sequencing." 7 th Annual Opportunities in Genomic Research Undergraduate Scholars Closing Program. Washington University School of Medicine, St. Louis, MO. July 31 st .	2013
Millar JA , Ballhorn DJ. "Effect of mycorrhizal colonization and light limitation on growth and reproduction of lima bean (<i>Phaseolus lunatus</i> L.)." 9 th Annual Sigma Xi Columbia-Willamette Chapter Student Research Symposium. Portland State University, Portland, OR. April 12 th .	2013
Millar JA , Ballhorn DJ. "Effects of light limitation on plant-microbe interactions." 9 th Annual PSU Ronald E. McNair Scholars Program Summer Symposium. Portland State University, Portland, OR. August 15 th .	2012
Millar JA , Ballhorn DJ. "Effects of light limitation on plant-rhizobia and plant-mycorrhiza interactions." 9 th Annual PSU Undergraduate Research Conference. Portland State University, Portland, OR. May 23 rd .	2012
Millar JA , Kelley AL, Buckley BA. "Antibody testing for C/EBP δ in aquatic snails." Portland Bridges to Baccalaureate Annual Meeting. Portland State University, Portland, OR. October 15 th .	2010

RESEARCH EXPERIENCE

PSU Laurels Graduate Scholar , Portland State University Department of Biology, Advisor: Dr. Raghavan Pathogenic bacterial genome evolution and adaption to host niches.	2013-2017
Graduate Research Assistant , Oregon Health & Science University Department of Public Health & Preventive Medicine, Advisor: Dr. Chen Oncological prognostic modeling using machine learning techniques.	2016-2017
NIH-NHGRI Genomic Research Scholar , Washington Univ. in St. Louis McDonnell Genome Institute, Advisor: Dr. Mitreva Differential gene expression of Ivermectin resistant <i>Cooperia punctata</i> in cattle in response to drug treatment.	2013
Ronald E. McNair Scholar , Portland State University Department of Biology, Advisor: Dr. Ballhorn Fitness shifts between <i>Phaseolus lunatus</i> and mycorrhizae in response to light limitation.	2011-2013
Undergraduate Research Assistant , Portland State University Department of Biology, Advisor: Dr. Yeh Diversity of <i>Staphylococcus</i> spp. antibiotic resistance in public transit.	2011

	NIH-NIGMS Bridges Scholar , Portland State University Department of Biology, Advisor: Dr. Buckley Protein expression level analysis of physiological heat shock and bacterial infection response in marine animals.	2010-2011
	Undergraduate Research Assistant , Oregon Health Science University Department of Cell & Developmental Biology, Advisor: Dr. Danilchik Furrow-specific endocytosis during cytokinesis in <i>Xenopus laevis</i> .	2002-2003
MENTORED STUDENTS	Auguste Dutcher (<i>PSU Biology undergraduate</i>) Tina Schroyer (<i>PSU Biology & Envir. Sciences undergrad, McNair Scholar</i>) Janice Ballantine (<i>PSU P.A.C.E. graduate</i>) Katherine Huynh (<i>PSU Biology undergraduate, Millennium Gates Scholar, LSAMP Scholar, McNair Scholar</i>) Dominick Keim-bay (<i>PSU Biology undergraduate, LSAMP Scholar</i>)	2016-2017 2012-2014 2012 2011 2011
TEACHING ACTIVITIES	Guest Lecturer , Oregon Health & Science University Department of Public Health & Preventive Medicine Categorical Data Analysis (Spr. '17) (<i>upcoming</i>) Guest Lecturer , Portland State University Department of Mathematics and Statistics Statistical Consulting (Spr. '17) Teaching Assistant , Portland State University Department of Mathematics and Statistics Intro to Probability & Statistics I (Win. '15, Fall '16, Spr. '17) Intro to Probability & Statistics II (Spr. '15, Win. '17) Intro to Probability & Statistics for Business II (Fall '14) Guest Lecturer , Portland State University McNair Scholars Program "Preparing for Grad School." McNair Seminar (Spr. '16, Spr. '17) "Funding Outside of McNair." McNair Seminar (Spr. '15, Spr. '16, Spr. '17) Teaching Assistant , Portland Community College Department of Mathematics Calculus I (Spr. '13, Sum. '14)	2017 2017 2014-2017 2015-2017 2013-2014
PROFESSIONAL SERVICES	Secretary – Biology Investigation and Outreach, PSU Chapter Panelist – "Research Methodology." Portland State McNair Scholars Program Judge – Intel Northwest Science Expo Regional Science Fair Panelist – "Options After Undergrad." TRiO Student Support Services Committee Member – Portland State Student Educational Travel Committee Conference Volunteer – XXXII Scientific Committee on Antarctic Research Website Developer – Portland State Biology Professor (Dr. Yeh)	2016-2017 2013-2017 2016 2015 2013-2014 2012 2011

UNIVERSITY SERVICE	Statistics Tutor – Portland State University	2014-2017
	Computer Lab Assistant – Math/Stats Dept., Portland State University	2015-2016
	Volunteer – Portland State Reuse Room	2013-2014
	Active Member – National Residence Hall Honorary, PSU Viking Chapter	2013-2014
	Tech Chair – Golden Key International Honour Society, PSU Chapter	2013
	Computer Lab Assistant – Graphic Design Dept., Portland State University	2011-2012
COMMUNITY SERVICE	Volunteer – Free Geek, Portland, OR	2012-2013
	Archives Assistant – City of Portland Archives and Records Center	2010-2011
	Lab Assistant – Red Cross, Portland, OR	2006-2008
CONFERENCES, SEMINARS, & WORKSHOPS ATTENDED	Immunology and Evolution of Influenza Symposium. Emory, Atlanta, GA. May 25 th -26 th . (<i>upcoming</i>)	2017
	12 th Annual Summer School on Modeling Immunology. Emory, Atlanta, GA. May 21 st -24 th . (<i>upcoming</i>)	2017
	Python for Everybody Specialization Certificate. University of Michigan, Coursera. (<i>in progress</i>)	2016-2017
	Lester Newman Seminar Series. Portland State University, Portland, OR.	2011-2017
	All-levels Career Development Workshop: Moving Forward in the Professional Public Health Field. Oregon Public Health Association. Portland OR. May 22 nd .	2016
	Data After Dark - BD2K Data Science Workshop. Oregon Health Science University, Portland, OR. January 13 th -14 th .	2016
	Maseeh Mathematics & Statistics Colloquium Series. Portland State University, Portland, OR.	2014-2016
	SIAM Student Chapter Seminar. Portland State University, Portland, OR.	2012-2016
	Microbiology Career Choices: What's Available and How to Succeed Workshop; American Society for Microbiology. Boston, MA. May 17 th .	2014
	ASM Research Capstone Institute; American Society for Microbiology. Boston, MA. May 16 th -17 th .	2014
	Studying Whole-Genome Microbial Epigenetics Workshop; American Society for Microbiology. Denver, CO. May 18 th .	2013
	America's Next Top Infectious Disease Model: HIV and Influenza Conference; Center for Communicable Disease Dynamics. Chicago, IL. April 21 st -22 nd .	2013
	10 th Western Regional International Health Conference. Portland, OR. April 5 th -7 th .	2013
	Perl Programming Level I Course; Portland Community College, Community Education.	2012
	XXXII Scientific Committee on Antarctic Research Conference. Portland, OR. July 16 th -19 th .	2012
PROFESSIONAL AFFILIATIONS	American Society for Microbiology	2011-2017
	Society for Industrial and Applied Mathematics	2012-2017
	Sigma Xi	2013-2017
	American Society for Cell Biology	2013-2014
	Society for Applied Microbiology	2014-2017
	American Mathematical Society	2014-2017
	Association for Women in Mathematics	2015-2017
	American Association for the Advancement of Science	2015-2017
	Genetics Society of America	2016-2017
	Society for the Study of Evolution	2017

**TECHNICAL
SKILLS**

Computer Languages

Shell script, Perl, LaTeX, HTML, CSS

Statistical Software

Minitab, R, Maple, SAS, SPSS, XLSTAT

Bioinformatics Techniques

Sequence alignment, Neighbor-joining, Maximum likelihood trees, Bayesian trees, RNA-Seq, De novo assembly, GO term enrichment, Differential gene expression, Differential isoform expression, Protein-protein interaction networks

Bioinformatics Software

PhyML, PHYLIP, RAxML, MrBayes, Clustal Omega, Gblocks, Mesquite, CLC Genomic Workbench, FastQC, Picard, Seq Crumbs, Trimmomatic, BowTie, TopHat, Khmer, Velvet/Oases, Trinity, SAMtools, BLAST, InterProScan, Phobius, SecretomeP, RefCov, Prodigal, Gfold, Rfam, FUNC, QuickGO, Cufflinks, DESeq, EBSeq, STRING, HMMER, IDBA, HGTector, Circos

Molecular Biology

Gel electrophoresis, Western blot, PAM fluorometry, Cell staining, Confocal microscopy

Microbiology

Cell culture, PCR, MIC, MPC, Kirby-Bauer Disk