

# Jess A. Millar

## Curriculum Vitae

### December 2020

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<b>EDUCATION</b>	<p><b>University of Michigan</b> <span style="float: right;">2022</span></p> <p>Ph.D. Bioinformatics <span style="float: right;">(exp)</span>  <i>Advsr.:</i> Aaron A. King &amp; Robert J. Woods  <i>Diss.:</i> “Hospital transmission of vancomycin - resistant <i>Enterococcus.</i>”</p> <p>M.P.H. Hospital &amp; Molecular Epidemiology  <i>Advsr.:</i> Denise E. Kirschner  <i>Thesis:</i> “Spatial organization and non-specific T cell recruitment may limit T cell-macrophage interactions within <i>Mycobacterium tuberculosis</i> granulomas.”</p> <p>Cert. Computational Discovery &amp; Engineering</p> <p><b>University of Michigan</b> <span style="float: right;">2020</span></p> <p>M.S. Bioinformatics</p> <p><b>Portland State University</b> <span style="float: right;">2017</span></p> <p>M.S. Biology  <i>Advsr.:</i> Rahul Raghavan  <i>Thesis:</i> “Uncovering <i>Coxiella burnetii</i>’s pathogenicity by elucidating its metabolism and host interactions.”</p> <p>M.S. Statistics  <i>Advsr.:</i> Yiyi Chen &amp; Mara Tableman  <i>Exams:</i> Mathematical Statistics, Applied Statistics  <i>Thesis:</i> “Machine learning techniques in cancer prognostic modeling and performance assessment.”</p> <p><b>Portland State University</b> <span style="float: right;">2014</span></p> <p>B.S. Micro/Molecular Biology, Health Studies, &amp; Science            Minor: Mathematics            Coll. &amp; Dept. Honors, <i>magna cum laude</i>  <i>Advsr.:</i> Daniel J. Ballhorn  <i>Thesis:</i> “Effect of mycorrhizal colonization and light limitation on growth and reproduction of lima bean.”</p> <p><b>Portland Community College</b> <span style="float: right;">2010</span></p> <p>A.S. Science</p>
<b>FELLOWSHIPS &amp; SCHOLARSHIPS</b>	<p>University of Michigan Rackham Merit Fellowship (\$238,000) <span style="float: right;">2017-2022</span></p> <p>University of Michigan Excellence in Basic Science Award (\$10,000) <span style="float: right;">2019-2021</span></p> <p>NSF Graduate Research Fellowship (\$138,000) <span style="float: right;">2016-2021</span></p> <p>University of Michigan SSE Teaching Assistantship (\$1,000) <span style="float: right;">2020</span></p> <p>University of Michigan SSE Tuition Scholarship [2x] (\$1,400) <span style="float: right;">2019-2020</span></p> <p>University of Washington SISIMID Tuition Scholarship (\$1,650) <span style="float: right;">2018</span></p>

University of Michigan Benard Maas Fellowship (\$5,000)	2017-2018
Fariborz Maseeh Statistics Teaching Assistantship [2x] (\$42,925)	2014-2017
Portland State Elsa Jorgenson Award [3x] (\$4,500)	2014-2017
Portland State Laurels Graduate Award (\$10,575)	2015-2016
Portland State President's Equal Access Scholarship (\$1,200)	2015-2016
Portland State Biology Graduate Research Assistantship (\$15,450)	2014-2016
Portland State Laurels Graduate Supplemental Tuition Grant (\$1,100)	2014-2015
Portland State Honors Laurels Merit Scholarship [2x] (\$1,100)	2013-2014
Oregon University System Supplemental Tuition Grant [2x] (\$3,900)	2010-2014
Oregon Opportunity Grant [4x] (\$7,775)	2010-2014
NIH-NHGRI Genomic Research Fellowship (\$4,150)	2013
NIH-NHGRI Genomic Research GRE Prep Scholarship (\$1,475)	2013
Portland State Supplemental Tuition Grant [2x] (\$6,000)	2011-2013
Ronald E. McNair Scholars Research Fellowship (\$2,800)	2012
Ronald E. McNair Scholars Supplemental Tuition Grant (\$1,775)	2011-2012
NIH-NIGMS Bridges to Baccalaureate Summer Research Fellowship (\$1,325)	2010

**RESEARCH & TRAVEL GRANTS**

American Society for Microbiology Research Capstone Fellowship (\$6,000)	2019-2021
University of Michigan Rackham Block Grant (\$1,150)	2020
University of Michigan Epidemiology Student Travel Grant [2x] (\$1,000)	2019-2020
University of Washington SISMID Travel Scholarship (\$450)	2018
University of Michigan RMF Bridge Stipend (\$500)	2017
Society for the Study of Evolution Travel Award (\$500)	2017
Emory MITII Summer School Travel and Lodging Grant (\$675)	2017
Society for Applied Microbiology Registration Fees Grant (\$200)	2017
Sigma Xi Grants-in-Aid of Research Copernicus Fund (\$1,000)	2016-2017
Pacific Northwest Women in Science Retreat Scholarship (\$125)	2016
Sigma Xi Columbia-Willamette Chapter Research Grant (\$100)	2016
Portland State Forbes-Lea Research Award (\$775)	2015-2016
American Society for Microbiology Student Travel Grant (\$500)	2015
American Society for Microbiology Research Capstone Grant (\$1,525)	2014
Rose E. Tucker Trust Undergraduate Research Grant [2x] (\$700)	2012-2014
Free Geek Computer Hardware Grant (\$1,000)	2013
NIH-NHGRI Genomic Research Conference Travel Grant [2x] (\$2,900)	2013
NIH-NHGRI Genomic Research Travel and Lodging Grant (\$2,125)	2013
Portland State AAA Conference Travel Grant (\$750)	2013
Harvard CCDD Conference Travel Grant (\$875)	2013
NIH-NIGMS Bridges to Baccalaureate Conference Travel Grant [2x] (\$1,950)	2012-2013
Ronald E. McNair Scholars Research Grant (\$200)	2012
Ronald E. McNair Scholars Conference Travel Grant (\$500)	2012

**REFEREED PUBLICATIONS**

Hebert JF, <b>Millar JA</b> , Raghavan R, Romney A, Podrabsky JE, Rennie MY, Felker A, O'Tierney-Ginn P, Morita M, DuPriest EA, Morgan TK. "Male fetal sex affects uteroplacental angiogenesis in growth restriction mouse model." <i>Biol Reprod.</i> (accepted)	2020
<b>Millar JA</b> , Butler JR, Evans S, Matilla J, Linderman JJ, Flynn JL, Kirschner DE. "Spatial organization and recruitment of non-specific T cells may limit T cell-macrophage interactions within <i>Mycobacterium tuberculosis</i> granulomas." <i>Front Immunol.</i> 11:613638.	2020

- Millar JA**. “The GRE in public health admissions: Barriers, waivers, and moving forward.” *Front Public Health*. 8:609599. 2020
- Chanderraj R, **Millar JA**, Patel T, Read AF, Washer L, Kaye KS, Woods RJ. “Vancomycin-resistant *Enterococcus* acquisition in a tertiary care hospital: Testing the roles of antibiotic use, proton pump inhibitor use, and colonization pressure.” *Open Forum Infect Dis*. 6(4):ofz139. 2019
- Zou Z, Qin H, Brenner A, Raghavan R, **Millar JA**, Gu Q, Xie Z, Kreth J, Merritt J. “LytTR Regulatory Systems: A potential new class of prokaryotic sensory system.” *PLoS Genet*. 14(10):e1007709. 2018
- Cicchese JM\*, Evans S\*, Hult C\*, Joslyn LR\*, Wessler T\*, **Millar JA**, Marino S, Cilfone NA, Mattila JT, Linderman JJ, Kirschner DE. “Dynamic balance of pro- and anti-inflammatory signals controls disease and limits pathology.” *Immunol Rev*. 285(1):147-167. (\*Co-first authors) 2018
- Schumann C\*, Chan S\*, **Millar JA**, Bortnyak YV, Carey K, Fedchyk AF, Wong L, Korzun T, Moses AS, Lorenz A, Shea D, Taratula OR, Khalimonchuk O, Taratula O. “Intraperitoneal nanotherapy for metastatic ovarian cancer based on siRNA-mediated suppression of DJ-1 protein combined with a low dose of cisplatin.” *Nanomedicine*. 14(4):1395-1405. (\*Co-first authors) 2018
- Millar JA**\*, Beare PA\*, Moses AS, Martens CA, Heinzen RA, Raghavan R. “Whole-genome sequence of *Coxiella burnetii* Nine Mile RSA439 (phase II, clone 4), a laboratory workhorse strain.” *Genome Announc*. 5(23):e00471-17. (\*Co-first authors) 2017
- Moses AS\*, **Millar JA**\*, Bonazzi M, Beare PA, Raghavan R. “Horizontally acquired biosynthesis genes boost *Coxiella burnetii*’s physiology.” *Front Cell Infect Microbiol*. 7:174. (\*Co-first authors) 2017
- Millar JA**, Raghavan R. “Accumulation and expression of horizontally acquired genes in *Arcobacter cryaerophilus* that thrives in sewage.” *PeerJ*. 5(2):e3269 (Correction: 5(1):e3269/correction-1). 2017
- Kacharia FR\*, **Millar JA**\*, Raghavan R. “Emergence of new sRNAs in enteric bacteria is associated with low expression and rapid evolution.” *J Mol Evol*. 84(4):204-213. (\*Co-first authors) 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 (*Phaseolus lunatus* L.).” *PLoS ONE*. 11(5):e0154116. 2016
- Millar JA**, Valdés R, Kacharia FR, Landfear SM, Cambronne ED, Raghavan R. “*Coxiella burnetii* and *Leishmania mexicana* residing within similar parasitophorous vacuoles elicit disparate host responses.” *Front Microbiol*. 6:794. 2015
- Raghavan R, Kacharia FR, **Millar JA**, Sislak CD, Ochman H. “Genome rearrangements can make and break small RNA genes.” *Genome Biol Evol*. 7(2):557-566. 2015

	<b>Millar JA</b> , 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, <b>Millar JA</b> , 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
<b>BOOK CHAPTERS</b>	Chen Y, <b>Millar JA</b> . "Machine learning techniques in cancer prognostic modeling and performance assessment." In: Matsui S, Crowley JJ. (eds.) <i>Frontiers of Biostatistical Methods and Applications in Clinical Oncology.</i> (pp. 193-230). Singapore: Springer.	2017
<b>SUBMITTED MANUSCRIPTS</b>	<b>Millar JA</b> , Raghavan R. "Bacterial regulation of virulence through antisense RNAs." <i>Front Cell Infect Microbiol.</i>	2020
<b>MANUSCRIPTS IN PREP</b>	<b>Millar JA</b> , Dao HDN, Stefopoulos M, Estevam CG, Fagan-Garcia K, Taft DH, Park C, Alruwaily A, Desai AN, Majumder M. "County-level variables associated with COVID-19 case-fatality rates in the United States." <i>Health Aff.</i>	2020
	Renardy M, Joslyn JR, <b>Millar JA</b> , Kirschner DE. "To Sobol or not to Sobol? The effects of sampling schemes in systems biology applications." <i>Wiley Interdiscip Rev Syst Biol Med.</i>	2020
	<b>Millar JA</b> , King AA, Woods RJ. "Quantifying transmission in healthcare acquired infections."	2020
	Mariita RM, <b>Millar JA</b> , Moss AG. "Draft genome of <i>Pseudoalteromonas</i> sp. strain BMB from the stomodeum of <i>Mnemiopsis leidyi</i> : Insights into biosynthetic gene clusters and antibiotic resistance determinants." <i>J Biotechnol.</i>	2020
	Tracy KC, McKaig JM, Kinnear CL, <b>Millar JA</b> , Read AF, Woods RJ. "Evolutionary traps slow the spread of a multidrug resistant pathogen in the hospital environment."	2020
	<b>Millar JA</b> , King AA, Woods RJ. "Hospital transmission of vancomycin - resistant <i>Enterococcus</i> ."	2020
<b>PUBLISHED ABSTRACTS</b>	Hebert JF, <b>Millar JA</b> , Romney A, Raghavan R, Podrabsky JE, Morgan TK. "Placental gene expression is affected by male fetal sex and maternal genotype in fetal growth restriction model." <i>Reprod Sci.</i> 24(S1):212A (abstract # F-138).	2017
	<b>Millar JA</b> , McNulty SN, Zarlenga DS, Mitreva M. "Transcriptional profiling of Ivermectin resistant <i>Cooperia punctata</i> using deep sequencing." <i>Mol Biol Cell.</i> 24(24):3775 (abstract #1026).	2013
	<b>Millar JA</b> , Ballhorn DJ. "Effects of light limitation on plant-rhizobia and plant-mycorrhiza interactions." <i>Anthós.</i> 4(2).	2012

**Millar JA.** “The SARS virus - Different methods of curbing the epidemic.” 2004  
55th ISEF Abstracts. Science Service, Washington, D.C.

**HONORS &  
AWARDS**

BWF Integrated Training in Microbial Systems Associate, UM 2020-2022  
Best Graduate Poster Presentation, oSTEM Conference 2020  
PeerJ Open Access Ambassador, PeerJ 2018-2019  
AAAS/Science Program for Excellence in Science 2015-2017  
SALP Academic Excellence Award, Portland State University [4x] 2013-2017  
NRHH Academic Achievement Award, Portland State University [8x] 2011-2017  
2<sup>nd</sup> 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  
Most Read Article, Journal of Applied Botany and Food Quality 2014  
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  
President's List, Portland State University [4x] 2010-2012  
President's List, Portland Community College [5x] 2008-2010

**CONFERENCE  
PRESENTATIONS**

**Millar JA.** “The GRE in public health admissions: Barriers, waivers, and moving forward.” 10th Annual Out in Science, Technology, Engineering, and Mathematics (oSTEM) Conference. Virtual. November 12<sup>th</sup>-15<sup>th</sup>. 2020

**Millar JA,** King AA, Woods RJ. “Quantifying hospital VRE screening compliance.” American Society for Microbiology Microbe 2020. Chicago, IL. June 18<sup>th</sup>-22<sup>nd</sup>. (*accepted, conference canceled*) 2020

**Millar JA,** Flynn JL, Linderman JJ, Kirschner DE. “The effects of *Mycobacterium tuberculosis* on T cell responsiveness in granulomas.” American Society for Microbiology Microbe 2019. San Francisco, CA. June 20<sup>th</sup>-24<sup>th</sup>. 2019

**Millar JA,** Flynn JL, Linderman JJ, Kirschner DE. “Using Multi-Scale Modeling to explore the effects of *Mycobacterium tuberculosis* on T cell responsiveness in granulomas.” Society for Industrial and Applied Mathematics Great Lakes Section 2019 Meeting. Ann Arbor, MI. April 27<sup>th</sup>. 2019

**Millar JA,** Chanderraj R, Woods RJ, King AA. “Quantifying the transmission dynamics of hospital acquired VRE.” 17<sup>th</sup> Annual Michigan Epidemiology Conference. Ann Arbor, MI. March 23<sup>rd</sup>. 2018

**Millar JA,** Moses AS, Bonazzi M, Beare PA, Raghavan R. “Horizontally acquired biosynthesis genes boost *Coxiella burnetii*’s physiology.” Evolution 2017. Portland, OR. June 23<sup>rd</sup>-27<sup>th</sup>. 2017

**Millar JA,** Moses AS, Bonazzi M, Beare PA, Raghavan R. “Horizontally acquired biosynthesis genes boost *Coxiella burnetii*’s physiology.” American Society for Microbiology Microbe 2017. New Orleans, LA. June 1<sup>st</sup>-5<sup>th</sup>. 2017

<b>Millar JA</b> , Chen Y. “Machine learning techniques in cancer prognostic modeling and performance assessment.” Immunology and Evolution of Influenza Symposium. Emory, Atlanta, GA. May 25 <sup>th</sup> -26 <sup>th</sup> .	2017
<b>Millar JA</b> , 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 <sup>th</sup> -20 <sup>th</sup> .	2016
<b>Millar JA</b> , Raghavan R. “Pathogens residing within similar intracellular vacuoles elicit discordant host responses.” 1 <sup>st</sup> Festival of Genomics California. San Mateo, CA. November 3 <sup>rd</sup> -5 <sup>th</sup> .	2015
<b>Millar JA</b> , 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 <sup>st</sup> Pacific Northwest Quantitative Biology Meeting. Portland, OR. September 11 <sup>th</sup> .	2015
<b>Millar JA</b> , 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 <sup>th</sup> General Meeting of the American Society for Microbiology. New Orleans, LA. May 30 <sup>th</sup> -June 2 <sup>nd</sup> .	2015
<b>Millar JA</b> , Raghavan R. “A horizontally acquired tRNA facilitates <i>Coxiella burnetii</i> adaptation to an extreme environment.” 114 <sup>th</sup> General Meeting of the American Society for Microbiology. Boston, MA. May 17 <sup>th</sup> -20 <sup>th</sup> .	2014
<b>Millar JA</b> , McNulty SN, Zarlenga D, Mitreva M. “Transcriptional profiling of Ivermectin resistant <i>Cooperia punctata</i> using deep sequencing.” 53 <sup>rd</sup> Annual Meeting of the American Society for Cell Biology. New Orleans, LA. December 14 <sup>th</sup> -18 <sup>th</sup> .	2013
<b>Millar JA</b> , McNulty SN, Zarlenga D, Mitreva M. “Transcriptional profiling of Ivermectin resistant <i>Cooperia punctata</i> using deep sequencing.” 2 <sup>nd</sup> International Conference on Genomics in the Americas. Sacramento, CA. September 12 <sup>th</sup> -13 <sup>th</sup> .	2013
<b>Millar JA</b> , Ballhorn DJ. “Effect of mycorrhizal colonization and light limitation on growth and reproduction of lima bean ( <i>Phaseolus lunatus</i> L.)” 113 <sup>th</sup> General Meeting of the American Society for Microbiology. Denver, CO. May 18 <sup>th</sup> -21 <sup>st</sup> .	2013
<b>Millar JA</b> , Ballhorn DJ. “Effects of light limitation on legume-mycorrhizae interactions.” 12 <sup>th</sup> Annual Biomedical Research Conference for Minority Students. San Jose, CA. November 7 <sup>th</sup> -10 <sup>th</sup> .	2012
<b>Millar JA</b> , Ballhorn DJ. “Effects of light limitation on plant-rhizobia and plant-mycorrhiza interactions.” 20 <sup>th</sup> Annual Pacific NW McNair/EIP/GO-MAP Research Conference. University of Washington, Seattle, WA. May 17 <sup>th</sup> .	2012
<b>Millar JA</b> . “The SARS virus - Different methods of curbing the epidemic.” 55 <sup>th</sup> Intel International Science and Engineering Fair. Portland, OR. May 9 <sup>th</sup> -14 <sup>th</sup> .	2004

**CAMPUS & MISC PRESENTATIONS**

- Millar JA.** “The GRE in public health admissions: Barriers, waivers, and moving forward.” Epidemiology Annual Internship Poster Session. University of Michigan, Ann Arbor, MI. November 6<sup>th</sup>. 2020
- Millar JA.** “Modeling microbial infections and measuring transmission.” Integrated Training in Microbial Systems Fall Retreat. University of Michigan, Ann Arbor, MI. September 9<sup>th</sup>. [talk] 2020
- Millar JA, Woods RJ, King AA.** “Quantifying transmission of hospital acquired vancomycin - resistant *Enterococcus*.” Bioinformatics Student Research Hour. University of Michigan, Ann Arbor, MI. May 7<sup>th</sup>. [talk] 2020
- Millar JA, Butler JR, Matilla J, Linderman JJ, Flynn JL, Kirschner DE.** “Spatial organization may limit T cell-macrophage interactions within *Mycobacterium tuberculosis* granulomas.” Research in Hospital and Molecular Epidemiology Seminar Series. University of Michigan, Ann Arbor, MI. January 28<sup>th</sup>. [talk] 2020
- Millar JA, Flynn JL, Linderman JJ, Kirschner DE.** “The effects of *Mycobacterium tuberculosis* on T cell responsiveness in granulomas.” Epidemiology Annual Internship Poster Session. University of Michigan, Ann Arbor, MI. November 8<sup>th</sup>. 2019
- Millar JA, Flynn JL, Linderman JJ, Kirschner DE.** “The effects of *Mycobacterium tuberculosis* on T cell responsiveness in granulomas.” PIBS 20th Anniversary Symposium. University of Michigan, Ann Arbor, MI. September 23<sup>rd</sup>. 2019
- Millar JA, Flynn JL, Linderman JJ, Kirschner DE.** “The effects of *Mycobacterium tuberculosis* on T cell responsiveness in granulomas.” Department of Computational Medicine and Bioinformatics 5<sup>th</sup> Annual Retreat. Oregon, OH. September 13<sup>th</sup>-15<sup>th</sup>. 2019
- Millar JA, Flynn JL, Linderman JJ, Kirschner DE.** “The effects of *Mycobacterium tuberculosis* on T cell responsiveness in granulomas.” Michigan Institute for Computational Discovery and Engineering 6<sup>th</sup> Annual Symposium. University of Michigan, Ann Arbor, MI. April 10<sup>th</sup>. 2019
- Millar JA, Chanderraj R, Woods RJ, King AA.** “Quantifying the transmission dynamics of hospital acquired VRE.” Department of Computational Medicine and Bioinformatics 4<sup>th</sup> Annual Retreat. Frankenmuth, MI. September 14<sup>th</sup>-16<sup>th</sup>. 2018
- Millar JA, Linderman JJ, Kirschner DE.** “Exploring the direct effects of *Mycobacterium tuberculosis* on T cell responsiveness.” Michigan Institute for Computational Discovery and Engineering 5<sup>th</sup> Annual Symposium. University of Michigan, Ann Arbor, MI. March 22<sup>nd</sup>. 2018
- Millar JA, Chanderraj R, Woods RJ, King AA.** “Quantifying the transmission dynamics of hospital acquired VRE.” Multi-Scale Bio-Imaging in Systems Biology Symposium. University of Michigan, Ann Arbor, MI. January 31<sup>st</sup>. 2018
- Millar JA, Moses AS, Bonazzi M, Beare PA, Raghavan R.** “Horizontally acquired biosynthesis genes boost *Coxiella burnetii*'s physiology.” Department 2017

- of Computational Medicine and Bioinformatics 3<sup>rd</sup> Annual Retreat. Oregon, OH. September 15<sup>th</sup>-17<sup>th</sup>.
- Millar JA**, Moses AS, Bonazzi M, Beare PA, Raghavan R. “Horizontally acquired biosynthesis genes boost *Coxiella burnetii*’s physiology.” Biology Graduation Symposium. Portland State University, Portland, OR. June 16<sup>th</sup>. 2017
- Millar JA**, Chen Y. “Machine learning techniques in cancer prognostic modeling and performance assessment.” 6<sup>th</sup> Annual OHSU Research Week. Oregon Health Science University, Portland, OR. May 1<sup>st</sup>-3<sup>rd</sup>. 2017
- Millar JA**, Raghavan R. “A sewage microbiome is dominated by *Arcobacter cryaerophilus* that expresses multiple drug resistance and virulence genes.” 20<sup>th</sup> Annual Biology Alumni Night Symposium. Portland State University, Portland, OR. October 21<sup>st</sup>. 2016
- Millar JA**, Raghavan R. “A sewage microbiome is dominated by *Arcobacter cryaerophilus* that expresses multiple drug resistance and virulence genes.” 4<sup>th</sup> Annual Pacific Northwest Women in Science Retreat. Rockaway Beach, OR. July 8<sup>th</sup>-10<sup>th</sup>. 2016
- Millar JA**, Raghavan R. “A horizontally acquired tRNA facilitates *Coxiella burnetii* adaptation to an extreme environment.” Sigma Xi Columbia-Willamette Chapter Annual Meeting. Portland, OR. May 26<sup>th</sup>. [talk] 2016
- Millar JA**, Raghavan R. “Pathogens residing within similar intracellular vacuoles elicit discordant host responses.” 19<sup>th</sup> Annual Biology Alumni Night Symposium. Portland State University, Portland, OR. October 23<sup>th</sup>. 2015
- Millar JA**, Raghavan R. “Parallel adaptation of a bacterium and an eukaryote to an intracellular extreme environment.” 18<sup>th</sup> Annual Biology Alumni Night Symposium. Portland State University, Portland, OR. October 17<sup>th</sup>. 2014
- Millar JA**, McNulty SN, Zarlenga D, Mitreva M. “Transcriptional profiling of Ivermectin resistant *Cooperia punctata* using deep sequencing.” 7<sup>th</sup> Annual Opportunities in Genomic Research Undergraduate Scholars Closing Program. Washington University School of Medicine, St. Louis, MO. July 31<sup>st</sup>. [talk] 2013
- Millar JA**, Ballhorn DJ. “Effect of mycorrhizal colonization and light limitation on growth and reproduction of lima bean (*Phaseolus lunatus* L.).” 9<sup>th</sup> Annual Sigma Xi Columbia-Willamette Chapter Student Research Symposium. Portland State University, Portland, OR. April 12<sup>th</sup>. 2013
- Millar JA**, Ballhorn DJ. “Effects of light limitation on plant-microbe interactions.” 9<sup>th</sup> Annual PSU Ronald E. McNair Scholars Program Summer Symposium. Portland State University, Portland, OR. August 15<sup>th</sup>. [talk] 2012
- Millar JA**, Ballhorn DJ. “Effects of light limitation on plant-rhizobia and plant-mycorrhiza interactions.” 9<sup>th</sup> Annual PSU Undergraduate Research Conference. Portland State University, Portland, OR. May 23<sup>rd</sup>. 2012
- Millar JA**, Kelley AL, Buckley BA. “Antibody testing for C/EBP $\delta$  in aquatic snails.” Portland Bridges to Baccalaureate Annual Meeting. Portland State 2010

University, Portland, OR. October 15<sup>th</sup>.

**Millar JA.** "Galinstan: Useful applications of a eutectic alloy." 1<sup>st</sup> Annual Better Living Through Chemistry in the 21<sup>st</sup> Century. Portland Community College, Portland, OR. March, 10<sup>th</sup>. 2007

**RESEARCH  
EXPERIENCE**

**NSF Graduate Research Fellow, UM RMF Fellow,** University of Michigan 2017-2022  
Depts. of Mathematics, Ecology & Evolutionary Biology, Advisor: Dr. King  
Dept. of Internal Medicine, Advisor: Dr. Woods  
Transmission and evolution of antibiotic resistant bacteria in hospitals.

**NSF Graduate Research Fellow, UM RMF Fellow,** University of Michigan 2018-2020  
Department of Microbiology & Immunology, Advisor: Dr. Kirschner  
Modeling *Mycobacterium tuberculosis* within-host infection and treatment.

**Graduate Research Assistant,** Oregon Health & Science University 2016-2017  
Department of Public Health & Preventive Medicine, Advisor: Dr. Chen  
Oncological prognostic modeling using machine learning techniques.

**PSU Laurels Graduate Scholar,** Portland State University 2013-2017  
Department of Biology, Advisor: Dr. Raghavan  
Pathogenic bacterial genome evolution and adaption to host niches.

**Graduate Research Assistant,** Portland State University 2012-2017  
Fariborz Maseeh Dept. of Mathematics & Statistics, Advisor: Dr. Tableman  
Experimental design and analysis of agriculture data.

**NIH-NHGRI Genomic Research Scholar,** Washington Univ. in St. Louis 2013  
McDonnell Genome Institute, Advisor: Dr. Mitreva  
Differential gene expression of Ivermectin resistant *Cooperia punctata* in cattle in response to drug treatment.

**Ronald E. McNair Scholar, PSU Urban Honors,** Portland State University 2011-2013  
Department of Biology, Advisor: Dr. Ballhorn  
Fitness shifts between *Phaseolus lunatus* and mycorrhizae in response to light limitation.

**Undergraduate Research Assistant,** Portland State University 2011  
Department of Biology, Advisor: Dr. Yeh  
Diversity of *Staphylococcus* ssp. antibiotic resistance in public transit.

**NIH-NIGMS Bridges Scholar,** Portland State University 2010-2011  
Department of Biology, Advisor: Dr. Buckley  
Protein expression level analysis of physiological heat shock and bacterial infection response in marine animals.

**Undergraduate Research Assistant,** Oregon Health & Science University 2002-2003  
Department of Cell & Developmental Biology, Advisor: Dr. Danilchik  
Furrow-specific endocytosis during cytokinesis in *Xenopus laevis*.

**MEDIA FEATURES**

“Pandemic takeaway: Time to waive GRE requirement for public health degrees.” University of Michigan News. Website feature. September 29 <sup>th</sup> .	2020
“Bioinformatics with Jess Millar.” LGBTQ+ Stem Cast. #8. Podcast. September 21 <sup>st</sup> .	2020
“Rackham candidacy ceremony celebrates important doctoral milestone.” Rackham Graduate School News. Website feature. February 13 <sup>th</sup> .	2020
“Students of MI: Jess.” Michigan Association of State Universities: Get MI Degree. Website feature. February 14 <sup>th</sup> .	2019
“LytTR Regulatory Systems: A potential new class of prokaryotic sensory system.” PLoS Genet. 14(10). Website feature cover image. October 12 <sup>th</sup> -26 <sup>th</sup> .	2018
“Second Annual LGBTQ Monologues event creates space for intersectional identities.” The Michigan Daily. 128(10):1A. Newspaper. October 12 <sup>th</sup> .	2018
“Stateside: Detroit hospital under investigation; coming out stories; politics in the classroom.” Michigan Radio. Radio interview. October 11 <sup>th</sup> .	2018
“Introduction to modeling viral infections and immunity.” Immunol Rev. 285(1):5-8. Editorial feature. August 11 <sup>th</sup> .	2018
“The Spell of Coxiella.” Small Things Considered. Blog post. July 10 <sup>th</sup> .	2017
“Living in the Stomach of a Cell.” This Week in Microbiology. #155. Podcast. June 28 <sup>th</sup> .	2017
“Portland State graduate student Jess Millar wins NSF GRFP award.” Portland State University News. Website feature. May 16 <sup>th</sup> .	2016
“Jess Millar: Honors success.” Portland State University News. Website feature. December 4 <sup>th</sup> .	2013
“Is the public transportation system safe from a public health perspective?” Public Health Res Perspect. 2(3):149-150. Editorial feature. November 25 <sup>th</sup> .	2011
“Germs on wheels.” PSU Vanguard. 66(4):4. Newspaper. July 19 <sup>th</sup> .	2011
“Riding TriMet? Plenty of bugs could be sharing your seat.” The Oregonian. Front page article. July 14 <sup>th</sup> .	2011
“Study: TriMet bus seats tested for bacteria.” KGW News. TV interview. July 14 <sup>th</sup> .	2011

**MENTORED STUDENTS**

Amanda Brenner ( <i>PSU Biology undergraduate</i> )	2017
Auguste Dutcher ( <i>PSU Biology postbac</i> )	2016-2017
Abe Moses ( <i>PSU Biology postbac</i> )	2013-2014
Tina Schroyer ( <i>PSU Biology &amp; Envir. Sciences undergrad, McNair Scholar</i> )	2012-2014
Janice Ballantine ( <i>PSU P.A.C.E. graduate</i> )	2012
Katherine Huynh ( <i>PSU Biology undergraduate, Millennium Gates Scholar, LSAMP Scholar, McNair Scholar</i> )	2011
Dominick Keim-bay ( <i>PSU Biology undergraduate, LSAMP Scholar</i> )	2011

**TEACHING ACTIVITIES**

<b>Teaching Assistant</b> , University of Michigan Department of Epidemiology Molecular Epidemiology (Win. '21) Survival Analysis Applied to Epidemiologic & Medical Data (Sum. '20)	2020-2021
<b>Guest Lecturer</b> , University of Michigan Department of Epidemiology Molecular Epidemiology (Win. '19, Win. '20) Contemporary Methods (Fall. '21) ( <i>upcoming</i> )	2019-2020

<p><b>Assistant Grader</b>, University of Michigan  Department of Biology  Principles of Animal Physiology (Win. '18, Win. '19, Fall '19, Win. '20)</p>	<p>2018-2020</p>
<p><b>Guest Lecturer</b>, Portland State University  McNair Scholars Program  “Preparing for Grad School.” McNair Seminar (Spr. '16, Spr. '17, Spr. '19, Sum. '20)  “Funding Outside of McNair.” McNair Seminar (Spr. '15, Spr. '16, Spr. '17, Spr. '19, Sum. '20)  Department of Mathematics and Statistics  Applied Statistics for Business (Sum. '17)  Statistical Consulting (Spr. '17)</p>	<p>2015-2020</p>
<p><b>Guest Lecturer</b>, Oregon Health &amp; Science University  Department of Public Health &amp; Preventive Medicine  Categorical Data Analysis (Spr. '17)</p>	<p>2017</p>
<p><b>Teaching Assistant</b>, Portland State University  Department of Mathematics and Statistics  Intro to Probability &amp; Statistics I (Win. '15, Fall '16, Spr. '17)  Intro to Probability &amp; Statistics II (Spr. '15, Win. '17)  Intro to Probability &amp; Statistics for Business II (Fall '14)</p>	<p>2014-2017</p>
<p><b>Teaching Assistant</b>, Portland Community College  Department of Mathematics  Calculus I (Spr. '13, Sum. '14)</p>	<p>2013-2014</p>

**PROFESSIONAL SERVICE**

<p>Mentor – Public Health Undergraduate-Graduate Mentorship Program, UM</p>	<p>2020-2021</p>
<p>Peer Mentor – Bioinformatics Peer Mentorship Program, UM</p>	<p>2019-2021</p>
<p>Letter Co-author – “An Open Letter Response to NSF 20-587 GRFP.”</p>	<p>2020</p>
<p>Contributing Member – COVID-19 Dispersed Volunteer Research Network</p>	<p>2020</p>
<p>Finalist Judge – Northwest Science Expo State Science Fair</p>	<p>2020</p>
<p>Curator – “Public Health Graduate Programs Dropping GRE Requirement List”</p>	<p>2019-2020</p>
<p>Committee Member – PIBS Curriculum Committee, UM</p>	<p>2019-2020</p>
<p>Application Mentor – Office National Scholarships and Fellowships, UM [4x]</p>	<p>2017-2020</p>
<p>Panelist – “NSF GRF Workshop.” Program in Biomedical Sciences, UM [4x]</p>	<p>2017-2020</p>
<p>Panelist – “1st Gen Student Success.” National Academic Advising Association  Great Lakes Region Conference</p>	<p>2019</p>
<p>Journal Reviewer – Environmental Science &amp; Technology</p>	<p>2018</p>
<p>Abstract Reviewer – ASM Microbe Conference</p>	<p>2018</p>
<p>Panelist – “Research Methodology.” McNair Scholars Program, PSU [4x]</p>	<p>2013-2017</p>
<p>Judge – Intel Northwest Science Expo State Science Fair</p>	<p>2016</p>
<p>Panelist – “Options After Undergrad.” TRiO Student Support Services, PSU</p>	<p>2015</p>
<p>Committee Member – Portland State Student Educational Travel Committee</p>	<p>2013-2014</p>
<p>Conference Volunteer – XXXII Scientific Committee on Antarctic Research</p>	<p>2012</p>
<p>Website Developer – Portland State Biology Professor (Dr. Yeh)</p>	<p>2011</p>

**UNIVERSITY SERVICE**

<p>Admissions Committee Consultant – “COVID-19 Emergency GRE Waiver.”  Office for Student Engagement and Practice, School of Public Health, UM</p>	<p>2020</p>
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Student Host – Program in Biomedical Sciences Preview Visit, UM	2020
Panelist – “Explore Michigan Engineering Research and Graduate Education (EMERGE) 2020 Virtual Event.” Office of Student Affairs, UM	2020
Panelist – “TRiO/McNair Scholars Virtual Visit: Transitioning to Graduate Programs.” Rackham Graduate School, UM	2020
Board Member – 1st Generation Graduate Student Advisory Committee, UM	2020
Speaker – “Ph.D. Doctoral Candidacy Ceremony.” Rackham, UM	2020
Epidemiology Dept. Lead – Sexual and Gender Diversity in Public Health, UM	2019-2020
Student Host – Program in Biomedical Sciences Interview Weekend, UM [3x]	2018-2020
Outreach Volunteer – Kent State TRiO & McNair Scholars Visit [2x]	2019
Committee Member – Bioinformatics Website Committee, UM	2018-2019
Panelist – Student Life Professional Development Conference, UM	2017
Statistics Tutor – Math/Stats Dept., PSU	2015-2017
Computer Lab Assistant – Math/Stats Dept., PSU	2014-2017
Planning 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., PSU	2011-2012

**OUTREACH & COMMUNITY SERVICE**

Volunteer Financial Aid Advisor – “Wolverine Pathways FAFSA Navigation.” Association of Multicultural Scientists, UM	2020
Expert Interviewee – “Algorithmic Bias.” Student project, PCC	2020
Social Media Facilitator – “GRE Bias/Removal.” Twitter, @AcademicGREtalk	2020
Speaker – “Wolverine Pathways Professional Development Day: Career Workshop.” Association of Multicultural Scientists, UM	2019
Panelist – “Queer in STEM: A Post-Graduate Experience.” Rackham Graduate School, Spectrum Center, UM	2019
Speaker – “Becoming Comfortable with Failure.” Rackham Student Government Failure Symposium, UM [2x]	2019
Panelist – “Navi(Gay)ting Grad School.” Spectrum Center, UM	2019
Science Communicator – “Ask a Scientist.” Engaging Scientists in Policy and Advocacy, UM	2018
Symposium Volunteer – LGBTQ Inclusion as Researchers & in Research, UM	2018
Committee Member – Teach-in for Freedom, Democracy, and Diversity, UM	2018
Secretary – Biology Investigation and Outreach, PSU Chapter	2016-2017
Volunteer – Portland State Reuse Room	2013-2014
Volunteer – Free Geek, Portland, OR	2012-2013
Archives Assistant – City of Portland Archives and Records Center	2010-2011
Assistant Docent – 3D Center of Art and Photography, Portland, OR	2010
Lab Assistant – Red Cross, Portland, OR	2006-2008

**SHORT COURSES**

<b>University of Michigan</b>	2016-2020
55 <sup>th</sup> Annual Summer Session in Epidemiology. Ann Arbor, MI. July 12 <sup>th</sup> -31 <sup>st</sup> . Introduction to Multilevel Analysis in Public Health	
54 <sup>th</sup> Annual Summer Session in Epidemiology. Ann Arbor, MI. July 7 <sup>th</sup> -26 <sup>th</sup> . Spatial Statistics for Epidemiologic Data	
Python for Everybody. Coursera. Programming for Everybody (Getting Started with Python) Python Data Structures	
<b>University of Washington</b>	2018
10 <sup>th</sup> Annual Summer Institute in Statistics and Modeling in Infectious Diseases.	

Seattle, WA. July 9 <sup>th</sup> -25 <sup>th</sup> . Simulation-based Inference for Epidemiological Dynamics Evolutionary Dynamics and Molecular Epidemiology of Viruses Spatial Statistics in Epidemiology and Public Health	
<b>Emory University</b> 12 <sup>th</sup> Annual Summer School on Modeling Immunology. Atlanta, GA. May 21 <sup>st</sup> -24 <sup>th</sup> . Infectious Diseases, Immunology, and Within-Host Models Spatial Spread of Virus Infections and Immunity Using Agent-Based Models Pathogen Evolution, Selection, and Immunity	2017
<b>Portland Community College</b> Introduction to Perl Programming. Community Education Online Learning. Perl Programming Level I	2012

**CONFERENCES,  
SEMINARS, &  
WORKSHOPS  
ATTENDED**

Society for Mathematical Biology Virtual Annual Meeting. August 17 <sup>th</sup> -20 <sup>th</sup> .	2020
Mathematical Models for Prediction and Control of Epidemics Workshop.	2020
Mathematical Sciences Research Institute. Virtual. August 12 <sup>th</sup> -14 <sup>th</sup> .	
Tools & Technology Seminar Series. University of Michigan, Ann Arbor, MI.	2017-2020
Bioinformatics Student Research Hour. University of Michigan, Ann Arbor, MI.	2017-2020
MAC-EPID 32 <sup>nd</sup> Symposium: Diversity and Ecology of Virus in Human Health and the Environment. University of Michigan, Ann Arbor, MI. October 4 <sup>th</sup> .	2019
ASM 9 <sup>th</sup> Annual Microbe Academy for Professional Development. American Society for Microbiology, San Francisco, CA. June 19 <sup>th</sup> -20 <sup>th</sup> .	2019
MAC-EPID 31 <sup>st</sup> Symposium: Evolving Perspectives on Microbial Systems. University of Michigan, Ann Arbor, MI. March 29 <sup>th</sup> .	2019
MAC-EPID 30 <sup>th</sup> Symposium: Malaria Ecology and Epidemiology: Challenges to Interrupting Transmission. University of Michigan, Ann Arbor, MI. October 26 <sup>th</sup> .	2018
LGBTQ Inclusion as Researchers & in Research Symposium. University of Michigan, Ann Arbor, MI. September 6 <sup>th</sup> .	2018
Mentoring Others Results in Excellence Mentoring Plan Workshop. University of Michigan, Ann Arbor, MI. May 8 <sup>th</sup> .	2018
Mentorship and Professional / Personal Support Program. University of Michigan, Ann Arbor, MI.	2018
Microbiology Career Choices: What's Available and How to Succeed Workshop. American Society for Microbiology, New Orleans, LA. June 1 <sup>st</sup> .	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 <sup>nd</sup> .	2016
Data After Dark - BD2K Data Science Workshop. Oregon Health Science University, Portland, OR. January 13 <sup>th</sup> -14 <sup>th</sup> .	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 <sup>th</sup> .	2014
ASM 4 <sup>th</sup> Annual Capstone Research Institute. American Society for	2014

Microbiology, Boston, MA. May 16 <sup>th</sup> -17 <sup>th</sup> . Studying Whole-Genome Microbial Epigenetics Workshop. American Society for Microbiology, Denver, CO. May 18 <sup>th</sup> .	2013
America's Next Top Infectious Disease Model: HIV and Influenza Conference. Center for Communicable Disease Dynamics, Chicago, IL. April 21 <sup>st</sup> -22 <sup>nd</sup> .	2013
10th Western Regional International Health Conference. Portland, OR. April 5 <sup>th</sup> -7 <sup>th</sup> .	2013
XXXII Scientific Committee on Antarctic Research Conference. Portland, OR. July 16 <sup>th</sup> -19 <sup>th</sup> .	2012

<b>PROFESSIONAL AFFILIATIONS</b>	Michigan Public Health Association	2018-2020
	American Public Health Association	2018-2020
	American Statistical Association	2017-2020
	Association for Women in Mathematics	2015-2020
	American Mathematical Society	2014-2020
	Sigma Xi	2013-2020
	Society for Industrial and Applied Mathematics	2012-2020
	American Society for Microbiology	2011-2020
	American Association for the Advancement of Science	2015-2019
	Society for the Study of Evolution	2017
	Genetics Society of America	2016-2017
	Society for Applied Microbiology	2014-2017
	American Society for Cell Biology	2013-2014

<b>PUBLICATION METRICS</b>	<b>Papers</b>	17	<b>Cites/paper</b>	13.65	<b>h-index</b>	10
	<b>Citations</b>	232	<b>Cites/author</b>	53.70	<b>g-index</b>	15
	<b>Years</b>	10	<b>Papers/author</b>	4.62	<b>i-10 index</b>	10
	<b>Cites/Year</b>	23.20	<b>Authors/paper</b>	5.94	<b>Erdős number</b>	4

<b>TECHNICAL SKILLS</b>	<b>Computer Languages</b> Shell script, Python, Perl, SQLite, LaTeX, HTML, CSS
	<b>Statistical Software</b> R, SAS, MATLAB, Minitab, Maple, SPSS
	<b>Statistics/Machine Learning Techniques</b> Logistic Regression, Classification Trees, Random Forrest, Boosting, SVM, Naïve Bayes, Bayesian Networks, LDA, QDA, KNN, K-means, EM algorithm, Survival analysis, ARIMA, Experimental design
	<b>Bioinformatics Software</b> PhyML, PHYLIP, RAxML, MrBayes, Clustal Omega, Gblocks, Mesquite, CLC Genomic Workbench, FastQC, Trimmomatic, BowTie, TopHat, Trinity, SAMtools, BLAST, InterProScan, Prodigal, Gfold, Rfam, FUNC, QuickGO, DESeq, EBSeq, STAR, RSEM, kallisto, STRING, HMMER, IDBA, HGTector, Circos
	<b>Bioinformatics Techniques</b> Sequence alignment, Neighbor-joining, Maximum likelihood trees, Bayesian trees, RNA-Seq, De novo assembly, Metagenomic

assembly, GO term enrichment, Differential gene expression,  
Differential isoform expression, Protein-protein interaction networks

**Molecular Biology**

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

**Microbiology**

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