

Ryan M. Moore

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Education

- Ph.D. (in progress), Bioinformatics & Systems Biology. **University of Delaware**, Newark, DE. K. Eric Wommack, advisor.
- B.S., Mathematics (Hons.); Minors in Biology, Music. (2011). **Chestnut Hill College**, Philadelphia, PA.

Study abroad

- **Université Catholique de Lyon**, Lyon, France. (2012).
- **University of Canterbury**, Christchurch, New Zealand. (2008).

Awards & Distinctions

- University of Delaware Doctoral Fellowship. (2018 – 2019).
- *Magna Cum Laude*, Mathematics, Chestnut Hill College. (2011).
- Departmental honors in mathematics, Chestnut Hill College. (2011).
- Kappa Gamma Pi honors society, Chestnut Hill College. (2011).
- Sigma Zeta honors society, Chestnut Hill College. (2011).
- Delta Epsilon Sigma honors society (President), Chestnut Hill College. (2010).
- Alpha Lambda Delta honors society (Senior Advisor), Chestnut Hill College. (2007).

Professional Society Membership

- American Society for Microbiology. (2015).

Research & Scholarly Activity

Manuscripts & preprints

1. DJ Nasko, BD Ferrell, **RM Moore**, JD Bhavsar, SW Polson, KE Wommack. (Mar 2019). *CRISPR Spacers Indicate Preferential Matching of Specific Virioplankton Genes*. mBio, 10 (2) e02651-18; doi: 10.1128/mBio.02651-18.
2. AO Harrison, **RM Moore**, SW Polson, KE Wommack. (Feb 2019). *Reannotation of the Ribonucleotide Reductase in a Cyanophage Reveals Life History Strategies Within the Virioplankton*. Frontiers in Microbiology, 10, 134; doi: 10.3389/fmicb.2019.00134.

3. SM McAllister, **RM Moore**, A Gartman, GW Luther, D Emerson, CS Chan. (Jan 2019). *The Fe(II)-oxidizing Zetaproteobacteria: Historical, ecological, and genomic perspectives*. FEMS Microbiology Ecology, fizo15, doi; 10.1093/femsec/fizo15.
4. SM McAllister*, **RM Moore***, CS Chan. (Aug 2018). *ZetaHunter, a Reproducible Taxonomic Classification Tool for Tracking the Ecology of the Zetaproteobacteria and Other Poorly Resolved Taxa*. Microbiology Resource Announcements, 7 (7) e00932-18; doi: 10.1128/MRA.00932-18. (*Contributed equally)
5. **RM Moore**, AO Harrison, SM McAllister, KE Wommack. (Aug 2018). *Iroki: automatic customization and visualization of phylogenetic trees*. bioRxiv 106138; doi: 10.1101/106138.
6. JM Chopyk, **RM Moore**, ZR Stromberg, GL Lewis, DG Renter, N Cernicchiaro, RA Moxley, KE Wommack. (Mar 2016). *Presence of pathogenic Escherichia coli is correlated with bacterial community diversity and composition on pre-harvest cattle hides*. Microbiome 4:9; doi: 10.1186/s40168-016-0155-4

Theses

1. **RM Moore**. (2010). *A Survey of Applications of Linear Algebra to Other Branches of Mathematics*. Honors thesis in Mathematics. Chestnut Hill College.

Posters & Presentations

1. KE Wommack, SW Polson, BD Ferrell, DJ Nasko, JM Chopyk, EG Sakowski, RM Marine, AO Harrison, and **RM Moore**. (Jun 2019). *Genes Demonstrating Important Phenomic Connections Can Improve Ecological Understanding Of Unknown Viruses Of Microbes*. ASM Microbe 2019, San Francisco, CA. (Poster)
2. **RM Moore**, AO Harrison, SW Polson, and KE Wommack. (Mar 2019). *InteinFinder: automated intein detection from large protein datasets*. The 4th DENIN Symposium for Environmental Research, University of Delaware, Newark, DE. (Poster)
3. AO Harrison, **RM Moore**, BD Ferrell, SW Polson, and KE Wommack. (Mar 2019). *Reannotation of the ribonucleotide reductase in a cyanophage reveals life history strategies*. The 4th DENIN Symposium for Environmental Research, University of Delaware, Newark, DE. (Poster)
4. K Haramoto, **RM Moore**, P Joglekar, V Richards, SW Polson, KE Wommack, and J Fuhrmann. (Feb 2019). *Host Range Comparison of Lytic Rhizobiophages*. The 4th DENIN Symposium for Environmental Research, University of Delaware, Newark, DE. (Poster)
5. **RM Moore**. (Feb 2019). *InteinFinder: automated intein detection from large protein datasets*. The 7th Annual UD Microbial Systems Symposium, University of Delaware, Newark, DE. (Presentation)
6. K Haramoto, **RM Moore**, P Joglekar, V Richards, SW Polson, KE Wommack, and J Fuhrmann. (Feb 2019). *Host Range Comparison of Lytic Rhizobiophages*. The 7th Annual UD Microbial Systems Symposium, University of Delaware, Newark, DE. (Poster)
7. KE Wommack, SW Polson, BD Ferrell, DJ Nasko, JM Chopyk, EG Sakowski, RM Marine, AO Harrison, JF Dums, and **RM Moore**. (Jan 2019). *Squeezing out understanding from sequences: Genome to Phenome Connections in Viruses of Microbes*. The 4th Xiamen Symposium on Marine Environmental Sciences, Xiamen, China. (Poster)

8. AO Harrison, **RM Moore**, BD Ferrell, SW Polson, KE Wommack. (Jun 2018). *Ribonucleotide reductase as a marker for marine viroplankton communities*. Aquatic Virus Workshop 9, University of Nebraska-Lincoln, Lincoln, NE. (Poster)
9. AO Harrison, **RM Moore**, BD Ferrell, SW Polson, KE Wommack. (May 2018). *Ribonucleotide reductase as a marker for marine viroplankton communities*. College of Earth, Ocean, and Environment Graduate Student Symposium, University of Delaware, Newark, DE.
10. AO Harrison, **RM Moore**, BD Ferrell, SW Polson, KE Wommack. (Mar 2018). *Ribonucleotide reductase as a marker for marine viroplankton communities*. Viral EcoGenomics and Applications Symposium (VEGA), San Francisco, CA. (Poster)
11. AO Harrison, **RM Moore**, KE Wommack. (Feb 2018). *Ribonucleotide reductase as a marker for marine viroplankton populations*. Sixth Annual Microbial Systems Symposium, University of Delaware, Newark, DE. (Poster)
12. **RM Moore**, JM Chopyk, AO Harrison, SM McAllister, D Renter, N Cernicchiaro, R Moxley, and KE Wommack. (Jun 2017). *Analyzing connections between microbial community structure and pathogenic E. coli in cattle hide and feces*. 2017 Annual STEC-CAP Conference, Lincoln, NE. (Poster)
13. **RM Moore**, AO Harrison, SM McAllister, RL Marine, CS Chan, and KE Wommack. (Jun 2017). *Iroki: automatic customization for phylogenetic trees*. 2017 CANR Research Symposium, University of Delaware, Newark, DE. (Poster)
14. AO Harrison, **RM Moore**, JM Chopyk, D Renter, N Cernicchiaro, R Moxley, KE Wommack. (Feb 2017). *Examining connections between viral community diversity and pathogenic E. Coli in pre-harvest cattle feces using DNA Polymerase A*. Fifth Annual Microbial Systems Symposium, University of Delaware, Newark, DE. (Poster)
15. **RM Moore**, JM Chopyk, PR Joglekar, AO Harrison, N Cernicchiaro, D Renter, R Moxley, KE Wommack. (Jun 2016). *Exploring connections between pathogenic E. coli and shifts in viral and bacterial community structure and metabolic potential in pre-harvest cattle feces*. 2016 Annual STEC-CAP Conference, Lincoln, NE. (Poster)
16. AO Harrison, **RM Moore**, JM Chopyk, D Renter, N Cernicchiaro, R Moxley, KE Wommack. (Jun 2016). *Examining connections between viral community diversity and pathogenic E. Coli in pre-harvest cattle feces using DNA Polymerase A*. 2016 Annual STEC-CAP Conference, Lincoln, NE. (Poster)
17. AO Harrison, **RM Moore**, RM Marine, SW Polson, KE Wommack. (May 2016). *Fine scale temporal dynamics of estuarine bacterioplankton and viroplankton*. 2016 DENIN Scholars Symposium, University of Delaware, Newark, DE. (Poster)
18. CE Shatley, **RM Moore**, and SW Polson. (Aug 2015). *Examining the accuracy of recruitment based abundance estimations in metagenomes*. 2015 Summer Scholars poster presentation, University of Delaware, Newark, DE. (Poster)
19. JM Chopyk, **RM Moore**, AMC Ferelli, D Renter, N Cernicchiaro, R Moxley, KE Wommack. (Jun 2015). *Microbiome influences on STEC prevalence in pre-harvest cattle*. 2015 Annual STEC-CAP Conference, Manhattan, KS. (Presentation)
20. **RM Moore**, J Chopyk, N Cernicchiaro, D Renter, R Moxley, KE Wommack. (Jun 2015). *Shiga toxigenic Escherichia coli is associated with shifts in the bacterial community structure of pre-harvest cattle hides*. 2015 Annual STEC-CAP Conference, Manhattan, KS. (Poster)
21. JM Chopyk, DJ Nasko, EG Sakowski, **RM Moore**, SW Polson, KE Wommack. (Jun 2015). *Using Polymerase A to explore evolutionary relationships, replicase organization and diversity in viral assemblages*. 115th General Meeting of the American Society for Microbiology, New Orleans, LA. (Poster)
22. **RM Moore**, J Chopyk, N Cernicchiaro, D Renter, R Moxley, KE Wommack. (Jun 2015). *Shiga toxigenic Escherichia coli is associated with shifts in the bacterial*

- community structure of pre-harvest cattle hides.* 115th General Meeting of the American Society for Microbiology, New Orleans, LA. (Poster)
23. JM Chopyk, ZF DiSpirito, AMC Ferelli, **RM Moore**, D Renter, N Cernicchiaro, R Moxley, KE Wommack. (March 2015). *The Influence of viral and bacterial community diversity on pathogenic E. coli prevalence in pre-harvest cattle.* Polony Workshop, Haifa, Israel. (Poster)
 24. JM Chopyk, ZF DiSpirito, **RM Moore**, D Renter, N Cernicchiaro, R Moxley, KE Wommack. (May 2014). *The correlation between microbial community diversity and STEC serotypes in beef processing samples.* 2014 Annual STEC-CAP Conference, Lincoln, NE. (Poster)
 25. ZF DiSpirito, JM Chopyk, AMC Ferelli, **RM Moore**, D Renter, N Cernicchiaro, R Moxley, KE Wommack. (Aug 2014). *Viral community diversity correlation with STEC presence in cattle fecal samples.* Undergraduate Research and Service Celebratory Symposium, University of Delaware, Newark, DE. (Poster)
 26. SA Smith, **RM Moore**, KE Wommack, S Polson. (Aug 2014). *Assembly-based metrics of abundance in shotgun metagenomes may provide inaccurate estimations of community structure.* Undergraduate Research and Service Celebratory Symposium, University of Delaware, Newark, DE. (Poster)
 27. **RM Moore**. (Feb 2010). *Two Approaches to Finding Maxima & Minima of Multivariate Functions.* The 24th Annual Student Mathematics Conference, Moravian College, Bethlehem, PA. (Presentation)
 28. **RM Moore**. (2009). *A New Spiritual Sublime: The Spiritual Revolution in the Works of Kasimir Malevich.* Southeastern Pennsylvania Consortium for Higher Education Honors Conference, Arcadia University, Glenside, PA. (Presentation).

Professional meetings attended

1. 2017 Annual STEC-CAP Conference. (Jun 2017). Lincoln, NE.
2. 2016 Annual STEC-CAP Conference. (Jun 2016). Lincoln, NE.
3. 2015 Annual STEC-CAP Conference. (Jun 2015). Manhattan, KS.
4. 115th General Meeting of the American Society for Microbiology. (May 2015). New Orleans, LA.
5. Environmental Virology Workshop. (Jan 2013). Biosphere 2, Tucson, AZ.

Relevant Skills

Programming languages, frameworks, and statistical packages

- Ruby, Ruby on Rails, C, R, Bash, Python, JavaScript

Professional Service & Outreach

Publicly available tools & software

- AAI. Multi-genome amino acid similarity pipeline.
<https://github.com/mooreryan/aai>.
- BigSimon. An ensemble strategy for predicting virus-host interactions.
https://github.com/mooreryan/big_simon.
- IdentiBin. Dereplicating genomic bins from metagenomes.
<https://github.com/mooreryan/IdentiBin>.

- InteinFinder. Automated intein detection from large protein datasets. <https://github.com/mooreryan/InteinFinder>
- Iroki. Automatic customization for phylogenetic trees. <https://www.iroki.net>.
- LSAForGenomes. Partitioning genomes and metagenomes with latent semantic analysis. https://github.com/mooreryan/lisa_for_genomes.
- markdown-dnd-images. Drag and drop images directly into a markdown-mode Emacs buffer. <https://github.com/mooreryan/markdown-dnd-images>.
- ParseFasta. Ruby library providing programmatic access to FASTA and FASTQ files. https://github.com/mooreryan/parse_fasta.
- PASV (Protein Active Site Validation). Protein partitioning and filtering using multiple sequence alignments and conserved residues. <https://github.com/mooreryan/pasv>.
- RubyLikeC. C library of functions that behave like their Ruby counterparts. https://github.com/mooreryan/ruby_like_c.
- ZetaHunter. Automatic, stable OTU calling using user curated databases. <https://github.com/mooreryan/ZetaHunter>.

Open source contributions (pull requests, issues opened, etc.)

- awesome-c. (2018). <https://github.com/aleksandar-todorovic/awesome-c>
- swarm. (2018). <https://github.com/torognes/swarm>
- WIsH. (2018). <https://github.com/soedinglab/WIsH>
- VirHostMatcher. (2018). <https://github.com/jessieren/VirHostMatcher>
- jsPhyloSVG. (2016). <https://github.com/guyleonard/jsPhyloSVG>
- ListCompare. (2016). https://github.com/seanmcallister/list_compare
- Metagenomics Workshop. (2016). <https://github.com/EnvGen/metagenomics-workshop>
- BEAR. (2015). <https://github.com/sej917/BEAR>
- SeqComplex. (2015). <https://github.com/caballero/SeqComplex>
- Philly Open Health. (2015). <https://github.com/PhillyHealthDataRepo/philly-open-health>

Undergraduate research mentorship

- Amelia Harrison. (2016).
- Courtney Shatley. (2015).
- Steve Smith. (2013 – 2014).

Peer-review of manuscripts

- Microbiome

Outreach

- Outreach with Havre de Grace High School Biomed class. (2016 – 2017). Havre de Grace, MD.
- Outreach with Cub Scouts of Delaware. (2015 – 2017). Granogue, DE.
- Outreach at the Delaware Biotechnology Institute. (2014 – 2015). Newark, DE.
- Marvelous Microbes 4-H camp. (2015). Newark, DE.

- Lab Assistant. (2011). St. Genevieve School, Flourtown, PA.
- Math tutor. (2006 – 2007, 2011). Chestnut Hill College, Philadelphia, PA.