

Tatum Mortimer

Curriculum Vitae

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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

Professional Appointments

- 2023–present **Assistant Professor**, *Department of Population Health*, College of Veterinary Medicine, University of Georgia, Athens, Georgia.
Courtesy/Adjunct Appointments: Department of Microbiology, Institute of Bioinformatics
- 2017–2023 **Postdoctoral Research Fellow**, *Department of Immunology and Infectious Diseases*, Harvard T.H. Chan School of Public Health, Boston, Massachusetts.

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 **UW-Madison Molecular Biosciences Training Grant (NIH T32) Trainee**.
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. **Mortimer TD**, Grad YH. 2023. A genomic perspective on the near-term impact of doxycycline post-exposure prophylaxis on *Neisseria gonorrhoeae* antimicrobial resistance. *Clinical Infectious Diseases* <https://doi.org/10.1093/cid/ciad279>.

2. Rubin DH, **Mortimer TD**, Grad YH. 2023. *Neisseria gonorrhoeae* diagnostic escape from a *gyrA*-based test for ciprofloxacin susceptibility and the effect on zoliflodacin resistance: a bacterial genetics and experimental evolution study. *Lancet Microbe* [https://doi.org/10.1016/S2666-5247\(22\)00356-1](https://doi.org/10.1016/S2666-5247(22)00356-1).
3. Bristow CC, **Mortimer TD***, Morris S, Grad Y, Soge OO, Wakatake E, Pascual R, Murphy SM, Fryling KE, Adamson PC, Dillon J-A, Palmer NR, Le HHL, Van Le H, Ovalles Ureña RM, Mitchev N, Mlisana K, Wi T, Dickson SP, Klausner JD. 2023. Whole Genome Sequencing to Predict Antimicrobial Susceptibility Profiles in *Neisseria gonorrhoeae*. *The Journal of Infectious Diseases* jiad027.
*contributed equally
4. 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.
5. 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.
6. **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 Microbe* 3, e376-e381.
*contributed equally
7. 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.
8. 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.
9. 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.
10. 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

11. **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.
12. 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.
13. Ma KC, **Mortimer TD**, Duckett MA, Hicks AL, Wheeler NE, Sanchez-Buso L, Grad YH. 2020. Increased power from conditional bacterial genome-wide association identifies macrolide resistance mutations in *Neisseria gonorrhoeae*. *Nature Communications* 11, 5374.
14. Ma KC*, **Mortimer TD***, Grad YH. 2020. Efflux Pump Antibiotic Binding Site Mutations Are Associated with Azithromycin Nonsusceptibility in Clinical *Neisseria gonorrhoeae* Isolates. *mBio* 11.
*contributed equally
15. Ma KC*, **Mortimer TD***, Hicks AL, Wheeler NE, Sánchez-Busó L, Golparian D, Taiaroa G, Rubin DHF, Wang Y, Williamson DA, Unemo M, Harris SR, Grad YH. 2020. Adaptation to the cervical environment is associated with increased antibiotic susceptibility in *Neisseria gonorrhoeae*. *Nature Communications* 11, 4126.
*contributed equally
16. Hicks AL, Kissler SM, **Mortimer TD**, Ma KC, Taiaroa G, Ashcroft M, Williamson DA, Lipsitch M, Grad YH. 2020. Targeted surveillance strategies for efficient detection of novel antibiotic resistance variants. *eLife* 9, e56367.
17. Bohr LL, **Mortimer TD**, Pepperell CS. 2020. Lateral gene transfer shapes diversity of *Gardnerella* spp. *Frontiers in Cellular and Infection Microbiology*.
18. Palace SG, Wang Y, Rubin DHF, Welsh MA, **Mortimer TD**, Cole K, Eyre DW, Walker S, Grad YH. RNA polymerase mutations cause cephalosporin resistance in clinical *Neisseria gonorrhoeae* isolates. 2020. *eLife* 9, e51407.
19. Doroshenko A, Pepperell CS, Heffernan C, Egedahl ML, **Mortimer TD**, Smith TM, Bussan HE, Tyrrell GJ, Long R. 2018. Epidemiological and genomic determinants of tuberculosis outbreaks in First Nations communities in Canada. *BMC Medicine* 16(1):128.
20. **Mortimer TD**, Weber AM, Pepperell CS. 2018. Signatures of Selection at Drug Resistance Loci in *Mycobacterium tuberculosis*. *mSystems* 3:e00108-17.
21. **Mortimer TD**, Annis DS, O'Neill MB, Bohr LL, Smith TM, Poinar HN, Mosher DF, Pepperell CS. 2017. Adaptation in a Fibronectin Binding Autolysin of *Staphylococcus saprophyticus*. *mSphere* 2:e00511-17.
22. **Mortimer TD**, Weber AM, Pepperell CS. 2017. Evolutionary Thrift: Mycobacteria Repurpose Plasmid Diversity during Adaptation of Type VII Secretion Systems. *Genome Biol Evol* 9:398-413.

23. Devault AM*, **Mortimer TD***, Kitchen A, Kiesewetter H, Enk JM, Golding GB, Southon J, Kuch M, Duggan AT, Aylward W, Gardner SN, Allen JE, King AM, Wright G, Kuroda M, Kato K, Briggs DEG, Fornaciari G, Holmes EC, Poinar HN, Pepperell CS. 2017. A molecular portrait of maternal sepsis from Byzantine Troy. *eLife* 6:e20983.
*contributed equally
24. Dang UJ, Devault AM, **Mortimer TD**, Pepperell CS, Poinar HN, Golding GB. 2016. Estimation of Gene Insertion/Deletion Rates with Missing Data. *Genetics* 204, 513–529.
25. O'Neill MB, **Mortimer TD**, Pepperell CS. 2015. Diversity of *Mycobacterium tuberculosis* across Evolutionary Scales. *PLoS Pathog* 11:e1005257.
26. **Mortimer TD**, Pepperell CS. 2014. Genomic Signatures of Distributive Conjugal Transfer among Mycobacteria. *Genome Biol Evol* 6:2489–2500.
27. 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

28. **Mortimer TD**. 2024. mSphere of Influence: Predicting the evolution of pathogen populations. *mSphere* 0:e00432-24.
29. Martin SL, **Mortimer TD**, Grad YH. 2022. Machine Learning Models for *Neisseria gonorrhoeae* Antimicrobial Susceptibility Tests. *Annals of the New York Academy of Sciences*.
30. **Mortimer TD**. 2022. Interactions between Loci Contributing to Antimicrobial Resistance and Virulence in *Neisseria gonorrhoeae*. *mBio* 0, e00412-22
31. **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*.

Awards & Honors

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

Presentations

Invited Talks

- 2024 **STD Laboratory Reference and Research Branch Seminar**, *Seminar*, Centers for Disease Control and Prevention, Atlanta, Georgia.
"Genomic analysis of antimicrobial resistance, diagnostics, and interventions for *Neisseria gonorrhoeae*"
- 2024 **Microbiology and Molecular Genetics Program Seminar Series**, *Seminar*, Emory University, Atlanta, Georgia.
"Genomic analysis of antimicrobial resistance, diagnostics, and interventions for *Neisseria gonorrhoeae*"
- 2023 **Indo-US International Conference and Workshop on Antimicrobial Resistance and Human Microbiome**, *Oral Presentation*, Faridabad, India.
"Genomic analysis of antimicrobial resistance, diagnostics, and interventions for *Neisseria gonorrhoeae*."
- 2023 **International Pathogenic Neisseria Conference**, *Workshop*, Boston, Massachusetts.
"Platforms for *Neisseria* genomics and *N. gonorrhoeae* nomenclature."
- 2020 **Mathematics and Statistics of Genomic Epidemiology**, *Oral Presentation*, Virtual.
"Adaptation to the cervical environment is associated with increased antibiotic susceptibility in *Neisseria gonorrhoeae*."

Oral Presentations

- 2023 **STI & HIV 2023**, Chicago, Illinois.
"A genomic perspective on the near-term impact of doxycycline post-exposure prophylaxis on *Neisseria gonorrhoeae* antimicrobial resistance."
- 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

- 2022 **International Pathogenic Neisseria Conference**, Virtual.
 "*Neisseria gonorrhoeae* adaptation through loss-of-function"
- 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"

Campus Seminars & Symposia

- 2024 **Institute of Bioinformatics Seminar Series**, *Seminar*, University of Georgia, Athens, Georgia.
 "Genomic analysis of antimicrobial resistance, diagnostics, and interventions for *Neisseria gonorrhoeae*"
- 2024 **Avian Seminar Series**, *Seminar*, University of Georgia, Athens, Georgia.
 "Genomic analysis of antimicrobial resistance, diagnostics, and interventions for pathogenic bacteria"
- 2024 **Department of Microbiology Seminar Series**, *Seminar*, University of Georgia, Athens, Georgia.
 "*Neisseria gonorrhoeae* adaptation to antimicrobials and the host environment"
- 2022 **LSARP Retreat**, *Poster*, University of Calgary, Kananaskis, Alberta.
 "Genetic loci contributing to antibiotic resistance in *Staphylococcus aureus*"
- 2021 **Department of Immunology and Infectious Diseases Research Updates**, *Seminar*, Harvard T.H. Chan School of Public Health, Boston, Massachusetts.
 "*Neisseria gonorrhoeae* adaptation through loss of function"
- 2017 **Perlman Symposium**, *Poster*, Madison, Wisconsin.
 "Signatures of positive selection at *Mycobacterium tuberculosis* drug resistance loci"
- 2016 **Evolution Seminar Series**, *Seminar*, University of Wisconsin-Madison, Madison, Wisconsin.
 "Adaptation of the Type VII Secretion Systems"

- 2016 **MDTP Student Seminar Series**, *Seminar*, University of Wisconsin-Madison, Madison, Wisconsin.
"Mysteries of the Type VII Secretion System in Mycobacteria"
- 2015 **MBTG Seminar Series**, *Chalk Talk*, University of Wisconsin-Madison, Madison, Wisconsin.
"Effects of lateral gene transfer on mycobacteria genomes"
- 2014 **MDTP Student Seminar Series**, *Seminar*, University of Wisconsin-Madison, Madison, Wisconsin.
"The Ancient Vagina Monologues"
- 2013 **MBTG Seminar Series**, *Seminar*, University of Wisconsin-Madison, Madison, Wisconsin.
"Distributive Conjugal Transfer in *Mycobacterium smegmatis*"
- 2011 **CURO Symposium**, *Oral Presentation*, University of Georgia, Athens, Georgia.
"Epidemiology of Equine Staphylococcus aureus in Kentucky and Georgia from 1995-2003"
- 2010 **CURO Symposium**, *Poster*, University of Georgia, Athens, Georgia.
"Epidemiology of Equine Staphylococcus aureus in Kentucky and Georgia from 1995-2003"

Student Presentations

- 2024 **Population Health Graduate Student Workshop and Symposium**, *Poster*, Shanita Smrity, Athens, Georgia.
"Identification of *penA* resistance alleles in clinical isolates of *Neisseria gonorrhoeae* and prediction of reduced susceptibility to ceftriaxone"
- 2024 **National Veterinary Scholars Symposium**, *Poster*, Lindsey Guerra, St. Paul, Minnesota.
"Prediction of *Klebsiella pneumoniae* antimicrobial susceptibility from genomic data"
- 2024 **GVSP Research Day**, *Oral Presentation*, Lindsey Guerra, Athens, Georgia.
"Prediction of *Klebsiella pneumoniae* antimicrobial susceptibility from genomic data"

Teaching

Guest Lectures

- 2024 MIBO 3500: Introductory Microbiology, 1 lecture, Instructor: Dr. J. Walker
- 2023 POPH 8040: Molecular Pathogenesis, 1 lecture, Instructors: Dr. C. Logue, Dr. G. Maboni

Teaching Assistant

2015 MICRO 470: Microbial Genetics and Molecular Machines, Teaching Practicum at University of Wisconsin-Madison, Instructor: Dr. M. Filutowicz

Mentoring

Major Professor

2024–Present Shanita Zaman Smrity- MS in Bioinformatics

Graduate and Professional Students

2024–Present Farah Saeed- PhD in Computer Science

2024 Lindsey Guerra- Georgia Veterinary Scholars Program

Rotating Graduate Students

2024 Gretchen Brinkman- Integrated Life Sciences

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

2024–Present Olivia Calder- Student Lab Assistant

2023–Present Selina Sun- Department of Cell Biology Faculty-Mentored Undergraduate Research

2023–Present Shriya Garg- Department of Genetics Faculty-Mentored Undergraduate Research

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

Graduate Student Advisory Committees

Doctoral advisory committee member

2024–Present Yi Chen Luo, Department of Infectious Diseases, PI: Dr. G. Maboni

2024–Present Claire Reichardt, Department of Microbiology, PI: Dr. B. Billmyre

Service & Memberships

Society Membership

2022–Present Society for Molecular Biology & Evolution

2020–Present *Neisseria gonorrhoeae* Research Society

2016–Present American Society for Microbiology

Ad hoc Manuscript Review

2024 *The Journal of Infectious Diseases*

2024 *Antimicrobial Agents and Chemotherapy*

2023 *Nature*

2023 *The Lancet Microbe*

2023 *Sexually Transmitted Infections*

2023 *Journal of Antimicrobial Chemotherapy*

2022 *BMJ Open*

2022 *Microbiology*

2021–2024 *Microbiology Spectrum*

2021 *mBio*

2019–2024 *Nature Communications*

2019–2020 *G3: Genes/Genomes/Genetics*

2019–2023 *Microbial Genomics* (2023 Outstanding Reviewer)

2020–2022 *International Journal of STD & AIDS*

2020 *Sexually Transmitted Diseases*

2014–2016 *Genome Biology and Evolution*

Ad hoc Grant Review

2024 UK Research and Innovation

Professional Service

2024 Department of Population Health Strategic Planning Working Group
2024 ESGEM-AMR Working Group
2024 *Neisseria gonorrhoeae* Research Society Conference Abstract Review
2023 University of Georgia Foundation Fellowship Mid-Term Interview Panel
2023 University of Georgia Goldwater Scholarship Selection Panel
2023 Ad hoc reviewer for GARDP Antimicrobial Viewpoints article
2023–2024 Poster Judge for Population Health Graduate Student Workshop and Symposium
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

2019–2024 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