

Tatum Mortimer

Curriculum Vitae

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September 1, 2022

Education

- 2012–2017 **Ph.D., Microbiology**, *University of Wisconsin-Madison*, Madison, Wisconsin.
Microbiology Doctoral Training Program, Graduated May 2017
- 2008–2012 **B.S., Microbiology and Genetics**, *University of Georgia*, Athens, Georgia.
Summa Cum Laude, Highest Honors, Graduated May 2012

Research Experience

- 2017–present **Postdoctoral Research Fellow**, *Grad Lab*, Department of Immunology and Infectious Diseases, Harvard T.H. Chan School of Public Health, Boston, Massachusetts.
Acquisition, maintenance, and transmission of antibiotic resistance in *Neisseria gonorrhoeae*
- 2012–2017 **Graduate Research Assistant**, *Pepperell Lab*, Department of Medical Microbiology and Immunology, University of Wisconsin-Madison, Madison, Wisconsin.
Thesis: Roles of Recombination and Selection in Shaping Pathogenic Bacterial Genomes
- 2009–2012 **Undergraduate Research Assistant**, *Sanchez Lab*, Department of Infectious Diseases, University of Georgia, Athens, Georgia.
Thesis: Epidemiology of Equine *Staphylococcus aureus* in Georgia and Kentucky from 1995–2003

Grants & Fellowships

- 2019–2022 **National Institute of Allergy and Infectious Diseases NRSA Individual Post-doctoral Fellowship**, F32AI145157, Acquisition, maintenance, and transmission of antibiotic resistance in *Neisseria gonorrhoeae*.
Amount Awarded: \$199,514
- 2014–2017 **National Science Foundation Graduate Research Fellowship**.
Amount Awarded: \$102,000
- 2012–2013 **National Institutes of Health Molecular Biosciences Training Grant (T32)**.
Amount Awarded: \$22,032
- 2008–2012 **University of Georgia Foundation Fellowship**.
Amount Awarded: \$45,250, one summer study abroad program, and four spring travel-study programs

Publications

Peer Reviewed Original Research Articles

1. Smith TM, Youngblom MA, Kernien JF, Mohamed MA, Bohr LL, **Mortimer TD**, O'Neill MB, Pepperell CS. 2022. Rapid adaptation of a complex trait during experimental evolution of *Mycobacterium tuberculosis*. *eLife* 11:e78454.
2. Hadjineophytou C, Anonsen JH, Svingerud T, **Mortimer TD**, Grad YH, Scott NE, Koomey M. 2022. Sculpting the Bacterial O-Glycoproteome: Functional Analyses of Orthologous Oligosaccharyltransferases with Diverse Targeting Specificities. *mBio* 13:e03797-21.
3. **Mortimer TD***, Zhang JJ*, Ma KC, Grad YH. 2022. Loci for prediction of penicillin and tetracycline susceptibility in *Neisseria gonorrhoeae*: a genome wide association study. *The Lancet Microbiology* 3, e376-e381.
*contributed equally
4. Sánchez-Busó L, Yeats CA, Taylor B, Goater R, Underwood A, Abudahab K, Argimón S, Ma KC, **Mortimer TD**, Golparian D, Cole MJ, Grad YH, Martin I, Raphael BH, Shafer WM, Spiteri G, Town K, Wi T, Harris SR, Unemo M, Aanensen DM. 2021. A community-driven resource for genomic surveillance of *Neisseria gonorrhoeae* at Pathogenwatch. *Genome Medicine* 13, 61.
5. Yahara K, Ma KC, **Mortimer TD**, Shimuta K, Nakayama S, Hirabayashi A, Suzuki M, Jinnai M, Ohya H, Kuroki T, Watanabe Y, Yasuda M, Deguchi T, Eldholm V, Harrison OB, Maiden MCJ, Grad YH, Ohnishi M. 2021. Emergence and evolution of antimicrobial resistance genes and mutations in *Neisseria gonorrhoeae*. *Genome Medicine* 13, 51.
6. Murphy TC, **Mortimer TD**, Nicholas RA, Wadsworth CB. Draft Genome Sequences of Three Penicillin-Resistant *Neisseria gonorrhoeae* Strains Isolated in Cincinnati, Ohio, in 1994. 2021. *Microbiology Resource Announcements* 10.
7. Ogbebor O*, **Mortimer TD***, Fryling K, Zhang JJ, Bhanot N, Grad YH. 2021. Disseminated gonococcal infection complicated by prosthetic joint infection: case report and genomic and phylogenetic analysis. *Open Forum Infectious Diseases* 8.
*contributed equally
8. **Mortimer TD**, Pathela P, Crawley A, Rakeman JL, Lin Y, Harris SR, Blank S, Schillinger JA, Grad YH. 2021. The distribution and spread of susceptible and resistant *Neisseria gonorrhoeae* across demographic groups in a major metropolitan center. *Clinical Infectious Diseases* 73, e3146-e3155.
9. Vegvari C, Grad YH, White PJ, Didelot X, Whittles LK, Scangarella-Oman NE, Mitrani-Gold FS, Dumont E, Perry CR, Gilchrist K, Hossain M, **Mortimer TD**, Anderson RM, Gardiner D. 2020. Using rapid point-of-care tests to inform antibiotic choice to mitigate drug resistance in gonorrhoea. *Eurosurveillance* 25, 1900210.

22. O'Neill MB, **Mortimer TD**, Pepperell CS. 2015. Diversity of *Mycobacterium tuberculosis* across Evolutionary Scales. *PLoS Pathog* 11:e1005257.
23. **Mortimer TD**, Pepperell CS. 2014. Genomic Signatures of Distributive Conjugal Transfer among Mycobacteria. *Genome Biol Evol* 6:2489–2500.
24. Moncla LH, Ross TM, Dinis JM, Weinfurter JT, **Mortimer TD**, Shultz-Darken N, Brunner K, Capuano S, Boettcher C, Post J, Johnson M, Bloom C, Weiler A, Friedrich T. 2013. A novel nonhuman primate model for influenza transmission. *PLoS ONE* 8:e78750.

Other Peer Reviewed Publications

25. **Mortimer TD**. 2022. Interactions between Loci Contributing to Antimicrobial Resistance and Virulence in *Neisseria gonorrhoeae*. *mBio* 0, e00412-22
26. **Mortimer TD**, Grad YH. 2018. Applications of genomics to slow the spread of multidrug-resistant *Neisseria gonorrhoeae*. *Annals of the New York Academy of Sciences*.

Preprints, Submitted, and In-review Manuscripts

27. Bristow CC*, **Mortimer TD***, Morris S, Grad Y, Soge O, Wakatake E, Pascual R, Murphy S, Fryling K, Adamson PC, Dillon J, Gohil N, Le HHL, Le HV, Ovalles Urena RM, Mitchev N, Mlisana K, Wi T, Dickson S, Klausner J. 2022. Whole Genome Sequencing to Predict Antimicrobial Susceptibility Profiles in *Neisseria gonorrhoeae*. Under Review.
*contributed equally
28. Rubin DHF, **Mortimer TD**, Grad YH. 2022. *Neisseria gonorrhoeae* diagnostic escape from a gyrA-based test for ciprofloxacin susceptibility can lead to increased zoliflodacin resistance. *bioRxiv*. <https://doi.org/10.1101/2022.08.10.503517>.
29. Martin SL, **Mortimer TD**, Grad YH. 2022. Machine Learning Models for *Neisseria gonorrhoeae* Antimicrobial Susceptibility Tests. Preprint. <https://dash.harvard.edu/handle/1/37373038>

Awards & Honors

- 2016 UW-Madison Graduate School Student Research Travel Grants Conference Presentation Award
- 2013 SIS MID Tuition and Travel Scholarship
- 2012 Phi Beta Kappa Honors Society
- 2012 Franklin College of Arts and Sciences Outstanding Student
- 2011 CURO Scholar Distinction
- 2008 Robert C. Byrd Honors Scholarship

Conference Presentations

Invited Talks

- 2020 **Mathematics and Statistics of Genomic Epidemiology**, Virtual.
"Adaptation to the cervical environment is associated with increased antibiotic susceptibility in *Neisseria gonorrhoeae*."

Oral Presentations

- 2022 **Antimicrobial Resistance - Genomes, Big Data and Emerging Technologies**, Virtual.
"Genome wide association studies define minimal set of loci for prediction of penicillin and tetracycline susceptibility in *Neisseria gonorrhoeae*."
- 2022 **The 2nd *Neisseria gonorrhoeae* Research Society Conference**, Virtual.
"Genome wide association studies define minimal set of loci for prediction of penicillin and tetracycline susceptibility in *Neisseria gonorrhoeae*."
- 2020 **STD Prevention Conference**, Virtual.
"The distribution and spread of susceptible and resistant *Neisseria gonorrhoeae* across demographic groups in a major metropolitan center."
- 2020 **The Infectious Diseases Society for Obstetrics and Gynecology Annual Meeting**, Virtual.
"Loss of function of nitric oxide reductase associated with *Neisseria gonorrhoeae* infection in women"
- 2016 **Lake Arrowhead Microbial Genomics**, Lake Arrowhead, California.
"An ancient emerging infection as a cause of maternal sepsis in Late Byzantine Troy"
- 2016 **ASM Microbe**, Boston, Massachusetts.
"Adaptation of the Type VII Secretion System"

Posters

- 2019 **Applied Bioinformatics and Public Health Microbiology**, Wellcome Genome Campus, UK.
"Genomic epidemiology of *Neisseria gonorrhoeae* in New York City"
- 2016 **Lake Arrowhead Microbial Genomics**, Lake Arrowhead, California.
"An ancient emerging infection as a cause of maternal sepsis in Late Byzantine Troy"
- 2014 **Evolution**, Raleigh, North Carolina.
"Detecting Distributive Conjugal Transfer in Mycobacteria from Whole Genome Sequences"
- 2011 **4th Congress of European Microbiologists**, Geneva, Switzerland.
"Epidemiology of Equine *Staphylococcus aureus* in Kentucky and Georgia from 1995-2003"

Teaching Experience

- 2015 Teaching Practicum- Microbial Genetics and Molecular Machines (MICRO 470), University of Wisconsin-Madison

■ Mentoring

Rotating Graduate Students

- 2020 Jillian Silbert- Systems, Synthetic, and Quantitative Biology PhD Program
- 2020 Sam Zinga- Harvard Medical School MD/PhD Program
- 2020 Maia Mesyngier- Harvard Medical School MD/PhD Program
- 2020 Ellie Rand- Systems, Synthetic, and Quantitative Biology PhD Program

Undergraduates

- 2020–2021 Jessica Zhang- Undergraduate Thesis
- 2020 Michelle Alvarado- NSURP Summer Internship
- 2019 Marissa Duckett- BPH Summer Internship
- 2016 Sam Larson- Bio 152 Independent Research Project, Directed Study
- 2014–2016 Alex Weber- Bio 152 Independent Research Project, Directed Study
- 2015–2016 Hailey Bussan- Directed Study, Microbiology Capstone
- 2014 Marisol Wolf- NSF REU, McNair Scholar

High School Students

- 2017 Tia Parisi- Summer Internship

■ Service & Memberships

Society Membership

- 2022–Present Society for Molecular Biology & Evolution
- 2020–Present *Neisseria gonorrhoeae* Research Society
- 2016–Present American Society for Microbiology

Manuscript Review

- 2022 *BMJ Open*
- 2021–2022 *Microbiology Spectrum*
- 2021 *mBio*
- 2019–2022 *Nature Communications*
- 2019–2021 *G3: Genes/Genomes/Genetics*
- 2019–2021 *Microbial Genomics*
- 2020–2022 *International Journal of STD & AIDS*
- 2020 *Sexually Transmitted Diseases*

2014–2015 *Genome Biology and Evolution*

Professional Service

2019–2022 Broad Institute IDMP Seminar Series Planning Committee

2016 Peer Reviewer- UW-Madison Research Travel Award

2015 Group Leader- UW-Madison ComBEE Python Study Group

Community Outreach

2019–2022 Letters to a Pre-Scientist

2020 Virtual Presentation and Q&A at Cass Middle School - Cartersville, Georgia

2019 Presentation for Boston Leadership Institute - Boston, Massachusetts

2016 Women in STEM Symposium - Madison, Wisconsin

2013–2016 Expanding Your Horizons - Madison, Wisconsin

2015 Snacks with Scientists - Madison, Wisconsin