

Ellen Mary Hunter
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I. Education

- 9/2016 – present Princeton University, Princeton, New Jersey
Degree: PhD in Molecular Biology
- 9/2011 - 5/2015 The University of Michigan. Ann Arbor, Michigan
Degree: BS with High Honors
Concentrations: Microbiology, Spanish
GPA: 3.642
- 9/2007 - 5/2011 Mattawan High School. Mattawan, Michigan

II. Honors and Awards

- 4/2015 Awarded High Honors for Senior Honors Thesis
4/2015 University Honors
12/2014 University Honors
5/2014 University Honors
5/2013 University Honors
4/2012 University Honors
12/2011 University Honors
5/2011 Awarded the National Merit Scholarship

III. Research Experience

2/2014 – 6/2016 **Laboratory of Gary Huffnagle, PhD.. University of Michigan Health System Department of Internal Medicine, Pulmonary and Critical Care Medicine. Ann Arbor, Michigan**

- Characterized virulence capabilities of *Pseudomonas aeruginosa* clinical isolates using both laboratory-produced data and bioinformatics.
- Developed clade-specific PCR protocol for *Pseudomonas* species and strains.
- Performed bacteriological growth and biofilm-formation assays.
- Learned basics of bacterial, yeast, and mammalian cell-culture.
- Worked with animal models of yeast infection, immunity, lung microbiome, and infectious disease.
- Wrote reports, prepared graphs and diagrams, and presented regularly at lab meetings.

- Currently part of a team modeling the lung microbiome in acute lung injury.

5/2013-8/2013 **Zoetis (formerly Pfizer Animal Health). Kalamazoo, Michigan**

- Worked in laboratory research as well as clinical processing.
- Compared bovine metritis vaccines to determine serological cross-reactivity to regionally-specific bacterial strains.
- Presented results at a colleague poster forum.

8/2011-5/2013 **Laboratory of Peter Arvan, MD, PhD.. University of Michigan Medical School Division of Metabolism, Endocrinology, and Diabetes. Ann Arbor, Michigan.**

- Used transgenic mouse model to investigate why two strains of mice with congenital hypothyroidism display differential goiter formation.
- Used various histological methods, dissection, qRT-PCR, and immunological assays to determine that increased apoptosis was the cause of differential goiter formation between two congenitally hypothyroid strains of mice.
- Presented research at a public poster symposium

IV. Teaching Experience

5/2015 **Mentored high school student in Gary Huffnagle's laboratory. University of Michigan. Ann Arbor, Michigan.**

- Taught lab techniques including bacterial cell culture, isolation plating on selective media types, plating for CFU, and RNA isolation to a high school student.
- Provided guidance on the student's final presentation for the project, which was a bacterial community characterization of healthy and diseased lungs.

9/2013-12/2014 **Study Group Facilitator at the Science Learning Center. University of Michigan. Ann Arbor, Michigan.**

- Instructed weekly meetings for Biology 305 (Genetics) over the course of five semesters.
- Prepared study materials for students and held exam review sessions.

V. Extracurricular Experience

- 9/2012-5/2015 **American Medical Student Association, Pre-Medical Chapter. University of Michigan. Ann Arbor, Michigan.**
- Elected by members as Vice President External (2014-2015) and Public Health Committee Chair (2013-2014).
 - Organized and executed several successful events each semester relating to public health issues and medical topics of interest.
 - Participated in many volunteer activities throughout Ann Arbor and Detroit.
 - Mentored incoming freshmen and sophomores through a program for AMSA members.
- 2012-2013 **Migrant Ministries. St. Thomas Moore Catholic Student Parish. Kalamazoo, Michigan.**
- Traveled to local migrant worker camps to volunteer with families.
 - Distributed donated goods to families.
- 9/2011-5/2012 **Synchronized Swimming. University of Michigan. Ann Arbor, Michigan.**
- Competed at the varsity level and placed 12th nationally.
 - Traveled frequently to other universities for competitions.
 - Participated in multiple events as a first-year.

VI. Posters and Publications

- 2015 **Senior Honors Thesis entitled *Analysis of the genome and predicted functional heterogeneity of Pseudomonas aeruginosa***
- Awarded High Honors by University of Michigan Honors Thesis Evaluation Committee.
 - Currently adapting this thesis into a first author manuscript entitled *Identification and genomic analysis of a novel Pseudomonas species* (projected submission: Fall 2015)
- 7/2013 Ellen Hunter, Fred Weber, PhD. *Escherichia coli* and *Trueperella pyogenes* Cross-Reaction in US and Australia/New Zealand Metritis Vaccines. Poster presented at summer research forum for Zoetis colleagues. July 2013. Kalamazoo, Michigan.
- 5/2013 Ellen Hunter, Aaron Kellogg, PhD, Karen Clark, Peter Arvan, MD, PhD. Inhibition of Goiterogenesis in cog/cog mice in the presence of an rdw-Tg3xMyc transgene. Poster presented at

public research form for the Undergraduate Research Opportunity Program at the University of Michigan. May 2013. Ann Arbor, Michigan.

VII. Skills

Lab Skills

- Aseptic technique
- cDNA prep from RNA
- Cell culture (bacterial, yeast, mammalian)
- Comparative genomics/bioinformatics
 - Average nucleotide identity calculations
 - Phylogenetic tree assembly and generation
 - Genome assembly using DNASTAR
- Confocal laser scanning microscopy
- DNA isolation and purification
- ELISA
- Flow cytometry
- Gram staining
- Growth curve generation
- Isolation plating, CFU plating
- Mouse work (tagging, tailing, gavaging, IP injections, intranasal dosing, broncho-alveolar lavaging, tail-veining, post-mortem necropsy and tissue collection)
- PCR, RFLP, gel extraction
- RNA isolation and purification
- Scanning electron microscopy/transmission electron microscopy
- SDS-PAGE
- Western Blotting

Computer Skills

Highly skilled in

- Microsoft Word, Excel, Powerpoint
- NCBI BLAST

Competent in

- Adobe Illustrator
- RAST
- MAFFT (Multiple Alignment using Fast Fourier Transform)

Familiar with

- DNASTAR

VIII. Languages

Foreign languages

- Spanish (conversationally fluent)