**Kyle Gontjes, MPH** **Contact:** [kgontjes@umich.edu](mailto:kgontjes@umich.edu) (616) 617-7843

PhD Candidate in Microbiology & Immunology X (**Twitter):** [@KyleGontjes](https://twitter.com/KyleGontjes) **LinkedIn:** [Kyle-Gontjes](https://www.linkedin.com/in/kyle-gontjes)

**Website:** <https://kylegontjes.weebly.com/>

**Career Mission Statement**

My career goal is to be an independent researcher developing strategies solutions to combat antibiotic resistance. I integrate bacterial sequencing, epidemiological analyses, and wet lab experimentation to uncover bacterial genotypes and clinical factors that drive the emergence and spread of antibiotic-resistant pathogens.

**Education**

**University of Michigan**,Ann Arbor, Michigan 2020 – Present

**PhD Candidate, Microbiology & Immunology** Expected Summer 2026

Dissertation: Application of whole-genome sequencing to study the emergence and spread of antibiotic resistance

**University of Michigan School of Public Health** 2018 – 2020

**Master of Public Health, Hospital & Molecular Epidemiology**

Certification: Healthcare Infection Prevention & Control

Thesis: Contamination of common area and rehabilitation gym environment with multidrug‐resistant organisms

**Calvin University**, Grand Rapids, Michigan 2014 – 2017

**Bachelor of Science, Biology**

Thesis: Antibiotic Stewardship – A Universal Framework Through the Lenses of Three Model Organisms

**Research Experience**

**University of Michigan Medical School** Mar 2021 – Present

**PhD Candidate**

Advisor: Evan Snitkin, PhD

* Characterized resistance to novel antibiotics and last-line agents in long-term acute care hospitals
* Linked patient characteristics and bacterial genomic traits with the emergence and spread of resistance to several last-resort antibiotics
* Innovated a phylogenetic method to account for genetic background in wet lab experiments and genome-wide association studies
* Revealed antibiotic-specific differences in the contribution of *de novo* resistanceevolution and spread
* Developed ***phyloAMR***, an open-source R package, integrating evolutionary context to track the emergence and spread of bacterial genome-informed traits, such as antibiotic resistance and infection severity

**University of Michigan Medical School** May 2018 – Aug 2020

**Graduate Research Assistant**

Advisor: Lona Mody, MD, MSc

* Investigated epidemiology and transmission of multidrug-resistant bacteria (MDROs) in nursing homes
* Participated in a cluster-randomized trial testing infection prevention interventions in six nursing homes
* Explored non-invasive microbial surveillance methods to reduce selection bias and improve enrollment in epidemiological studies in nursing homes
* Contributed to the Preventing Resistance and Infection by Integrating Systems in Michigan project, an intervention that encourages collaboration between hospitals and their partnering nursing homes
* Designed surveys assessing public health and COVID-19 knowledge gaps in high school students

**Honors, Funding, And Awards**

**National Institutes of Allergy & Infectious Diseases**

F31 Fellowship (F31-AI186288) (Year one, $41,655) Jul 2024 - Aug 2026

Genome-driven identification of patient and bacterial drivers of resistance to novel beta-lactam/beta-lactamase inhibitor combination therapies

**Genome Science Training Program**Mar 2021 – Mar 2023

T32 Trainee, Two Years of PhD Funding ([Website](https://sph.umich.edu/csg/gstp.html))

**SHEA Yoshikawa-High Award** Oct 2020

Top Abstract in Long-Term Care at IDWeek 2020 Conference

**Michigan Institute for Clinical & Health Research** May 2020 – Aug 2020

Trainee, MICHR Summer Immersion Program (5TLTR002242-04) ([Website](https://michr.umich.edu/rdc/2016/3/18/s))

**Distinguished Oral Presentation** Mar 2020

6th International Conference on Healthcare Associated Infections

**Plenary Oral Presentation** Apr 2019

University of Michigan, Department of Internal Medicine 27th Annual Research Symposium

**SHEA Top Poster Award** Apr 2019

Annual Meeting for Society for Healthcare Epidemiology of America (SHEA)

**University of Michigan School of Public Health** May 2019 – Aug 2019

Certificate in Hospital and Molecular Epidemiology Summer Internship ([Website](https://sph.umich.edu/infectioncontrol/internships.html))

**UM-SPH Travel Award** Apr 2019

$500 for SHEA Annual Conference

**UM-SPH Scholarship Award** Sep 2018 – May 2020

50% Tuition-Only Scholarship

**Calvin College Academic Scholarship Award** Sep 2014 – Dec 2017

Faculty Honors Scholarship

**Boy Scouts of America** Sep2008 – May 2014

Eagle Scout

Order of the Arrow (Honor Society)

**Publications**

**Published Peer-Reviewed Manuscripts**

1. **Gontjes K**, Gibson KE, Lansing B, Cassone M, Mody L. Contamination of Common Area and Rehabilitation Gym Environment with Multidrug-Resistant Organisms. *J Am Geriatric Soc.,* December 2019. <https://doi.org/10.1111/jgs.16284>
2. **Gontjes K**,Gibson KE, Lansing B, Mody L, Cassone M. Assessment of Race and Sex as Risk Factors for Colonization with Multidrug-Resistant Organisms in Six Nursing Homes. *ICHE*, June 2020. <https://doi.org/10.1017/ice.2020.215>
3. **Gontjes K**,Gibson KE, Lansing B, Mody L, Cassone M. Can alternative anatomical sites and environmental surveillance replace perianal screening for multidrug-resistant organisms in nursing homes? *ICHE*, March 2021. <https://doi.org/10.1017/ice.2021.134>
4. Mody L, **Gontjes K**, Cassone M, Gibson KE, Lansing B, Mantey J, Kabeto M, Galecki A, Min L. Effectiveness of a Multicomponent Intervention to Reduce Multidrug-Resistant Organisms in Nursing Homes: A Cluster Randomized Clinical Trial. *JAMA Network Open, July 2021.* [*https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8285736/*](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8285736/)
5. Cassone M, Mantey J, **Gontjes K**, Lansing B, Gibson KE, Wang J, Mody L. Seasonal Patterns in Incidence and Antimicrobial Resistance of Common Bacterial Pathogens in Nursing Home Patients and Their Rooms. *Frontiers in Public Health*, July 2021. <https://doi.org/10.1017/ice.2021.350>
6. Wolfensberger A, Mang N, Gibson KE, **Gontjes K**, Cassone M, Brugger SD, Mody L, Sax H. Understanding the Short-Term Dynamics of MRSA Between Patients and Their Immediate Environment. *ICHE,* August 2021.[*https://doi.org/10.1017/ice.2021.350*](https://doi.org/10.1017/ice.2021.350)
7. **Gontjes K,** Gibson KE, Lansing B, Karen J, Cassone M, Wang J, Mills J, Mody L, Patel K. Association of exposure to high-risk antibiotics in acute care hospitals with multidrug-resistant organism burden in nursing homes. *JAMA Network Open*, February 2022. <https://doi.org/10.1001/jamanetworkopen.2021.44959>
8. Zhang HL, **Gontjes K**, Han JH, Alby K, Lapp Z, Snitkin S, Goldstein EJC, Muldoon S, Tolomeo P, Lautenbach E. Resistance phenotypes of carbapenem-resistant Klebsiella pneumoniae in a multi-state network of long-term acute care hospitals. *ICHE.* June 2022. *https://doi.org/10.1017/ice.2022.185*
9. Cassone M, Wang J, Lansing BJ, Mantey J, Gibson KE, **Gontjes KJ,** Mody L. Diversity and persistence of MRSA and VRE in skilled nursing facilities: environmental screening, whole-genome sequencing and development of a dispersion index. *J Hosp Infect,* August 2023. *https://doi.org/10.1016/j.jhin.2023.04.015*
10. Lapp Z, … **Gontjes K,** …, Evan Snitkin, Rachel B Slayton. Distinct Origins and Transmission Pathways of blaKPC Enterobacterales across Three U.S. States. *J Clin Microbiol.* August 2023. [*https://doi.org/10.1128/jcm.00259-23*](https://doi.org/10.1128/jcm.00259-23)
11. Mody M, Hodges A, Gisbon KE, Mantey J, **Gontjes K\*.** Does high school health education class satisfaction influence student perceptions of public health and pandemic response?. *A J Infection Control,* June 2024. *https://doi.org/10.1016/j.ajic.2024.01.008*
12. Unverdorben LV, Pirani A, **Gontjes K**, Moricz B, Holmes CH, Snitkin ES, Bachman MA. Klebsiella pneumoniae evolution in the gut leads to spontaneous capsule loss and decreased virulence potential. *mBio,* March 2025. https://doi.org/10.1128/mbio.02362-24

**Published Peer-reviewed Commentaries**

1. **Gontjes K**, Collier K. From a Culture of Blame to a Culture of Grace: A Letter in Reply to Papadakis. *ICHE,* August 2021. <https://doi.org/10.1017/ice.2021.386>
2. Mody M, **Gontjes K\*.** Health Education After COVID-19: A Time to Revisit, Revamp, and Revitalize? *A J Infection Control*, December 2022.

**Submitted Manuscripts**

1. Thiede SN, SteinbergH, … **Gontjes K**, …, Popovich KJ, Snitkin ES.Genomic epidemiology analysis to detect the role of antibiotic use on the spread of MRSA in an urban jail and surrounding communities. *Revision submitted to Nature Communications in July 2025.*
2. **Gontjes K**, Singh A**\*\***, Sansom SE, Boyko J, Smith SA, Lautenbach E, Snitkin E. Phylogenetic context of antibiotic resistance provides insights into the dynamics of resistance emergence and spread. *Submitted to the Journal of Infectious Disease Submitted in June 2025.*

**Near-submission, In-progress Manuscripts**

1. **Gontjes K**, Pirani A, Han J, Tolomeo P, Goldstein EJC, Lautenbach E, Snitkin E. Genomic and patient features associated with non-susceptibility to meropenem-vaborbactam & imipenem-relebactam before their market introduction. *Submitting to Nature Communications in July 2025.*
2. **Boyko J, Gontjes K, Snitkin E, Smith SA.** Uncertainty in joint Ancestral State Reconstruction: Improving the accuracy and biological interpretability of ancestral state predictions. *Submitting to Proceedings of the National Academy of Sciences in Summer 2025*

**Posters/Oral Presentations**

**Internal Conferences**

1. **Gontjes K,** Gibson KE, Lansing B, Cassone M, Mody L. Multidrug-Resistant Organism Burden of Common Area & Rehabilitation Environment in Skilled Nursing Facilities. Plenary Oral Presentation**.** *University of Michigan Department of Internal Medicine 27th Annual Research Symposium*, May 2019.
2. **Gontjes K**. Contamination of Common Area and Rehabilitation Gym Environment with Multidrug-Resistant Organisms. Oral Presentation. *University of Michigan Division of Geriatric & Palliative Medicine, Clinical Epidemiology Conference*, October 2019.
3. **Gontjes K**. Simplifying Surveillance Screening: Can Environmental Surveillance Replace Perianal Screening? Oral Presentation. *University of Michigan Division of Geriatric & Palliative Medicine, Clinical Epidemiology Conference*, March 2020.
4. **Gontjes K.** *Klebsiella pneumoniae* Non-Susceptibility to β-lactam Inhibitor Combination Therapy Agents Prior to Market Introduction. Oral Presentation. *University of Michigan Department of Microbiology & Immunology 812 Trainee Seminar*, February 2022.
5. **Gontjes K.** Genomic Features Influencing *Klebsiella pneumoniae* Resistance to β-lactam Inhibitor Combination Therapy Agents Prior to Market Introduction. Oral Presentation. *GSTP 2022 Orientation,* August 2022.
6. **Gontjes K.** Genomic Features Influencing *Klebsiella pneumoniae* Resistance to β-lactam Inhibitor Combination Therapy Agents Prior to Market Introduction. Oral Presentation. *University of Michigan Department of Microbiology & Immunology 812 Trainee Seminar*, January 2023.
7. **Gontjes K.**Genomic and patient features associated with non-susceptibility to meropenem-vaborbactam & imipenem-relebactam before their market introduction in clinical carbapenem-resistant *Klebsiella pneumoniae* isolates collected from long-term acute care hospitals. Oral Presentation. *University of Michigan Department of Microbiology & Immunology 812 Trainee Seminar*, November 2023.
8. **Gontjes K**, Singh A, Sansom S, Lautenbach E, Snitkin E. Application of phylogenetic context to patient risk factor analysis illuminates features associated with the emergence and spread of antibacterial resistance. Poster Presentation. *University of Michigan Department of Internal Medicine Research Seminar,* April 2024.
9. **Gontjes K.**Phylogenetics provides insights into the dynamics of β-lactam/β-lactamase inhibitor resistance. Oral Presentation. *University of Michigan Department of Microbiology & Immunology 812 Trainee Seminar*, October 2024.
10. **Gontjes K**. Application of phylogenetic context to patient risk factor analysis illuminates features associated with the emergence and spread of antibacterial resistance. Oral Presentation. *University of Michigan Infectious Disease Scholarship Symposium,* March 2025.
11. **Gontjes K**. The role of genetic background in the emergence and spread of antibiotic resistance in carbapenem-resistant *Klebsiella pneumoniae*. Oral Presentation. *Michigan Infectious Disease Genomics (MIDGE) Center’s Annual Meeting*, May 2025

**Domestic & International Conferences**

1. **Gontjes K**, Gibson KE, Lansing B, Jones K, Cassone M, Wang J, Mody L. Qualitative & Quantitative Assessment of Multidrug-Resistant Organism Transmission Potential of Rehabilitation Equipment in Skilled Nursing Facilities. Poster Presentation. *Annual Meeting for Society for Healthcare Epidemiology of America*, April 2019. **\*Top Poster Award**
2. **Gontjes K,** Gibson KE, Lansing B, Cassone M, Mody L. Simplifying Surveillance Screening: Can Environmental Surveillance Replace Perianal Screening?. **Distinguished Oral Presentation**.   
   *6th International Conference on Healthcare Associated Infections*, March 2020.
3. Gibson KE, Mody L, Sax H, **Gontjes K**, Cassone M, Mang N, Wolfensberger A. Understanding the Short-Term Dynamics of MRSA Between Patients and Their Immediate Environment. Poster Presentation.   
   *6th International Conference on Healthcare Associated Infections*, March 2020.
4. **Gontjes K,** Gibson KE, Lansing B, Karen J, Cassone M, Wang J, Mills J, Mody L, Patel K. How Does Exposure to C. diffogenic Antibiotics Impact Multidrug-Resistant Organism Colonization and Environment Contamination in Nursing Homes? **Distinguished** **Oral Presentation.** *IDWeek 2020*, October 2020
   1. Interviewed by Contagion Live During IDWeek. See news article [here](https://www.contagionlive.com/view/hospital-exposure-to-antibiotics-associated-with-c-diff-pose-higher-risk-of-mdro).
5. **Gontjes K,** Gibson KE, Lansing B, Cassone M, Mody L. Simplifying Surveillance Screening: Can Environmental Surveillance Replace Perianal Screening? **Oral Presentation.***IDWeek 2020*, October 2020
6. **Gontjes K,** Genomic Features Influencing *Klebsiella pneumoniae* Resistance to β-lactam Inhibitor Combination Therapy Agents Prior to Market Introduction. Poster Presentation. *NHGRI Professional Development Conference*, April 2023.
7. **Gontjes K,** Genomic Features Influencing *Klebsiella pneumoniae* Resistance to β-lactam Inhibitor Combination Therapy Agents Prior to Market Introduction. **Oral Presentation**. *ASM Microbe*, June 2023
8. **Gontjes K,** Application of phylogenetic context to risk factor analysis illuminates patient features associated with the emergence and spread of antibacterial resistance. **Oral Presentation**. *Kleb Club Seminar Series*. April 2024.
9. **Gontjes K,** Application of phylogenetic context to risk factor analysis illuminates patient features associated with the emergence and spread of antibacterial resistance. **Oral Presentation**. *Kleb Club Seminar Series*. April 2024.
10. **Gontjes K,** Genomic and Patient Features Associated with Non-Susceptibility to Meropenem-Vaborbactam & Imipenem-Relebactam Before Their Market Introduction. Poster Presentation. *Lake Arrowhead Microbial Genomics Conference*. September 2024.

**Invited Talks**

1. How Should Society Protect the Health of Its Most Vulnerable Members?Pubology: COVID-19 Edition. *University Lutheran Chapel*. January 2021.
2. The Making of A Disease Detective: A Journey in Healthcare & Molecular Epidemiology. Calvin Public Health Seminar Class. *Calvin University*. February 2023
3. Application of whole-genome sequencing to the study of antibiotic resistance. *Calvin University*. September 2024

**Teaching**

**University of Michigan School of Public Health** Winter2023, Winter 2024, Winter 2025

Course Assistant for EPID 582/MICRBIOL 582: Molecular Epidemiology & Pathogen Genomics

*Designed mini-assignments, graded assignments, and assisted during live-coding laboratory*

**Calvin University**, Grand Rapids, Michigan Fall 2017

Laboratory assistant for PUBH 248 - Epidemiology

*Assisted with the deployment of laboratory course material and assignments*

**Mentoring**

**PhD Studies**

**University of Michigan Medical School** Fall 2023 – Present

Mentor to undergraduate researcher, Aryan Singh

**University of Michigan Medical School** Feb 2021 – Present

Public Health Educational Intervention Program

**University of Michigan Medical School** Feb 2021 – May 2023

PIBS Peer Mentor

**MPH Studies**

**University of Michigan School of Public Health**  Sep 2019 – Apr 2020

Epidemiology First-Year Student Mentoring Program

**Undergraduate Studies**

**Science Olympiad – Caledonia High School**, Caledonia, Michigan Sep 2012 – May 2018

Coach of Disease Detective, Microbe Mission, and Forensics Events

Numerous students medaled in their events at regional competitions

**Kids Hope USA**, Grand Rapids, Michigan Aug 2017 – May 2018

Kids Hope Mentor to 2nd Grader

**Third 90 Network**, Grand Rapids, Michigan Mar 2016 – May 2017

Project Lead & Professor Assistant

**Service**

**PhD Studies  
University Lutheran Chapel**  Sep 2022 – Present

Kids Ministry Volunteer

Co-Coordinator of Rotating Homeless Shelter

**University of Michigan Medical School**

Current Student Admissions Host Jan 2021 – Present

PIBS Peer Mentor Sep 2021 – 2023

Co-Organization of Microbiology & Immunology Students Social Chair Sep 2020 – May 2021

**MPH Studies**

**University of Michigan School of Public Health**  Oct 2018 – Apr 2020

Student Admissions Ambassador

**Undergraduate Studies**

**Fuller Avenue CRC Church**, Grand Rapids, Michigan Aug 2017 – May 2018

Hospitality Staff

Sunday School Assistant

Evening Program Assistant

**Project Neighborhood**, Grand Rapids, Michigan Aug 2017 – May 2018  
Member of the Fuller House, an Intentional Living Community Curated by Calvin

**Knight Investment Management**, Calvin University Sep 2014 – Dec 2017

Health Care Sector Head & Sector Analyst

**Calvin University**

Resident Assistant Aug 2016 – May 2017

Cultural Discerner, Student Activities organization Aug 2015 – May 2016

**SCIENTIFIC PEER REVIEW ACTIVITIES**

Scientific reports (2022, 2025)

BMC Infectious Diseases (2025)

Antimicrobial Resistance & Infection Control (2024)

**Skills**

**Software:** Microsoft Office, Adobe Creative Suite, BioRender

**Programming:** R, Linux, SAS, Python, GitHub, Docker/Singularity, SLURM (computing cluster)

**Molecular Epidemiology:** Whole-genome sequencing, variant calling, gene identification, pangenomics

**Statistical Methods:** Ancestral state reconstruction, convergence-based genome-wide association, burden testing

**Wet Lab Experimentation:** Specimen collection, bacterial cultivation, identification, and susceptibility testing

**Membership in Professional Societies**

*American Society for Microbiology (ASM)*  Present

*Association for Professionals in Infection Control & Epidemiology (APIC)* 2016 - 2020