

August 17, 2025

## Curriculum Vitae

### David C Gaston, MD PhD

Office Address:

Vanderbilt Medical Laboratories  
455 Great Circle Road  
Room 1305  
Nashville, TN 37228

Primary email:

david.c.gaston@vumc.org

Office Phone Number:

(615) 875-7447

Office Fax Number:

(615) 343-8420

### Education:

- **Medical and Graduate school:** The University of Alabama at Birmingham (UAB), Medical Scientist Training Program (MSTP), MD PhD, 2006-2015
  - PhD: Department of Cell, Integrative, and Developmental Biology
  - Thesis: Potential Roles of the Immunostimulatory Signals IL-15 and MICA in Oncolytic HSV-1 Therapy for Malignant Glioma
    - Mentors: Richard J. Whitley, MD, and Jacqueline N. Parker, PhD
- **Postgraduate training:**
  - Residency (Internal Medicine): The University of Utah Internal Medicine Residency, 2015-2018
  - Fellowship (Infectious Diseases): Yale-New Haven Hospital / Yale University section of Infectious Diseases, 2018-2020
  - Fellowship (Medical Microbiology, ACGME): The Johns Hopkins University School of Medicine, Department of Pathology, Division of Microbiology, Patricia Charache Medical Microbiology Fellow, 2020-2021
  - Research Fellowship: The Johns Hopkins University School of Medicine, Department of Pathology, Division of Microbiology, 2021-2022
    - Mentor: Karen C. Carroll, MD

### Licensure and Certification:

- **State in which licensed:** 3/18/2022 – present, Tennessee, License Number 65207. Status – Licensed. Specialties: Internal Medicine, Infectious Diseases, Pathology-Medical Microbiology
- **Specialty boards:**
  - American Board of Internal Medicine, Internal Medicine, Certified 2018
  - American Board of Internal Medicine, Infectious Disease, Certified 2020
  - American Board of Pathology, Medical Microbiology, Certified 2021

## Academic Appointments:

- Assistant Professor of Pathology, Microbiology, and Immunology, Vanderbilt University Medical Center, 2022-present
  - Medical Director, Molecular Infectious Disease Laboratory

## Professional Organizations:

- The Consortium for Clinical Metagenomics for Infectious Diseases (CCMID), 2022-present (Co-Founder and Executive Director)
- College of American Pathologists (CAP), 2020-present
- American Society of Clinical Pathology (ASCP), 2022-present
- American Society of Microbiology (ASM), 2019-present
- Infectious Disease Society of America (IDSA), 2017-present
- Pan-American Society for Clinical Virology (PASCV), 2022-present

## Professional Activities:

- **Intramural:**
  - Assistant Program Director, American Society for Microbiology (ASM) Subcommittee on Postgraduate Educational Programs (CPEP) microbiology fellowship, VUMC
  - Rotation Director, pathology resident microbiology rotation, VUMC
  - Rotation Director, pathology resident / fellow MIDL rotation, VUMC
  - Core Faculty: Infectious Diseases Integrated Science Course, VUSOM
  - VUMC PMI Pathology Residency Clinical Competency Committee, 2023-present
    - Member, 2023-2024
    - Leader, 2024-present
  - VUMC Medical Laboratory Science Program Advisory Committee, 2022-present
  - VUMC Molecular Genetic Pathology Fellowship Program Evaluation Committee, 2024-present
- **Extramural:**
  - The Consortium for Clinical Metagenomics in Infectious Diseases (CCMID.org) Co-Founder and Executive Director
    - CCMID is a collaborative organization working to advance next generation sequencing (NGS) for infectious disease diagnostics. Participants include academicians, industry partners, governmental representatives (CDC, FDA, BARDA), and public health leaders. CCMID meets monthly on a virtual platform with persistently increasing attendance (96 in the 11/4/2024 meeting). Participants are primarily from the United States, though international participants joining as well. Participants lead CCMID-supported projects that generate data, literature, and guidelines to drive the field forward.
  - ASM Health Unit Scientific Advisory Council (SAC) member
    - 2025 - present – membership involves working directly with the ASM CEO, ASM Health Unit Chair and Scientific Director, as well as the broader SAC to shape the field of clinical microbiology by determining priorities of ASM as relating to human, animal, and environmental health with a

OneHealth approach. Priorities identified by the ASM Health Unit are thereafter focused on by ASM at large for implementation.

- IDSA IDWeek Program Committee (IDWPC) member
    - Three year appointment arranging and presenting program content for IDWeek 2025, 2026, and 2027 representing V: Virology (all viruses other than HIV and HIV co-infections) and F: Hepatitis
  - Editorial boards
    - ASM Journal of Clinical Microbiology
      - Appointed 2024
    - ASM Case Reports
      - Appointed 2024
  - ASM Virtual Journal Club Committee, member and virtual journal club moderator
    - Three year appointment, 2022-2025.
    - Webinars below in 7: Virtual Media: Webinars, Podcasts, and Interviews
  - PASCV Educational Committee, member and webinar moderator, 2022-present
    - Webinars below in 7: Virtual Media: Webinars, Podcasts, and Interviews
  - IDSA Core Antimicrobial Stewardship Curriculum, Bugs and Drugs Primer contributor and webinar moderator, 2020-2023
    - Webinars below in 7: Virtual Media: Webinars, Podcasts, and Interviews
  - IDSA Fellows Subcommittee, member and liaison to IDSA Diagnostic Committee, 2019-2022
  - AST Transplant Diagnostics Consensus Conference Infectious Disease Working Group, Lead of NGS Working Group, 2021-2022
  - Ad hoc reviewing: Clinical Infectious Diseases, Open Forum Infectious Diseases, Journal of Applied Laboratory Medicine, Journal of Clinical Microbiology, Microbiology Spectrum, Nature Medicine
- **Awards**
    - Enrollment in IDSA Community of Leaders 2025 Program
    - Credo Award, presented at the January 2025 VUMC Leadership Assembly
    - 2022-2023 VUMC PMI Residency Training Program Charles W. Stratton, IV, MD Memorial Resident Teaching Award, Clinical Pathology
    - 2023-2024 VUMC PMI Residency Training Program Charles W. Stratton, IV, MD Memorial Resident Teaching Award, Clinical Pathology
    - UAB MSTP Honored Alumnus Award – Presented October 12, 2024, UAB MSTP Annual Retreat, Birmingham, AL

## **Research Program:**

- The Consortium for Clinical Metagenomics in Infectious Disease (CCMID)
- PI for T2 Biosystems and VUMC Learning Healthcare System funded clinical trial – Effect of Direct-from-Blood Bacterial Testing on Antibiotic Administration and Clinical Outcomes (NCT06069206)
- The Fisher Center Discovery Program, Johns Hopkins. Next Generation Sequencing for Pathogen Detection in Lower Respiratory Tract Infections. PI: Karen Carroll, MD. Competitive intramural funding for fellowship research, 2021-2022
- The Institute for Clinical and Translational Research, Johns Hopkins. Clinical Translation of Nanopore Metagenomic Next-Generation Sequencing for Pathogen Identification. PI: Trish Simner, PhD. Competitive intramural funding for fellowship research, 2021-2022

## **Publications and Presentations:**

### **1. Articles in refereed journals:**

Humphries RM, Wright PW, Banerjee R, Dulek DE, Champion JC, **Gaston DC**, Talbot TR. Rapid Implementation of Blood Culture Stewardship: Institutional Response to an Acute National Blood Culture Bottle Shortage. *Clin Infect Dis*. 2025 Feb 24;80(2):472-474. doi: 10.1093/cid/ciae402. PMID: 39136555; PMCID: PMC11848254.

**Gaston DC**, Humphries RM, Lewis AA, Gatto CL, Wang L, Nelson GE, Stollings JL, Ereshefsky BJ, Christensen MA, Dear ML, Banerjee R, Miller KF, Self WH, Semler MW, and Qian ET. Protocol and statistical analysis plan for a pragmatic randomized trial examining the effect of direct-from-blood bacterial testing on antibiotic administration and clinical outcomes. *BMJ Open*. 2025 Jan 11;15(1):e090263. doi: 10.1136/bmjopen-2024-090263. PMID: 39800394; PMCID: PMC11751835.

Hojat LS, Patel PK, Ince D, Kang AY, Fong G, Cherabuddi K, Nori P, Al Lawati H, Stohs EJ, Beeler C, Van Schooneveld TC, Lee MS, Hamilton KW, Justo JA, Spicer JO, Logan A, Bennani K, Williams R, Shnekendorf R, Bryson-Cahn C, Willis ZI, Moenster RP, Brennan-Krohn T, Paras ML, Holubar M, **Gaston DC**, Advani SD, Luther VP. Implementing the Infectious Diseases Society of America Antimicrobial Stewardship Core Curriculum: Survey Results and Real-World Strategies to Guide Fellowship Programs. *Open Forum Infect Dis*. 2024 Oct 2;11(10). PMID: 39371369; PMCID: PMC11450624.

Aggarwal P, Rogers A, Grenier L, **Gaston DC**, Zhang SX, Shah M, Alhariri J. Centrifugally Spreading Lymphocutaneous Sporotrichosis: A Rare Cutaneous Manifestation. *Cutis*. 2024 Apr;113(4):E6-E9. doi: 10.12788/cutis.0996. PMID: 38820099.

**Gaston DC**, Chiang AD, Dee K, Dulek D, Banerjee R, Humphries RM. Diagnostic Stewardship for Next-Generation Sequencing Assays in Clinical Microbiology: An Appeal for Thoughtful Collaboration. *Clin Lab Med*. 2024 Mar;44(1):63-73. doi: 10.1016/j.cll.2023.10.002. Epub 2023 Dec 6. PMID: 38280798.

Atwood EN, Esper FP, Bailey K, Doud MK, Benton AM, Friesen J, Rodgers MJ, Humphries RM, Rhoads DD, **Gaston DC**, Wang H. False positive congenital cytomegalovirus saliva screening results with an FDA-approved assay at two institutions. *J Clin Virol*. 2023 Jun 24;166:105527. doi: 10.1016/j.jcv.2023.105527. Epub ahead of print. PMID: 37392724.

Hogan CA, Miller S, Piantadosi A, **Gaston DC**, Simner PJ, Nash S, Babady NE. Which trial do we need? Plasma metagenomic next-generation sequencing to diagnose infections in patients with haematological malignancies and febrile neutropenia: proposal for a randomized-controlled trial. *Clin Microbiol Infect*. 2023 May 25:S1198-743X(23)00248-3. doi: 10.1016/j.cmi.2023.05.024. Epub ahead of print. PMID: 37244468.

Tao L, Humphries RM, Banerjee R, **Gaston DC**. Re-emergence of Parechovirus: 2017-2022 National Trends of Detection in Cerebrospinal Fluid. *Open Forum Infect Dis*. 2023 Mar 1;10(3):ofad112. doi: 10.1093/ofid/ofad112. PMID: 36968966; PMCID: PMC10034751.

Tao L, **Gaston DC**. Increasing Parechovirus CNS Infections and the Enduring Value of Clinical Microbiology Laboratories. *Clinical Chemistry*. 2023 Mar 1;69(3):311-312. doi: 10.1093/clinchem/hvac217. PMID: 36857215.

Robinson ML, Morris CP, Betz JF, Zhang Y, Bollinger R, Wang N, Thiemann DR, Fall A, Eldesouki RE, Norton JM, **Gaston DC**, Forman M, Luo CH, Zeger SL, Gupta A, Garibaldi BT, Mostafa HH. Impact of SARS-CoV-2 variants on inpatient clinical outcome. *Clin Infect Dis*. 2022 Dec 19. PMID: 36528815.

Morris CP, Eldesouki RE, Fall A, **Gaston DC**, Norton JM, Gallagher ND, Luo CH, Abdullah O, Klein EY, Mostafa HH. SARS-CoV-2 reinfections during the Delta and Omicron waves. *JCI Insight*. 2022 Oct 24;7(20):e162007. doi: 10.1172/jci.insight.162007. PMID: 36048527; PMCID: PMC9714778.

Ahmad Y, **Gaston DC**, Gray J, Zhong D, Gudenkauf B, Bourdas D, Ray SC, Simner PJ. The Brief Case: The Fly Who Cried Wohlf. *J Clin Microbiol*. 2022 Jun 15;60(6):e0107321. doi: 10.1128/jcm.01073-21. Epub 2022 Jun 15. PMID: 35703540; PMCID: PMC9199405.

Ahmad Y, **Gaston DC**, Gray J, Zhong D, Gudenkauf B, Bourdas D, Ray SC, Simner PJ. Closing the Brief Case: The Fly Who Cried Wohlf. *J Clin Microbiol*. 2022 Jun 15;60(6):e0108121. doi: 10.1128/jcm.01081-21. Epub 2022 Jun 15. PMID: 35703541; PMCID: PMC9199410.

**Gaston DC**, Miller HB, Fissel JA, Jacobs E, Gough E, Wu J, Klein EY, Carroll KC, Simner PJ. Evaluation of Metagenomic and Targeted Next-Generation Sequencing Workflows for Detection of Respiratory Pathogens from Bronchoalveolar Lavage Fluid Specimens. *J Clin Microbiol*. 2022 Jul 20;60(7):e0052622. doi: 10.1128/jcm.00526-22. Epub 2022 Jun 13. PMID: 35695488; PMCID: PMC9297812.

Dioverti MV, **Gaston DC**, Morris CP, Huff CA, Jain T, Jones R, Anders V, Lederman H, Saunders J, Mostafa HH, Avery RK. Combination Therapy With Casirivimab/Imdevimab and Remdesivir for Protracted SARS-CoV-2 Infection in B-cell-Depleted Patients. *Open Forum Infect Dis*. 2022 May 26;9(6):ofac064. doi: 10.1093/ofid/ofac064. PMID: 35663288; PMCID: PMC9154336.

Fall A, Eldesouki RE, Sachithanandham J, Morris CP, Norton JM, **Gaston DC**, Forman M, Abdullah O, Gallagher N, Li M, Swanson NJ, Pekosz A, Klein EY, Mostafa HH. The displacement of the SARS-CoV-2 variant Delta with Omicron: An investigation of hospital admissions and upper respiratory viral loads. *EBioMedicine*. 2022 May;79:104008. doi: 10.1016/j.ebiom.2022.104008. Epub 2022 Apr 20. PMID: 35460989; PMCID: PMC9020587.

Morris CP, Luo CH, Sachithanandham J, Li M, Schwartz M, **Gaston DC**, Gniazdowski V, Giraldo-Castillo N, Amadi A, Norton JM, Wright WF, Klein EY, Pekosz A, Mostafa HH. Large Scale SARS-CoV-2 Molecular Testing and Genomic Surveillance Reveal Prolonged Infections, Protracted RNA shedding, and Viral Reinfections. *Frontiers in Cellular and Infection Microbiology*. 2022 Apr 11;12:809407. doi: 10.3389/fcimb.2022.809407. PMID: 35480235

Azar MM, Cohen E, Ma L, Cissé OH, Gan G, Deng Y, Belfield K, Asch W, Grant M, Gleeson S, Koff A, **Gaston DC**, Topal J, Curran S, Kulkarni S, Kovacs JA, Malinis M. Genetic and Epidemiologic Analyses of an Outbreak of *Pneumocystis jirovecii* Pneumonia Among Kidney Transplant Recipients in the United States. *Clin Infect Dis*. 2022 Mar 1;74(4):639-647. doi: 10.1093/cid/ciab474. PMID: 34017984; PMCID: PMC9012955.

Luo CH, Morris CP, Sachithanandham J, Amadi A, **Gaston DC**, Li M, Swanson NJ, Schwartz M, Klein EY, Pekosz A, Mostafa HH. Infection with the SARS-CoV-2 Delta Variant is Associated with Higher Recovery of Infectious Virus Compared to the Alpha Variant in both Unvaccinated and Vaccinated Individuals. *Clin Infect Dis*. 2021 Dec 18. PMID: 34922338

**Gaston DC**, Malinis M, Osborn R, Peaper DR, Landry M, Juthani-Mehta M, Azar MM. Clinical Implication of SARS-CoV-2 Cycle Threshold Values in Solid Organ Transplant Recipients. *American Journal of Transplantation*. 2021 Mar;21(3):1304-1311. doi: 10.1111/ajt.16357. Epub 2020 Oct 31. PMID: 33043603

Nematollahi S, Konold VJL, **Gaston DC**, Howard-Anderson J, Kiley JL, Masters MC, Melia MT, Balba GP, Chiang AD, Gupta N. Impact of Coronavirus Disease 2019 on Infectious Diseases Fellows in the United States: Perspectives From the First National Infectious Diseases Fellows Call. *Open Forum Infect Dis*. 2021 Jan 28;8(2):ofab021. doi: 10.1093/ofid/ofab021. PMID: 33623804; PMCID: PMC7888565.

Price CC, Altice FL, Shyr Y, Koff A, Pischel L, Goshua G, Azar MM, Mcmanus D, Chen SC, Gleeson SE, Britto CJ, Azmy V, Kaman K, **Gaston DC**, Davis M, Burrello T, Harris Z, Villanueva MS, Aoun-Barakat L, Kang I, Seropian S, Chupp G, Bucala R, Kaminski N, Lee AI, LoRusso PM, Topal JE, Dela Cruz C, Malinis M. Tocilizumab Treatment for Cytokine Release Syndrome in Hospitalized COVID-19 Patients: Survival and Clinical Outcomes. *Chest*. 2020 Jun 15:S0012-3692(20)31670-6. doi: 10.1016/j.chest.2020.06.006. PMID: 32553536.

Davis MW, McManus D, Koff A, Jaszczur GR, Malinis M, Dela Cruz C, Britto CJ, Price C, Azmy V, Kaman K, **Gaston DC**, Early K, DeWitt M, Song JS, Ortiz C, Juthani-Mehta M, Topal JE. Repurposing antimicrobial stewardship tools in the electronic medical record for the management of COVID-19 patients. *Infect Control Hosp Epidemiol*. 2020 Jun 8:1-3. doi: 10.1017/ice.2020.281. Epub ahead of print. PMID: 32507113; PMCID: PMC7308631.

**Gaston DC**, Peaper DR, Advani SD. Fever, Rash, and Migratory Polyarthralgias. *JAMA*. 2019 May 21;321(19):1930-1931. doi: 10.1001/jama.2019.4799. PMID: 31002308.

Gupta S, Albertson D, **Gaston DC**, Heilbrun ME, Agarwal N, Boucher K, Parnell TJ, Liu T, Morgans A, Madison R, Gowen K, Miller VA, Ross JS, Ali SM, Millis SZ. Comprehensive Genomic Sequencing of Urothelial Tumors Identifies Rare SMARCB1 (INI-1)-Deficient Carcinomas of the Urinary System. *Clin Genitourin Cancer*. 2018 Apr;16(2):e373-e382. doi: 10.1016/j.clgc.2017.09.001. Epub 2017 Sep 7. PMID: 28974397.

Gupta S, Greenberg S, Grimmett J, **Gaston DC**, Agarwal N, Lowrance W, Schiffman J, Kohlmann W. Inherited DNA repair gene mutations detected by tumor next generation sequencing in urinary tract cancers. *Fam Cancer*. 2017 Oct;16(4):545-550. doi: 10.1007/s10689-017-9980-2. PMID: 28315974.

Filkins LM\*, **Gaston DC\***, Mathison B, Smith T, Couturier MR, Murphy RD, Ciarkowski C, Hanson KE, Cariello PF. Biliary Strongyloides stercoralis With Cholecystitis and Extensive Portal Vein Thrombosis. *Open Forum Infect Dis*. 2017 Oct 8;4(4):ofx217. doi: 10.1093/ofid/ofx217. PMID: 29181423; PMCID: PMC5695617.

\*Co-first author, equal contributions

Gill D\*, **Gaston DC\***, Bailey E, Hahn A, Gupta S, Batten J, Alex A, Boucher K, Stenehjem D, Agarwal N. Efficacy of Eplerenone in the Management of Mineralocorticoid Excess in Men With Metastatic Castration-resistant Prostate Cancer Treated With Abiraterone Without Prednisone.

Clin Genitourin Cancer. 2017 Aug;15(4):e599-e602. doi: 10.1016/j.clgc.2016.12.008. Epub 2017 Jan 5. PMID: 28131750; PMCID: PMC5501307.

\*Co-first author, equal contributions

**Gaston DC**, Odom CI, Li L, Markert JM, Roth JC, Cassady KA, Whitley RJ, Parker JN. Production of bioactive soluble interleukin-15 in complex with interleukin-15 receptor alpha from a conditionally-replicating oncolytic HSV-1. PLoS One. 2013 Nov 27;8(11):e81768. doi: 10.1371/journal.pone.0081768. PMID: 24312353; PMCID: PMC3842420.

Benjamin JT, **Gaston DC**, Halloran BA, Schnapp LM, Zent R, Prince LS. The role of integrin alpha8beta1 in fetal lung morphogenesis and injury. Dev Biol. 2009 Nov 15;335(2):407-17. doi: 10.1016/j.ydbio.2009.09.021. Epub 2009 Sep 19. PMID: 19769957; PMCID: PMC2783258.

Moore CD, Thacker EE, Larimore J, **Gaston DC**, Underwood A, Kearns B, Patterson SI, Jackson T, Chapleau C, Pozzo-Miller L, Theibert A. The neuronal Arf GAP centaurin alpha1 modulates dendritic differentiation. J Cell Sci. 2007 Aug 1;120(Pt 15):2683-93. doi: 10.1242/jcs.006346. Epub 2007 Jul 17. PMID: 17635995; PMCID: PMC2810648.

## 2. Books, book chapters, invited review articles

### Invited reviews

Babady NE, Chiu CY, Craney A, **Gaston DC**, Hicklen RS, Hogan CA, John TM, Stewart AG. Diagnosis and management of invasive fungal diseases by next-generation sequencing: are we there yet? Expert Rev Mol Diagn. 2024 Dec 12:1-14. doi: 10.1080/14737159.2024.2436396. Epub ahead of print. PMID: 39623670.

**Gaston DC** and Miller S. The Consortium for Clinical Metagenomics in Infectious Diseases (CCMID). Submitted, under review as of 11/2024.

Bloch KC, Glaser C, **Gaston D**, Venkatesan A. State of the Art: Acute Encephalitis. Clin Infect Dis. 2023 Sep 11;77(5):e14-e33. doi: 10.1093/cid/ciad306. PMID: 37485952.

Azar MM, **Gaston DC**, Kotton CN, Malinis MF. Emerging Microbiology Diagnostics for Transplant Infections: On the Cusp of a Paradigm Shift. Transplantation. 2020 Jul;104(7):1358-1384. doi: 10.1097/TP.0000000000003123. PMID: 31972701.

**Gaston DC**, Azar MM. An Approach to Fungal Diagnostics in Solid Organ Transplantation. OBM Transplantation 2018; 2(4): 037; doi:10.21926/obm.transplant.1804037.

Odom CI, **Gaston DC**, Markert JM, Cassady KA. Human herpesviridae methods of natural killer cell evasion. Adv Virol. 2012;2012:359869. doi: 10.1155/2012/359869. Epub 2012 Jul 8. PMID: 22829821; PMCID: PMC3399383.

**Gaston DC**, Whitley RJ, Parker JN. Engineered Herpes Simplex Virus Vectors for Antitumor Therapy and Vaccine Delivery. Future Virology. 2011 March, 6(3): 321-340. (<http://www.futuremedicine.com/doi/abs/10.2217/fvl.11.4>)

### Book chapters

Moller AG, **Gaston DC**, Dulanto Chiang A. Chapter 18: Nucleic Acid Extraction and Library Prep. Manual of Molecular Microbiology, 1<sup>st</sup> Edition. John Dekker, Editor. ASM Press, 2025

Azar MM, **Gaston DC**, Malinis MF. Chapter 69: Emerging Diagnostics for Transplant Infectious Diseases, in Morris et al (Eds) Emerging Transplant Infections, Springer International Publishing, 2020

### **3. Letters to editor, book reviews, editorials**

**Gaston DC**. Clinical Metagenomics for Infectious Diseases: Progress toward Operational Value. J Clin Microbiol. 2023 Feb 22;61(2):e0126722. doi: 10.1128/jcm.01267-22. Epub 2023 Feb 2. PMID: 36728425; PMCID: PMC9945490.

Parrish NF, **Gaston DC**. Metagenomics in infectious disease diagnostics: Toward best-use practices to optimize actionable results. Transpl Infect Dis. 2023 Feb;25(1):e13959. doi: 10.1111/tid.13959. Epub 2022 Dec 26. PMID: 36571492.

**Gaston DC**, Simner PJ. Taking the Next Step in Metagenomic Infectious Disease Diagnostics. *Clinical Chemistry*. 2022 Feb 12; PMID: 35150253

### **4. Abstracts**

#### Peer-Reviewed

SHEA Spring 2025 Conference, Orlando, FL. “Genomic Characterization of Extended-Spectrum Beta Lactamase (ESBL)-Producing *Klebsiella pneumoniae* in Transplant Recipients” Christina Vojtek, Alison Benton, Matthew Rodgers, **David Gaston**, Milner Staub, Romney Humphries, Thomas R. Talbot, Kevin Dee, Augusto Dulanto-Chiang

Accepted for poster presentation, presented by Christina Vojtek

ASM Kentucky/Tennessee Branch Meeting, Memphis, TN. “Whole Genome Sequencing Enables Resolution of Conflicting MALDI-ToF Identification for *Proteus* species” Emily R. Bentley, Lili Tao, Alison Benton, Kendall Bryant, Romney Humphries, **David C. Gaston**

Accepted for poster presentation, presented by Emily Bentley

ASM Microbe 2024, Atlanta, GA. “Whole Genome Sequencing Enabled Rapid Identification Of Undetected Transmission In A Neonatal Intensive Care Unit” **David C Gaston**, Paul Rhodes, E. Bragin, Cara Charnogursky, Ritu Banerjee, Tom Talbot, Romney M. Humphries

Accepted for poster presentation

American Public Health Laboratories (APHL) Lab Con 2023, Atlanta, GA, “Validation and Performance of an Orthopoxvirus Laboratory Developed Test with Early Detection of Monkeypox Virus in Residual Lesion Specimens” Alison M Benton, Matthew J Rogers, Steven K Lawson, Susan E Sefers, Renee W Johnson, Kara J Levinson, Romney M Humphries, **David C Gaston**

Accepted for oral presentation with Alison Benton



ASM Microbe 2022, Washington, D.C., “Separating Noise from Signal: Interpretive Criteria to Identify Respiratory Flora Using the Respiratory Pathogen ID/AMR Panel and Explify Analysis.” **David C Gaston**, Heather Miller, John Fissel, Emily Jacobs, Robert Schlaberg, Karen C Carroll, Patricia J Simner

Oral presentation: Track Hub CPHM06 Hot Off the Bench: Research from Microbiology Fellows. June 11, 2022

European Congress of Clinical Microbiology and Infectious Diseases (ECCMID) 2022, Lisbon, Portugal, “Evaluation of the Respiratory Pathogen ID/AMR Panel Workflow Compared to Standard-of-Care for the Diagnosis of Lower Respiratory Tract Infections.” **David C Gaston**, Heather Miller, John Fissel, Karen Carroll, Patricia J Simner. Abstract 01663.

Poster presentation

ASM Microbe 2020, Chicago, IL, “Fungal Blood Cultures Do Not Substantially Enhance Diagnostic Yield For Fungal Bloodstream Infections”. David C Gaston, Marwan M Azar, Maricar F Malinis, Jeffrey E Topal, David R Peaper. Abstract 4364.

Poster presentation

American Society for Clinical Investigation / American Association of Physicians (ASCI/AAP) Joint Meeting 2011, Chicago, IL, “Oncolytic HSV-1 Expressing Interleukin-15 for Brain Tumor Therapy.” **David C Gaston**, Carl I Odom, Li Li, Jennifer M Coleman, Jacqueline N Parker, Nicholas J Van Wagoner, G Yancey Gillespie, Thomas N Seyfried, James M Markert, Kevin A Cassady, and Richard J Whitley.

Poster presentation

26<sup>th</sup> Annual Keystone MD/PhD Conference 2011, Keystone, CO, “Conditionally-Replicating oHSV Vectors Dually Encoding IL-15 and IL-15 Receptor Alpha for Malignant Glioma Therapy.” **David C Gaston**, Carl I Odom, Jacqueline N Parker, and Richard J Whitley.

Poster presentation

American Society for Virology, 28<sup>th</sup> Annual Meeting 2009, Vancouver BC, Canada, “Prior Immunity to HSV-1 Limits Replication and Gag-Specific Immune Responses Elicited by a Replication Competent, HSV-1 Derived Vaccine Vector.” **David C Gaston**, Scott D Parker, and Jacqueline N Parker.

Poster presentation

## 5. Presentations at Scientific Meetings

ASM Microbe, Los Angeles, CA. June 22, 2025. “Assessing the Clinical Impact of Next-Generation Sequencing: Where are we now?”. Session convener, introductory presentation.

ASM Microbe, Los Angeles, CA. June 22, 2025. “Philip Hanff Memorial Clinical Case Presentations and Discussion”, two clinical cases presented, with additional cases presented by Dr. Heba Mostafa and Dr. Greg Berry.

ASM Microbe, Los Angeles, CA. June 20, 2025. “Battle of the Brains” on-stage participant

NYC ASM Spring Meeting. New York City, NY. May 2, 2025. “A Little Less Conversation, A Little More Action: Practical Approaches for Next-Generation Sequencing in Clinical Microbiology”

Roche in booth talk at ESCMID 2025. Vienna, Austria. April 12, 2025. “New Lens on Old Threats: Innovative Diagnostic Approaches for Adenovirus, HSV, and Other Transplantation Viruses”

ASM Clin Micro Open. Savannah, GA. January 30, 2025. “Maintaining High-Quality Patient Care Amid New FDA LDT Regulations”

IDWeek 2024. Los Angeles, CA. October 17, 2024. “Clinical Metagenomics: Roadmap for the future” in session 70 - “Clinical Metagenomics: Current State and Opportunities”

IDWeek 2024. Los Angeles, CA. October 18, 2024. Panelist in session 178 – “Diagnostic Clinical Cases: What Do I Do With This Test Result?”

Next Generation Dx Summit. Washington, DC. August 21, 2024. “Options, Obstacles, and Opportunities for Send-Out NGS Tests and In-House Development for Clinical Microbiology”

ADLM 2024. Chicago, IL. July 31, 2024. “Roadmap for the Future: Evidence Generation and Optimizing Diagnostic Integration” in session 34228 – Current and Future State of Metagenomics for Infectious Disease Testing

PASCV Annual Meeting. Clearwater Beach, FL. May 17, 2024. “Tell Us Why We Should Still Care About Clinical Metagenomics”

ASM Clin Micro Open. San Diego, CA. February 1, 2024. “How to Advance NGS for Clinical Microbiology”

Precision Medicine World Conference. San Jose, CA. January 21, 2024. Panelist, “Metagenomic Sequencing Challenges in Clinical Microbiology”.

52nd Annual Symposium: Eastern Pennsylvania Branch of the ASM. Philadelphia, PA. December 8, 2023. “NGS Antimicrobial Susceptibility Testing”

ASM Clinical Virology Symposium. West Palm Beach, FL. September 11, 2023. “Monitoring Emerging Infectious – From Viral Culture to Metagenomics”

ASM Clinical Virology Symposium – Diasorin supported session. West Palm Beach, FL. September 11, 2023. “Congenital CMV Testing at VUMC”

Belmont University 7th Annual Antimicrobial Stewardship Symposium. Nashville, TN. May 19, 2023. “Gram Staining to Sequencing: Emerging Diagnostic Advancements in Clinical Microbiology”

American Public Health Laboratories (APHL) Lab Con 2023, Atlanta, GA. March 15, 2023. “Validation and Performance of an Orthopoxvirus Laboratory Developed Test with Early

Detection of Monkeypox Virus in Residual Lesion Specimens” (Given with Alison Benton, MS SMB(ASCP)<sup>CM</sup>)

Kentucky-Tennessee ASM Branch P.A.C.E. Meeting, Cookeville, TN. November 12, 2022. “Monkeypox Virus: Past, Present, and Future Perspectives”

PASCV Fall Meeting, Chicago, IL. September 22, 2022. “Challenges in Verification and Validation of Quantitative Molecular Assays: Analytical Quantification – EBV”, September 23, 2022. “Esoteric Requests for Quantitative Testing: Esoteric Quantification – HSV”.

American Association of Clinical Chemistry (AACC) Annual Scientific Meeting 2022, Chicago, IL. July 26, 2022. “Finding Value in NGS Technologies for Clinical Microbiology” (given with Patricia Simner, PhD)

ASM Microbe 2022, Washington, D.C. Track Hub CPHM06 Hot Off the Bench: Research from Microbiology Fellows. June 11, 2022. “Separating Noise from Signal: Interpretive Criteria to Identify Respiratory Flora Using the Respiratory Pathogen ID/AMR Panel and Explify Analysis.”

AST Virtual Consensus Conference – Advanced Diagnostics for Transplant Infectious Diseases: Current Uses, Unmet Needs, and Future Directions. Virtual Conference. December 7, 2021 “Next-Generation Sequencing Assays”

The University of Alabama at Birmingham Cell, Developmental, and Integrative Biology Retreat, Guntersville, AL. 2013. “Oncolytic HSV-1 Expressing Interleukin-15 for Malignant Glioma Therapy”

The University of Alabama at Birmingham Graduate Student Research Days, Birmingham, AL. 2012. “Oncolytic HSV-1, Interleukin-15, and Interleukin-15 Receptor Alpha in Brain Tumor Therapy”

Children’s Hospital of Alabama Investigational Forum, Birmingham, AL. 2011. “HSV-1 Modulation of NK Cell Activating Ligands: Possible Mechanisms and Implications for Oncolytic Virotherapy”

The University of Alabama at Birmingham Medical Scientist Training Program Annual Retreat, Birmingham, AL. 2011. “HSV-1 Down-Modulates the NK Activating Ligand MICA”

Program Project Grant Retreat hosted by Bernard Roizman, ScD, Chicago, IL. 2010. “ $\Delta\gamma_{134.5}$  HSV-1 Vectors Expressing IL-15 for Malignant Glioma Therapy”

The University of Alabama at Birmingham Graduate Student Research Day, Birmingham, AL. 2009. “Prior Immunity to HSV-1 Limits Gag-specific Immune Responses Elicited by a Replication Competent, HSV-1 Derived Vaccine Vector”

Birmingham-Southern College Honors Day, Birmingham, AL. 2006. “siRNA Knock-Down of Centaurin alpha-1 mRNA Decreases Dendritic Spine Length”

Birmingham-Southern College Honors Day, Birmingham, AL. 2005. “Fetal Mouse Lung Integrin Expression in Response to Lipopolysaccharide Administration”

## 6. Lectures

### Faculty, VUMC

VUMC PMI Pathology Residency Training Program Microbiology Lecture Series, virtual presentations. January 14 and February 18, 2025. "Virology Part 1 and Part 2"

Johns Hopkins Hospital, virtual presentation. December 10, 2024. "Lessons Learned and a Lasting Legacy: A Tribute to Dr. Carroll." Given as part of Dr. Karen Carroll's retirement celebrations.

ATCC Invited Lecture, Bethesda, MD. December 9, 2024. "Standards, or Standardization? Approaches to Improving Quality and Accessibility of NGS-Based Diagnostics for Infectious Diseases"

UAB Medical Scientist Training Program 2024 Retreat, Keynote Address. October 12, 2024.

VUMC Infectious Disease Fellowship Core Curriculum. July 16, 2024. "Introduction to Clinical Microbiology"

VUMC Infectious Disease Fellowship Core Curriculum. January 8, 2024. "Diagnostics in Infectious Diseases"

VUMC Medical Laboratory Scientist program. November 11-12, 2023. "Special Population and Zoonotic Infections" and "CNS Infections"

VUMC Infectious Disease Fellowship Core Curriculum. July 18, 2023. "Introduction to Microbiology"

VUMC PMI Pathology Residency Training Program Microbiology Lecture Series, virtual presentations. April 4, April 10, April 25, and May 2, 2023. "Virology I – IV".

The Johns Hopkins Division of Infectious Diseases Fisher Center Discovery Program, virtual presentation. January 1, 2023. "Next-Generation Sequencing for Pathogen Identification in Lower Respiratory Infections"

ASPIRE Path in Molecular Medicine, Vanderbilt University School of Medicine, Bench to Bedside Symposium, Nashville, TN. January 25, 2023. "Meningitis: More than Just a Pain in the Neck. A Perspective from Both Sides of the Stethoscope" Presented with Karen Bloch, MD, and Rachel Sobel, MD

Molecular Course, Vanderbilt Medical Laboratory Science Program, Nashville, TN. December 6, 13, and 14, 2022. "Overview of Molecular Microbiology, parts 1-3"

Microbiology and Immunology Course, Vanderbilt University School of Medicine, Nashville, TN. September 29, 2022. "Monkeypox Virus: Past, Present, and Future Perspectives"

Pathology Residency Noon Conference, VUMC, Nashville, TN. September 20, 2022. "Steve's Pet Python Eats Cake: Mnemonics (and rote memorization) for Biochemical Tests in Clinical Microbiology."

Laboratory Medicine Grand Rounds, VUMC, Nashville, TN. September 9, 2022. “Monkeypox Virus: Past, Present, and Future Perspectives”

Infectious Diseases Grand Rounds, VUMC, Nashville, TN. August 24, 2022. “Finding Value in NGS Technologies for Clinical Microbiology and Infectious Diseases”

Occupational Medicine Grand Rounds, VUMC, Nashville, TN. July 19, 2022. “Opening the Black Box: Interfaces between Occupational Medicine and Molecular Microbiology”

#### Fellow, Medical Microbiology, Johns Hopkins Hospital

The Johns Hopkins University School of Medicine, Microbiology Fellow Didactics, Baltimore, MD. 2020 – 2021; 44 lectures, 1-hour each covering major chapters in the *Manual of Clinical Microbiology*, 12<sup>th</sup> Ed.

The Fisher Center Discovery Program – Infectious Disease Clinical and Research Topics, Johns Hopkins Hospital, Baltimore, MD. March 2, 2021. “Next Generation Sequencing for Pathogen Identification in Lower Respiratory Tract Infections”

The Johns Hopkins Pathology Symposium, Baltimore, MD. November 17, 2020. “Emerging Infectious Disease Diagnostics for Transplant Patients”

The Johns Hopkins Gastroenterology Fellowship Program, Baltimore, MD. September 25, 2020. “Gastrointestinal Pathogen Diagnostics at The Johns Hopkins Hospital”

#### Fellow, Infectious Diseases, Yale University / Yale-New Haven Hospital

Infectious Disease case conferences, Yale University Infectious Disease service, New Haven, CT. 2018 – 2019; 17 presentations, 30 minutes each.

Yale School of Medicine Internal Medicine Residency, New Haven, CT. November 25, 2019. “Clinically Relevant Microbiology Review”

Yale School of Medicine Physician Assistant Program, New Haven, CT. October 15, 2019. “A Practical Overview of Clinically Significant Enteric Gram-Negative Rods (Enterobacterales)”

#### MSTP, UAB

Graduate Thesis Defense, The University of Alabama at Birmingham, Birmingham, AL. 2013. “Potential Roles of the Immunostimulatory Signals IL-15 and MICA in Oncolytic HSV-1 Therapy for Malignant Glioma”

W. E. Donaldson Correctional Facility (maximum-security institution), Bessemer, AL. 2012. “Oncolytic Virotherapy: Using Viruses to Treat Cancer”

### **7. Virtual Media: Webinars, Podcasts, and Interviews**

PASCV Webinar Co-Host and Moderator, “Monitoring the Analytical Performance Through Quality Control”, with Dr. Phye Thwe, Dr. Megan Sterolis, and Dr. Donna Wolk. June 10, 2025. <https://www.pascv.org/page/Webinars>

ASM Clinical Microbiology Virtual Journal Club Organizer and Moderator. “Performance and Stewardship of Clinical Metagenomics for Central Nervous System (CNS) Infections” October 29, 2024. <https://asm.org/webinars/virtual-journal-club>

PASCV Webinar Moderator, “A Hootennany of Herpesviruses: Resistance Testing for HSV-1, HSV-2, and CMV” with Dr. Tristan Grams and Dr. Sam Chorlton. September 26, 2024. <https://www.pascv.org/page/Webinars>, <https://www.youtube.com/watch?v=dhh-xu4ow7o>

ASM Clinical Microbiology Virtual Journal Club Organizer and Moderator. “Advancing Approaches to Broad Pathogen Detection” May 14, 2024. <https://asm.org/webinars/virtual-journal-club>

GenomeWeb Interview, March 21 2024, with Huanjia Zhang. “Consortium Hopes to Drive Adoption of Next-Gen Sequencing for Infectious Disease Diagnostics”, released April 11, 2024. <https://www.genomeweb.com/sequencing/consortium-hopes-drive-adoption-next-gen-sequencing-infectious-disease-diagnostics>

Febrile Podcast, March 19 2024. Febrile #101 – StAR: Actue Encephalitis. Host - Sara Dong. Guests – Karen Bloch, Carol Glaser, David Gaston, Arun Venkatesan. <https://febrilepodcast.com/febrile-101-star-acute-encephalitis/>

ASM Clinical Microbiology Virtual Journal Club Organizer and Moderator. “NGS for Predictive AST”, August 8, 2023. <https://asm.org/Webinars/Virtual-Journal-Club>

ASM / CDC Training in NGS for Infectious Disease Applications. “Assessing Data Quality and Metrics, Parts I and II”. June 28-29, 2023. <https://asmngstraining.csod.com/>. Lectures were delivered live online and recorded, accessible through registration with the webinar. These lectures were delivered to an international audience and was an invited lectureship.

ASM Clinical Microbiology Virtual Journal Club Organizer and Moderator. “GI and Rectal NAA Testing”, March 21, 2023. <https://asm.org/Webinars/Virtual-Journal-Club>

PASCV Webinar Moderator, “Influenza and Respiratory Virus Trends and Vaccine Coverage”, with Marie-Louise Landry, MD, and Stacey Schultz-Cherry, PhD. January 27, 2022. <https://www.youtube.com/watch?v=VfCVdzdUHmE>

Let’s Talk Micro with Luis Plaza, discussion of Ahmad et al “The Brief Case: The Fly Who Cried Wohlf”, given with Yembur Ahmad, PhD. November 10, 2022. <https://rss.com/podcasts/letstalkmicro/689583/>

IDSA Academy, Advanced Bugs and Drugs Curriculum, Section 2: The Stewards Corner, with Priya Nori, MD, Ahmed Babiker, MBBS, and Romney Humphries, PhD. <https://academy.idsociety.org/content/section-2-stewards-corner-0>