Andreas Handel, Ph.D.
Department of Epidemiology and Biostatistics, College of Public Health, The University of Georgia
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Academic History

Present rank: Associate Professor & Associate Department Head
Tenure status: Tenured
Appointment: academic, 9 months
Effort allocation: 11/2016 – present: 33% Instruction, 45% Research, 17% Administration, 5% Service
05/2012 – 11/2016: 50% Instruction, 45% Research, 5% Service
01/2009 – 04/2012: 25% Instruction, 75% Research

EDUCATION

- Ph.D. in Physics with minor in Mathematics, Center for Nonlinear Sciences and School of Physics, Georgia Institute of Technology. Thesis Topic: "Limits of localized control in extended nonlinear systems," Advisor: Dr. Roman Grigoriev (2004)
- B.S. (German equivalent) in Physics, Department of Physics, University of Stuttgart, Germany (1999)

POSITIONS

- Associate Professor, Department of Epidemiology and Biostatistics, College of Public Health, University of Georgia (8/2015 – present)
- Associate Department Head, Department of Epidemiology and Biostatistics, College of Public Health, University of Georgia (11/2016 – present)
- Graduate Coordinator, Department of Epidemiology and Biostatistics, College of Public Health, University of Georgia (7/2016 – present)
- Director, Health Systems Modeling Core, Health Informatics Institute (11/2016 – present)
- Adjunct Professor, Department of Epidemiology, Rollins School of Public Health, Emory University (2011 – present)
- Adjunct Professor, School of Ecology, University of Georgia (2016 – present)
- Adjunct Professor, Department of Infectious Diseases, College of Veterinary Medicine, University of Georgia (2010 – present)
- Adjunct Faculty, Institute of Bioinformatics, University of Georgia (2009 – present)
- Member, Faculty of Infectious Diseases, University of Georgia (2009 – present)
- Member, Biomedical and Health Sciences Institute, University of Georgia (2015 – present)
- Member, Center for the Ecology of Infectious Diseases, University of Georgia (2016 – present)
- Assistant Professor, Department of Epidemiology and Biostatistics, College of Public Health, University of Georgia (2009 – 2015)
- Postdoctoral Fellow, Department of Biology, Emory University (2004 – 2008)
- Graduate Research Assistant, School of Physics, Georgia Institute of Technology (2000 – 2004)

Scholarly Activity

Areas of research

My research focuses on the spread and control of infectious diseases, mainly influenza, tuberculosis, and norovirus. I use mathematical models, computational simulations, and statistical and machine learning approaches to understand the dynamics of pathogens on different spatial and temporal scales. One part of my research deals

with the spread of disease inside an infected individual. These within-host studies involve modeling pathogen and immune response, and sometimes drugs, to understand what determines disease severity and infectiousness. The other part of my research concerns the spread and control of disease on the population level. These between-host studies focus on the dynamics, control, and evolution of pathogens. The goal is to help design better intervention and control strategies against infectious diseases, both for individual patients and on the population level.

Publications

PEER-REVIEWED JOURNAL ARTICLES

(^ indicates a student or postdoc mentee, * indicates corresponding/senior author)

1. Gallagher ME, Sieben AJ, Nelson KN, Kraay ANM, Orenstein WA, Lopman B, **Handel A**, Koelle K. Indirect benefits are a crucial consideration when evaluating SARS-CoV-2 vaccine candidates. Nat Med. 2020 Nov 23. PMID: 33230343.
2. McKay B^, Ebell M, Billings WZ^, Dale AP, Shen Y, **Handel A**. Associations Between Relative Viral Load at Diagnosis and Influenza A Symptoms and Recovery. Open Forum Infect Dis. 2020. PMCID: PMC7751133.
3. Cheng W, Pan A, Rathbun SL, Ge Y, Xiao Q, Martinez L, Ling F, Liu S, Wang X, Yu Z, Ebell MH, Li C, **Handel A**, Chen E, Shen Y. Effectiveness of Neuraminidase Inhibitors to Prevent Mortality in Laboratory-Confirmed Avian Influenza A H7N9 Patients. Int J Infect Dis. 2020 Dec 14. PMID: 33333253.
4. Shen Y, Li C, Dong H, Wang Z, Martinez L, Sun Z, **Handel A**, Chen Z, Chen E, Ebell MH, Wang F, Yi B, Wang H, Wang X, Wang A, Chen B, Qi Y, Liang L, Li Y, Ling F, Chen J, Xu G. Community Outbreak Investigation of SARS-CoV-2 Transmission Among Bus Riders in Eastern China. JAMA Intern Med. 2020. PMID: 32870239.
5. Skarlupka AL, **Handel A**, Ross TM. Dataset of antigenic distance measures, hemagglutination inhibition, viral lung titers, and weight loss in mice and ferrets when exposed to HA-based vaccination or sub-lethal A(H1) influenza infection. Data in Brief. 2020. Vol 32, Volume 32, 106118.
6. Skarlupka AL, **Handel A**, Ross TM. Influenza hemagglutinin antigenic distance measures capture trends in HAI differences and infection outcomes, but are not suitable predictive tools. Vaccine. 2020. PubMed PMID: 32682618.
7. Steele MK, Wikswo ME, Hall AJ, Koelle K, **Handel A**, Levy K, Waller LA, Lopman BA. Characterizing Norovirus Transmission from Outbreak Data, United States. Emerg Infect Dis. 2020. PubMed PMID: 32687043.
8. Fung IC, Cheung CN, **Handel A**. SARS-CoV-2 viral and serological testing when college campuses reopen - some practical considerations. Disaster Med Public Health Prep. 2020. PubMed PMID: 32713384.
9. Shen Y, Xu W, Li C, **Handel A,** Martinez L, Ling F, Ebell M, Fu X, Pan J, Ren J, Gu W, Chen E. A Cluster of Novel Coronavirus Disease 2019 Infections Indicating Person-to-Person Transmission Among Casual Contacts From Social Gatherings: An Outbreak Case-Contact Investigation. Open Forum Infect Dis. 2020. PMID: 32613025.
10. Zhang J, Yao J, Jiang J, Pan X, Luo M, Xia Y, Fan Q, Ding X, Ruan J, **Handel A**, Bahl J, Chen W, Zha L, Fu T. Migration interacts with the local transmission of HIV in developed trade areas: A molecular transmission network analysis in China. Infect Genet Evol. 2020. PMID: 32454244.
11. McKay B, Ebell M, Dale AP, Shen Y, **Handel A**.* Virulence-mediated infectiousness and activity trade-offs and their impact on transmission potential of influenza patients. Proc Biol Sci. 2020. PMID: 32396798.
12. Moore JR, Ahmed H, Manicassamy B, Garcia-Sastre A, **Handel A**, Antia R. Varying Inoculum Dose to Assess the Roles of the Immune Response and Target Cell Depletion by the Pathogen in Control of Acute Viral Infections. Bull Math Biol. 2020. doi:10.1007/s11538-020-00711-4
13. Huang H, **Handel, A**, Song X. A Bayesian approach to estimate parameters of ordinary differential equation. Computational Statistics 2020. doi: 10.1007/s00180-020-00962-8
14. **Handel, A.*** A software package for immunologists to learn simulation modeling. BMC Immunology 2020, 21 (1). https://doi.org/10.1186/s12865-019-0321-0.
15. **Handel, A.***, La Gruta NL, Thomas PG. Simulation modelling for immunologists. Nat Rev Immunol. 2020. PMID: 31804613.

16. **Handel A***, Martinez L, Sekandi JN, Bellan SE, Zhu L, Chen C, Liu Q, Donkor S, Sutherland J, Hill PC, Gilman RH, Grandjean L, Whalen CC. Evidence for supercoughers in an analysis of six tuberculosis cohorts from China, Peru, The Gambia and Uganda. Int J of TB and Lung Disease 2019, 23(12):1286-1292.
17. Martinez L, Cheng W, Wang X, Ling F, Mu L, Li C, Huo X, Ebell MH, Huang H, Zhu L, Li C, Chen E, **Handel, A.***, Shen Y. A Risk Classification Model to Predict Mortality Among Laboratory-Confirmed Avian Influenza A H7N9 Patients: A Population-Based Observational Cohort Study. J Infect Dis. 2019. PMID: 31622983.
18. Wu T, Guan J, **Handel A**, Tscharke DC, Sidney J, Sette A, Wakim LM, Sng XYX, Thomas PG, Croft NP, Purcell AW, La Gruta NL. Quantification of epitope abundance reveals the effect of direct and cross-presentation on influenza CTL responses. Nat Commun. 2019. PMID: 31253788.
19. McKay B^, Castellanos M, Ebell M, Whalen CC, **Handel A***. An attempt to reproduce a previous meta-analysis and a new analysis regarding the impact of directly observed therapy on tuberculosis treatment outcomes. PLoS One. 2019. PMID: 31120965.
20. Dale AP, Ebell M, McKay B^, **Handel A**, Forehand R, Dobbin K. Impact of a Rapid Point of Care Test for Influenza on Guideline Consistent Care and Antibiotic Use. J Am Board Fam Med. 2019. PMID: 30850459.
21. Schwartz L, Mutanga J, Kakaire R, Davis-Olwell P, **Handel A**, Sekandi J, Halloran M, Kiwanuka N, Zalwango S, Whalen C. Validation of a Pictorial Survey Tool to Measure Time Use in an African Urban Setting. Sociological Methods & Research. 2019. doi: 10.1177/0049124119826150.
22. Woldu H, Heckman TG, **Handel A**, Shen Y. Applying Functional Data Analysis to Assess Tele-Interpersonal Psychotherapy's Efficacy to Reduce Depression. J Appl Stat. 2019. PMID: 31741546.
23. **Handel A***, Liao L, Beauchemin C. Progress and trends in mathematical modelling of influenza A virus infections. Current Opinion in Systems Biology. 2018. 12:30-36.
24. **Handel A***, Li Y^, McKay B^, Pawelek KA, Zarnitsyna V, Antia R. Exploring the impact of inoculum dose on host immunity and morbidity to inform model-based vaccine design. PLoS Comput Biol. 2018. PMID: 30273336.
25. Castellanos ME, Kirimunda S, Martinez L, Quach T, Woldu H, Kakaire R, **Handel A**, Zalwango S, Kiwanuka N, Whalen CC. Performance of the QuantiFERON®-TB Gold In-Tube assay in tuberculin skin test converters: a prospective cohort study. Int J Tuberc Lung Dis. 2018. PMID: 30092864.
26. Antia A, Ahmed H, **Handel A**, Carlson NE, Amanna IJ, Antia R, Slifka M. Heterogeneity and longevity of antibody memory to viruses and vaccines. PLoS Biol. 2018. PMID: 30096134.
27. Zarnitsyna VI, Bulusheva I, **Handel A**, Longini IM, Halloran ME, Antia R. Intermediate levels of vaccination coverage may minimize seasonal influenza outbreaks. PLoS One. 2018. PMID: 29944709.
28. Martinez L, **Handel A**, Shen Y, Chakraburty S, Quinn FD, Stein CM, Malone LL, Zalwango S, Whalen CC. A Prospective Validation of a Clinical Algorithm to Detect Tuberculosis in Child Contacts. Am J Respir Crit Care Med. 2018. PMID: 29035095.
29. Martinez L, Shen Y, **Handel A**, Chakraburty S, Stein CM, Malone LL, Boom WH, Quinn FD, Joloba ML, Whalen CC, Zalwango S. Effectiveness of WHO's pragmatic screening algorithm for child contacts of tuberculosis cases in resource-constrained settings: a prospective cohort study in Uganda. Lancet Respir Med. 2018. PMID: 29273539.
30. **Handel A***. Learning infectious disease epidemiology in a modern framework. PLoS Comput Biol. 2017. PMID: 29049284.
31. Ooi JD, Petersen J, Tan YH, Huynh M, Willett ZJ, Ramarathinam SH, Eggenhuizen PJ, Loh KL, Watson KA, Gan PY, Alikhan MA, Dudek NL, **Handel A**, Hudson BG, Fugger L, Power DA, Holt SG, Coates PT, Gregersen JW, Purcell AW, Holdsworth SR, La Gruta NL, Reid HH, Rossjohn J, Kitching AR. Dominant protection from HLA-linked autoimmunity by antigen-specific regulatory T cells. Nature 2017. PMID: 28467828.
32. Ragonnet R, Trauer JM, McBryde ES, Houben RM, Denholm JT, **Handel A**, Sumner T. Is IPT more effective in high-burden settings? Modelling the effect of tuberculosis incidence on IPT impact. Int J Tuberc Lung Dis. 2017. PMID: 28157466.
33. Steele MK, Remais JV, Gambhir M, Glasser JW, **Handel A**, Parashar UD, Lopman BA. Targeting pediatric versus elderly populations for norovirus vaccines: a model-based analysis of mass vaccination options.

Epidemics. 2016. PMID: 27821278.

34. Lipsitch M, Barclay W, Raman R, Russell CJ, Belser JA, Cobey S, Kasson PM, Lloyd-Smith JO, Maurer-Stroh S, Riley S, Beauchemin CA, Bedford T, Friedrich TC, **Handel A**, Herfst S, Murcia PR, Roche B, Wilke CO, Russell CA. Viral factors in influenza pandemic risk assessment. Elife. 2016. PMID: 27834632.
35. Houben RMGJ, Menzies NA, Sumner T, Huynh GH, Arinaminpathy N, Goldhaber-Fiebert JD, Lin HH, Wu CY, Mandal S, Pandey S, Suen SC, Bendavid E, Azman AS, Dowdy DW, Bacaër N, Rhines AS, Feldman MW, **Handel A**, Whalen CC, Chang ST, Wagner BG, Eckhoff PA, Trauer JM, Denholm JT, McBryde ES, Cohen T, Salomon JA, Pretorius C, Lalli M, Eaton JW, Boccia D, Hosseini M, Gomez GB, Sahu S, Daniels C, Ditiu L, Chin DP, Wang L, Chadha VK, Rade K, Dewan P, Hippner P, Charalambous S, Grant AD, Churchyard G, Pillay Y, Mametja LD, Kimerling ME, Vassall A, White RG. Feasibility of achieving the 2025 WHO global tuberculosis targets in South Africa, China, and India: a combined analysis of 11 mathematical models. Lancet Glob Health. 2016. PMID: 27720688.
36. Menzies NA, Gomez GB, Bozzani F, Chatterjee S, Foster N, Baena IG, Laurence YV, Qiang S, Siroka A, Sweeney S, Verguet S, Arinaminpathy N, Azman AS, Bendavid E, Chang ST, Cohen T, Denholm JT, Dowdy DW, Eckhoff PA, Goldhaber JD, **Handel A**, Huynh GH, Lalli M, Lin HH, Mandal S, McBryde ES, Pandey S, Salomon JA, Suen SC, Sumner T, Trauer JM, Wagner BG, Whalen CC, Wu CY, Boccia D, Chadha VK, Charalambous S, Chin DP, Churchyard G, Daniels C, Dewan P, Ditiu L, Eaton JW, Grant AD, Hippner P, Hosseini M, Mametja D, Pretorius C, Pillay Y, Rade K, Sahu S, Wang L, Houben RM, Kimerling ME, White RG, Vassall A. Cost-effectiveness and resource implications of aggressive action on tuberculosis in China, India, and South Africa: a combined analysis of nine models. Lancet Glob Health. 2016. PMID: 27720689.
37. Zarnitsyna VI, **Handel A**, McMaster SR, Hayward SL, Kohlmeier JE, Antia R. Mathematical Model Reveals the Role of Memory CD8 T Cell Populations in Recall Responses to Influenza. Front Immunol. 2016. PMID: 27242779.
38. Pawelek KA, Dor D Jr, Salmeron C, **Handel A***. Within-Host Models of High and Low Pathogenic Influenza Virus Infections: The Role of Macrophages. PLoS One. 2016. PMID: 26918620.
39. Quinn KM, Zaloumis SG, Cukalac T, Kan WT, Sng XY, Mirams M, Watson KA, McCaw JM, Doherty PC, Thomas PG, **Handel A**, La Gruta NL. Heightened self-reactivity associated with selective survival, but not expansion, of naïve virus-specific CD8+ T cells in aged mice. Proc Natl Acad Sci. 2016. PMID: 26787864.
40. Sekandi JN, Zalwango S, Martinez L, **Handel A**, Kakaire R, Nkwata AK, Ezeamama AE, Kiwanuka N, Whalen CC. Four Degrees of Separation: Social Contacts and Health Providers Influence the Steps to Final Diagnosis of Active Tuberculosis Patients in Urban Uganda. BMC Infect Dis. 2015. PMID: 26293293.
41. **Handel A***, Rohani P. Crossing the scale from within-host infection dynamics to between-host transmission fitness: a discussion of current assumptions and knowledge. PTRSB. 2015. PMID: 26150668.
42. Devasia T^, Lopman B, Leon J, **Handel A***. Association of host, agent and environment characteristics and the duration of incubation and symptomatic periods of norovirus gastroenteritis. Epidemiol Infect. 2015. PMID: 25483148.
43. Bird NL, Olson MR, Hurt AC, Oshansky CM, Oh DY, Reading PC, Chua BY, Sun Y, Tang L, **Handel A**, Jackson DC, Turner SJ, Thomas PG, Kedzierska K. Oseltamivir Prophylaxis Reduces Inflammation and Facilitates Establishment of Cross-Strain Protective T Cell Memory to Influenza Viruses. PLoS One. 2015. PMID: 26086392.
44. **Handel A***, Ebell MH. Neuraminidase inhibitors for influenza: fully evaluating benefits and harms. Lancet Respir Med. 2015. PMID: 25773218.
45. Zheng N^, Whalen CC, **Handel A***. Modeling the potential impact of host population survival on the evolution of M. tuberculosis latency. PLoS One. 2014. PMID: 25157958.
46. **Handel A***, Lebarbenchon C, Stallknecht D, Rohani P. Trade-offs between and within scales: environmental persistence and within-host fitness of avian influenza viruses. Proc Biol Sci. 2014. PMID: 24898369.
47. Nguyen TH, Rowntree LC, Pellicci DG, Bird NL, **Handel A**, Kjer-Nielsen L, Kedzierska K, Kotsimbos TC, Mifsud NA. Recognition of distinct cross-reactive virus-specific CD8+ T cells reveals a unique TCR signature in a clinical setting. J Immunol. 2014. PMID: 24778446.
48. Li Y^, **Handel A***. Modeling inoculum dose dependent patterns of acute virus infections. J Theor Biol. 2014. PMID: 24440713.

49. **Handel A***, Akin V^, Pilyugin SS, Zarnitsyna V, Antia R. How sticky should a virus be? The impact of virus binding and release on transmission fitness using influenza as an example. J R Soc Interface. 2014. PMID: 24430126.
50. Cukalac T, Chadderton J, **Handel A**, Doherty PC, Turner SJ, Thomas PG, La Gruta NL. Reproducible selection of high avidity CD8+ T-cell clones following secondary acute virus infection. PNAS 2014. PMID: 24474775.
51. **Handel A***, Brown J, Stallknecht D, Rohani P. A multi-scale analysis of influenza A virus fitness trade-offs due to temperature-dependent virus persistence. PLoS Comput Biol. 2013. PMID: 23555223.
52. Thomas PG, **Handel A**, Doherty PC, La Gruta NL. Ecological analysis of antigen-specific CTL repertoires defines the relationship between naive and immune T-cell populations. PNAS 2013. PMID: 23319654.
53. Jackwood MW, Hall D, **Handel A**. Molecular evolution and emergence of avian gammacoronaviruses. Infect Genet Evol. 2012. PMID: 22609285.
54. Desai R, Hembree CD^, **Handel A**, Matthews JE, Dickey BW, McDonald S, Hall AJ, Parashar UD, Leon JS, Lopman B. Severe outcomes are associated with genogroup 2 genotype 4 norovirus outbreaks: a systematic literature review. Clin Infect Dis. 2012. PMID: 22491335.
55. Fung IC^, Antia R, **Handel A***. How to minimize the attack rate during multiple influenza outbreaks in a heterogeneous population. PLoS One. 2012. PMID: 22701558.
56. Beauchemin CA, **Handel A***. A review of mathematical models of influenza A infections within a host or cell culture: lessons learned and challenges ahead. BMC Public Health. 2011. PMID: 21356136.
57. Moffat JM, **Handel A**, Doherty PC, Turner SJ, Thomas PG, La Gruta NL. Influenza epitope-specific CD8+ T cell avidity, but not cytokine polyfunctionality, can be determined by TCRβ clonotype. J Immunol. 2010. PMID: 21041725.
58. **Handel A***, Longini IM Jr, Antia R. Towards a quantitative understanding of the within-host dynamics of influenza A infections. J R Soc Interface. 2010. PMID: 19474085.
59. **Handel A***, Rozen DE. The impact of population size on the evolution of asexual microbes on smooth versus rugged fitness landscapes. BMC Evol Biol. 2009. PMID: 19765292.
60. **Handel A***, Longini IM Jr, Antia R. Intervention strategies for an influenza pandemic taking into account secondary bacterial infections. Epidemics. 2009. PMID: 20161493.
61. **Handel A***, Yates A, Pilyugin SS, Antia R. Sharing the burden: antigen transport and firebreaks in immune responses. J R Soc Interface. 2009. PMID: 18708323.
62. **Handel A***, Margolis E, Levin BR. Exploring the role of the immune response in preventing antibiotic resistance. J Theor Biol. 2009. PMID: 19056402.
63. **Handel A***, Longini IM Jr, Antia R. Antiviral resistance and the control of pandemic influenza: the roles of stochasticity, evolution and model details. J Theo Bio 2009. PMID: 18952105.
64. **Handel A***, Bennett MR. Surviving the bottleneck: transmission mutants and the evolution of microbial populations. Genetics. 2008. PMID: 18854584.
65. **Handel A***, Antia R. A simple mathematical model helps to explain the immunodominance of CD8 T cells in influenza A virus infections. J Virol. 2008. PMID: 18550672.
66. Rozen DE, Habets MG, **Handel A**, de Visser JA. Heterogeneous adaptive trajectories of small populations on complex fitness landscapes. PLoS One. 2008. PMID: 18320036.
67. **Handel A***, Longini IM Jr, Antia R. Neuraminidase inhibitor resistance in influenza: assessing the danger of its generation and spread. PLoS Comput Biol. 2007. PMID: 18069885.
68. **Handel A***, Yates A, Pilyugin SS, Antia R. Gap junction-mediated antigen transport in immune responses. Trends Immunol. 2007. PMID: 17951108.
69. **Handel A***, Longini IM Jr, Antia R. What is the best control strategy for multiple infectious disease outbreaks? Proc Biol Sci. 2007. PMID: 17251095.
70. Viboud C, Tam T, Fleming D, **Handel A**, Miller MA, Simonsen L. Transmissibility and mortality impact of epidemic and pandemic influenza, with emphasis on the unusually deadly 1951 epidemic. Vaccine. 2006. PMID: 16806596.
71. **Handel A***, Regoes RR, Antia R. The role of compensatory mutations in the emergence of drug resistance. PLoS Comput Biol. 2006 Oct;2(10):e137. PMID: 17040124.

72. **Handel A***, Grigoriev RO. Transient dynamics and nonlinear stability of spatially extended systems. Phys Rev E Stat Nonlin Soft Matter Phys. 2006. PMID: 17025738.
73. **Handel A**, Grigoriev RO. Pattern selection and control via localized feedback. Phys Rev E Stat Nonlin Soft Matter Phys. 2005 Dec;72(6 Pt 2):066208. PMID: 16486041.
74. Grigoriev RO, **Handel A**. Non-normality and the localized control of extended systems. Phys Rev E Stat Nonlin Soft Matter Phys. 2002. PMID: 12513447.
75. Grigoriev RO, **Handel A**. Spectral theory for the failure of linear control in a nonlinear stochastic system. Phys Rev E Stat Nonlin Soft Matter Phys. 2002. PMID: 12513339.

BOOK CHAPTERS

- Roman O. Grigoriev and **Andreas Handel** (2007). Localized Control of Spatiotemporal Chaos. Handbook of Chaos Control, Chapter 8, Wiley-VCH

OTHER PUBLICATIONS

- **Andreas Handel** (2020). Book review of "Modeling and Control of Infectious Diseases in the Host: With Matlab and R." Quarterly Review of Biology, vol 95, 3, p275.
- **Andreas Handel** (2017). Book review of "Cell Biology by the Numbers." Quarterly Review of Biology, vol 92, 4, p477.
- **Andreas Handel** (2004). Limits of localized control in extended nonlinear systems. Ph. D. Thesis, School of Physics, Georgia Institute of Technology

Creative contributions other than formal publications

SOFTWARE DEVELOPMENT

- Developed and maintained the R software package *modelbuilder*, a tool for allowing researchers to build systems models without coding. Released to CRAN TBD. https://ahgroup.github.io/modelbuilder/
- Developed and maintained the R software package DSAIRM (Dynamical Systems Approaches to Immune Response Modeling), a tool for teaching systems modeling of within-host infectious disease immunology. Released to CRAN 8/2018, >9,000 downloads as of 5/2020. https://ahgroup.github.io/DSAIRM/
- Developed and maintained the R software package DSAIDE (Dynamical Systems Approaches to Infectious Disease Epidemiology), a tool for teaching modern infectious disease epidemiology. Released to CRAN 3/2017, >16,000 downloads as of 5/2020. https://ahgroup.github.io/DSAIDE/

ONLINE TEXTBOOK

- *Infectious Disease Epidemiology - a Model-based Approach*. A freely available online textbook that I wrote and use for teaching: https://andreashandel.github.io/IDEMAbook/

ONLINE COURSE MATERIALS

- *Simulation Modeling in Immunology.* Complete course materials for the 2020 SISMID workshop, available freely at: https://andreashandel.github.io/SMIcourse/
- *Modern Applied Data Analysis.* Complete course materials for an online course I taught for the first time in fall 2019, available freely at: https://andreashandel.github.io/MADAcourse/
- *Infectious Disease Epidemiology - a Model-based Approach*. Complete course materials for an online course I regularly teach, available freely at: https://andreashandel.github.io/IDEMAcourse/

ORAL PRESENTATIONS (* indicates invited presentations)

- "The Role of Influenza Vaccine Dose Towards Homologous and Heterologous Protection", 2020/12/2, ISV Virtual Congress, North America Influenza Vaccine Symposium *

- "Simulation modeling to inform COVID-19 control and vaccination strategies", International Symposium on the Prevention and Control of Infectious Diseases during the Pandemic of COVID-19 - The 4th Pudong Health Forum and the Yangtze River Delta Regional Public Health Symposium, 2020/11/18, Pudong/Shanghai, China (virtual) *
- "COVID-19: Modeling, Visualization and Data Analysis", 2020/10/07, Virginia Tech (virtual), VA*
- "Modeling COVID-19", 2020/09/30, University of British Columbia (virtual), Vancouver, Canada*
- "Population-level patterns of COVID-19 and Flu: What should we expect?" 2020/09/15, MJH Webinar*
- "Studying COVID-19 Spread and Control", 2020/08/27, UGA Global Health Institute (virtual), Athens, GA
- "Analysis and modeling applied to COVID-19", 4/20/2020, GA Southern (virtual), Statesboro, GA*
- "Introduction to Infectious Disease Modeling," 11/1/2019, Pudong CDC Workshop, Athens, GA
- "Model-based optimization of vaccine inoculum dose," 10/23/2019, Viral Dynamics Conference, Paris, France*
- "Introduction to Infectious Disease Modeling," 2019/07/10, Zhejiang CDC Training Workshop, Hangzhou, China*
- "Exploring the impact of inoculum dose on host immunity and morbidity to inform model-based vaccine design," 2/21/2019, q-BIO Conference, Oahu, HI
- "Exploring the impact of inoculum dose on host immunity and morbidity to inform model-based vaccine design," 2/7/2019, Center for Vaccines and Immunology, Athens, GA*
- "Exploring the impact of inoculum dose on host immunity and morbidity to inform model-based vaccine design," 1/30/2019, GaTech, Atlanta, GA*
- "Active learning of Infectious Disease Modeling," 1/23/2019, Pudong CDC Workshop, Athens, GA
- "Interactive Building and Analysis of Simulation Models Without Coding," 10/20/2018, Athens, GA
- "Using mathematics, statistics, and computers to study infectious diseases," 10/6/2018, USC Beaufort, SC*
- "A gentle approach to model-based Ecology, Epidemiology, and Evolution of Infectious Diseases," 5/30/18, Glasgow, UK*
- "Computer modeling to study the impact of tuberculosis interventions," 4/23/2018, USC Beaufort, SC*
- "The impact of inoculum dose on influenza vaccination," 11/7/2017, Emory University, Atlanta, GA
- "Modeling Influenza and other Infectious Diseases," 10/25/2017, Athens, GA
- "Teaching infectious disease epidemiology in a modern framework," 10/20/2017, Athens, GA
- "Using statistics and computer models to study infectious diseases," 10/6/2017, USC Beaufort, SC*
- "Introduction to Infectious Disease Modeling," 6/10/2017, University of Tuebingen, Germany*
- "Modeling inoculum dose for influenza infections," 09/14/2016, Emory University, Atlanta, GA*
- "Flu in Ducks and Water: A Multiscale analysis," 9/7/2016, UGA, Athens, GA*
- "Graduate Opportunities in Public Health," 10/9/2015, USC Beaufort, SC*
- "MIB software for Teaching/Training in Computational Immunology," 10/1/2015, Rockville, MD*
- "Cross-scale models for influenza dynamics," 3/21/2015, Cambridge, UK*
- "Flu in Ducks and Water: A Multiscale Modeling Study," 9/29/2014, GA Southern U, Statesboro, GA*
- "The concept of R0 - or why Kate Winslet is not a real EIS officer", 8/29/2014, USC Beaufort, SC*
- "A TB Model for post-2015 WHO Interventions in South Africa", 6/2/2014, Gates Foundation, Seattle, WA*
- "Flu in Ducks and Water: A Multiscale Modeling Study," 4/9/2014, Mathematical Biosciences Institute, Columbus, Ohio*
- "Introduction to Mechanistic Modeling," 2/25/2014, CDC, Atlanta, GA*
- "Modeling the role of inoculum dose on infection dynamics," 2/11/2014, Georgia Tech, Atlanta, GA*
- "Inference for infectious disease modeling," 2/7/2014, CDC, Atlanta, GA*
- "Flu in Ducks and Water: A Multiscale Modeling Study," 11/14/2013, OneHealth Talk, UGA, Athens, GA*
- "A mathematical model shows that prolonged latency can improve population-level survival of Mycobacterium tuberculosis," 10/11/2013, USC Beaufort, Beaufort, SC*
- "How to improve our influenza models - some thoughts" (keynote address), 7/15/2013, Frankfurt, Germany*

- "How Sticky should a virus be? The impact of binding and detachment on virus fitness using influenza as an example", 6/21/2013, St. Jude, Memphis, TN*
- "A multi-scale analysis of influenza A virus fitness trade-offs due to temperature-dependent virus persistence," 4/3/2013, Ecology Department, UGA, Athens, GA
- "A multi-scale analysis of influenza A virus fitness trade-offs due to temperature-dependent virus persistence," 3/11/2013, USC Beaufort, Beaufort, SC*
- "Parallel Computation using the R software platform," UGA, 5/2/2012
- "Modeling the impact of drug-based interventions for pandemic influenza," CDC, 2/8/2012, Atlanta, GA*
- "Introduction to Infectious Disease Modeling," 10/27/2011, Emory University, Atlanta, GA*
- "Model fitting and model selection," Evolution of Infectious Diseases: Integrating Empirical Data and Modeling Approaches, NESCent Catalysis Meeting, 3/23/2011, Raleigh, NC*
- "Influenza & Immunity," RAPIDD workshop on Generation and Maintenance of Immune Memory, 3/8/2011, Seattle, WA*
- "Mathematical and computational modeling of infectious disease dynamics," 10/ 20/2010, Institute of Bioinformatics, University of Georgia, Athens, GA*
- "How sticky should a virus be? The impact of attachment and detachment rates on virus fitness using influenza as an example", 8/30/2010, Viral Dynamics Workshop, Santa Fe, NM*
- "How sticky should a virus be? The impact of attachment and detachment rates on virus fitness using influenza as an example", 7/20/2010, Fields Institute Workshop on the Mathematics of Drug Resistance in Infectious Diseases, Toronto, Canada*
- "Modeling influenza infection in vivo," 1/13/2010, Los Alamos National Laboratory, Los Alamos, NM*
- "How sticky should a virus be? Optimal Infection Strategies and the Balance Between Hemagglutinin and Neuraminidase for Influenza A Virus" 10/12/2009, Department of Infectious Diseases, Athens GA*
- "Modeling Influenza infection in vivo," 7/28/2009, Conference on Immunobiology of Influenza Virus Infection, Athens, GA*
- "Within-host ecology: Virus spread, gap-junctions and firebreaks," 3/6/2009, Ecology of Infectious Diseases Seminar Series, University of Georgia, Athens, GA*
- "Mathematical Modeling of Immunodominance in influenza infections," 2/13/2009, Institute of Bioinformatics, University of Georgia, Athens, GA*
- "Mathematical Modeling of Infections: CD8 T Cell Dynamics During Influenza Infections as an Example", 11/11/2008, Department of Cell Biology, University of Georgia, Athens, GA*
- "Within-host dynamics of Influenza infections: When details matter," 6th Annual Conference on Ecology and Evolution of Infectious Diseases, 6/05/2008, Fort Collins, CO*
- "The dynamics of drug resistance emergence," 10/05/2007, Center for Interdisciplinary Applied Mathematics, University of North Carolina, Chapel Hill, NC*
- "Influenza resistant to neuraminidase inhibitors: the danger of its generation and spread," Immunobiology of Influenza Virus Infection: Approaches for an Emerging Zoonotic Disease, 7/31/2007, Athens, GA
- "Mathematical models of drug resistance emergence," 1/24/2007, Department of Mathematics, Georgia Institute of Technology, Atlanta, GA*
- "Two stochastic strolls through pathogen land," 11/17/2006, Seminar in Population Biology and Evolutionary Ecology, Emory University, Atlanta, GA*
- "The Role of Compensatory Mutations for the Emergence of Drug Resistance," 4th Annual Conference on Ecology and Evolution of Infectious Diseases, 5/18 - 5/20/2006, State College, PA

POSTER PRESENTATIONS

- "Exploring the impact of inoculum dose on host immunity and morbidity to inform model-based vaccine design," 2019 Georgia Bio Innovation Summit, 2019/10/08, Atlanta, GA
- "An analysis of the role of virulence on infectiousness and behavior trade-offs and transmission potential for influenza," 2019/6/10-13, Princeton, NJ.

- "Analyzing the association between inoculum dose and Norovirus infection outcomes," 2019/5/20-21, MIDAS network meeting, Bethesda, MD
- "Exploring the impact of inoculum dose on host immunity and morbidity to inform model-based vaccine design," Symposium on host responses to respiratory pathogens, 4/24-4/25/2018, Athens, GA
- "Using Machine Learning to determine variables that predict prolonged coughing of tuberculosis patients," 2018 Southern Data Science Conference, 4/13 – 4/14/2018, Atlanta, GA
- "A computational analysis of avian influenza virus persistence factors," 2017 Georgia Scientific Computing Symposium, 2/25/2017, Athens, GA
- "Tuberculosis Superspreaders: Duration of cough as a proxy for transmission," 6th Southeastern Mycobacteria Meeting, 2/3 – 2/5/2017, Athens, GA
- "A comprehensive analysis of avian influenza virus persistence factors," Options IX for the control of influenza, 8/24 – 8/28/2016, Chicago, IL
- "A multi-scale analysis of influenza A virus fitness trade-offs due to temperature-dependent virus persistence," 5/21/2013, 11th Annual Conference on Ecology and Evolution of Infectious Diseases, State College, PA
- "Cooperation and competition determine CD8 T-cell immunodominance hierarchies", Swine Origin H1N1 Virus: The First Pandemic of the 21st Century, 4/18 - 4/20/2010, Atlanta, GA
- "Cooperation and competition determine CD8 T-cell immunodominance hierarchies", 1st International Workshop in Systems Approaches in Immunology, 1/10 – 1/12/2010, Santa Fe, NM
- "A simple mathematical model helps explain immunodominance of CD8 T-cells in influenza A infections", Conference on Theoretical Biology and Biomathematics, 6/22 – 6/27/2008, Barga, Italy
- "Influenza resistant to neuraminidase inhibitors: the danger of its generation and spread, "Viral Paradigms: Molecules, Populations, Ecosystems and Infectious Disease, 1/14-1/16/2008, Atlanta, GA
- "Influenza resistant to neuraminidase inhibitors: the danger of its generation and spread," Conference on Immunobiology of Influenza Virus Infection: Approaches for an Emerging Zoonotic Disease, 7/29/2007 - 7/31/2007, Athens, GA

CONFERENCE AND WORKSHOP PARTICIPATION

- NAS workshop on Vaccine Hesitancy, 2020/08/17-20, Washington, DC (virtual)
- Collaborative Influenza Vaccine Innovation Centers (CIVICs) Annual Meeting, 2020/08/180-19, Rockville, MD (virtual)
- MSRI Mathematical Models for Prediction and Control of Epidemics, 2020/08/12-15, Berkeley, CA (virtual)
- IPAM Mathematical Models in Understanding COVID-19, 2020/08/10-12, Los Angeles, CA (virtual)
- 3rd Advancing Informatics in Industry and Government Conference, 11/22/2019, Athens, GA
- 4th Workshop on Virus Dynamics, 2019/10/21-23, Paris, France.
- 2019 Georgia Bio Innovation Summit, 2019/10/08, Atlanta, GA
- 2019 Ecology and Evolution of Infectious Diseases, 6/10 – 6/13, Princeton, NJ
- 2019 Southern Data Science Conference, 4/11 – 4/12/2019, Atlanta, GA
- 2019 q-BIO Conference, 2019/2/18-22, Oahu, HI
- Bat One Health Research Network 1st Annual Workshop, 2018/11/8-9, Vienna, Austria
- Innovation in Teaching Conference, 10/19/2018, Athens, GA
- 7th Annual State of Public Health, 10/18/2018, Athens, GA
- Preparing for the next pandemic: lessons from the 2017-18 flu season, 9/27/2018, Atlanta, GA
- Health Connect South 2018 Conference, 9/27/2018, Atlanta, GA
- 2018 Ecology and Evolution of Infectious Diseases, 5/29 – 6/2, Glasgow, UK
- Symposium on host responses to respiratory pathogens, 4/24-4/25, Athens, GA
- 2018 Southern Data Science Conference, 4/13 – 4/14/2018, Atlanta, GA
- Population Biology of Vector-Borne diseases Symposium, 2/24/2018, Athens, GA
- Advancing Informatics in Industry and Government Conference, 12/1/2017, Athens, GA

- Innovation in Teaching Conference 2017, 10/20/2017, Athens, GA
- 2017 Georgia Scientific Computing Symposium, 2/25/2017, Athens, GA
- Georgia Informatics Symposium, 10/11/2016, Athens, GA
- Options IX for the control of influenza, 8/24 – 8/28/2016, Chicago, IL
- Modeling Immunity for Biodefense Planning Meeting, 10/1/2015, Rockville, MD
- Gateway to Interdisciplinary Graduate Studies Conference, 10/9/2015, USC Beaufort, SC*
- 13th annual Conference on Ecology and Evolution of Infectious Diseases, 5/26-29/2015, Athens, GA
- RAPIDD Workshop "Modeling and Predicting Influenza Phenotypes," 3/19-3/21/2015, Cambridge, UK
- TB Modeling & Analysis Consortium: Post-2015 WHO Global TB Targets Meeting II, 10/6-10/10/2014, London, UK
- TB Modeling & Analysis Consortium: Post-2015 WHO Global TB Targets, 6/1 - 6/5/2014, Seattle, WA
- From Within Host Dynamics to the Epidemiology of Infectious Disease, 4/7-4/11/2014, Mathematical Biosciences Institute, Columbus, Ohio
- 1st International Workshop on Virus Dynamics, 7/15 – 7/16/2013, Frankfurt, Germany
- 11th Annual Conference on Ecology & Evolution of Infectious Diseases, 5/20 - 5/23/2013, State College, PA
- State-of-the-Art Next Generation Sequence Symposium, 4/8-4/9/2013, Athens, GA
- One Health Symposium: Breaking Barriers & Crossing Scales, 3/21-3/23/2013, Athens, GA
- Annual American Society of Microbiology Southeastern Branch Meeting "Ecology of Infectious Disease," 10/25-10/27/2012, Athens, GA
- 2012 Spring Symposium & Workshop "Solving Important Biological Problems Through Modeling," 4/2/2012, Institute of Bioinformatics, UGA, Athens, GA
- Evolution and Spread of Disease, 3/19-3/23/2012, Mathematical Biosciences Institute, Columbus, OH
- 2011 UGA Conference on Drug Discovery, 11/03/2011, Athens, GA
- Evolution of Infectious Diseases: Integrating Empirical Data and Modeling Approaches, NESCent Catalysis Meeting, 3/22-3/25/2011, Raleigh, NC
- RAPIDD workshop on Generation and Maintenance of Immune Memory: Immunological Models and Epidemiological Consequences, 3/7-3/8/2011, Seattle, WA
- Viral Dynamics and the Innate Immune Response to HCV and Influenza, 8/29-8/31/2010, Santa Fe, NM
- Summer 2010 Thematic Program on the Mathematics of Drug Resistance in Infectious Diseases, 7/19-7/30, Fields Institute, Toronto, Canada
- 10th International Conference on Computational Science, 5/31 - 6/2/2010, Amsterdam, Netherlands
- "Swine Origin H1N1 Virus: The First Pandemic of the 21st Century", 4/18 - 4/20/2010, Atlanta, GA
- 1st International Workshop in Systems Approaches in Immunology, 1/10 – 1/12/2010, Santa Fe, NM
- 2009 UGA Conference on Drug Discovery, 11/05/2009, Athens, GA
- Conference on Immunobiology and Pathogenesis of Influenza Infection, 7/26 - 7/28/2009, Athens, GA
- 7th Annual Conference on Ecology and Evolution of Infectious Diseases, 5/20 - 5/22/2009, Athens, GA
- Global Health Symposium 2009, "Social Determinants of Inequalities in Health II: Continuing the Global Conversation," 3/24-3/25/2009, Athens, GA
- Research Symposium in Honor of Rafi Ahmed's 60th Birthday, 11/13-11/14/2008, Atlanta, GA
- Gordon Conference on Theoretical Biology and Biomathematics, 6/22 – 6/27/2008, Barga, Italy
- 6th Annual Conference on Ecology and Evolution of Infectious Diseases, 6/05 - 6/07/2008, Fort Collins, CO
- Conference on Immunobiology and Pathogenesis of Influenza Infection, 6/01 - 6/03/2008, Atlanta, GA
- MIDAS Network Meeting, 05/06/2008, Atlanta, GA
- Viral Paradigms: Molecules, Populations, Ecosystems and Infectious Disease, 1/14-1/16/2008, Atlanta, GA
- Immunobiology of Influenza Virus Infection: Approaches for an Emerging Zoonotic Disease, 7/29 - 7/31/2007, Athens, GA
- Symposium on Vaccine-Induced Immunity, 3/22/2007, Atlanta, GA
- 4th Annual Conference on Ecology and Evolution of Infectious Diseases, 5/18 - 5/20/2006, State College, PA

- Institute for Advanced Study & Park City Mathematics Institute, Summer Conference on Mathematical Biology, 6/26 - 7/16/2005, Park City, UT
- 3rd Annual Workshop and Conference on Ecology and Evolution of Infectious Diseases, 5/16 - 5/21/2005, Fort Collins, CO
- MIDAS Consultation on Pandemic Influenza, 10/27 – 10/28/2004, Atlanta, GA
- American Association of Immunology Introductory Course in Immunology, 6/25 - 7/1/2004, Philadelphia, PA

Grant Activity

GRANTS - ACTIVE

- 10/2020 – 9/2022 Rates of and risk factors for colonization with ESBL-producing and carbapenem-resistant Enterobacteriaceae in the U.S. CDC BAA 75D301-20-R-67837. $680K. PI: Ottesen. My role: Co-I.
- 7/2020 – 6/2022 Preparing for the SARS-CoV2 vaccine: Modeling of transmission pathways, viral evolution, and vaccination strategies. NIAID supplement. $820K. PI Lopman. My role: UGA-PI ($268K).
- 6/2020 – 5/2025 Dynamics and evolution of immune responses to influenza. NIH U01, $2.7M, PI Rustom Antia, Emory U. My role: PI on UGA sub-contract ($302K).
- 9/2019 – 8/2026 Center for Influenza Vaccine Research for High-Risk Populations. NIH Contract 75N93019C00052. $130M. PI: Ross. My role: Co-I (Credit $9.1M/7%).
- 6/1/2018 – 5/31/2023 Integrating data streams with multi-scale modeling to guide norovirus vaccine decision-making. NIH R01, $1.5M, PI Lopman, Emory. My role: PI on UGA sub-contract ($250K).
- 4/2017 – 3/2022 Georgia Veterinary Scholar Summer Research program. NIH T35, PI Sanchez, UGA. My role: Mentor.
- 5/1/2017 – 4/31/2022 REU SITE: Population Biology of Infectious Diseases. NSF, $558K, PI Drake UGA. My role: Senior Personnel/Mentor.

GRANTS – UNDER REVIEW

- 12/2020 – 12/2027 Center for Influenza Disease and Emergence Research (CIDER). PI Tompkins. My role: Co-I.
- 10/2020 – 9/2025 Informing COVID-19 vaccine strategies through expert-advised simulation modeling NIAID R01. $4.5M. My role: PI.

GRANTS - COMPLETED

- 8/1/2018 – 6/31/2020 Development of a software tool for graphical construction and analysis of simulation models. UGA funding, PIs Handel and Hallow ($24K).
- 9/2015 – 8/2020 Interdisciplinary Disease Ecology Across Scales: from Byte to Benchtop to Biosphere. NSF NRT, $2.99M, PI Ezenwa, UGA. My role: Senior Personnel/Mentor.
- 4/2015 – 3/2020 Dynamics and evolution of immune responses to influenza". NIH U19AI117891, $8.7M, PI Rustom Antia, Emory U. My role: PI on UGA sub-contract ($592K).
- 4/2015 – 3/2020 Computational and Molecular Epidemiology Training in TB and HIV in Uganda. NIH D43 training grant, $1.4M, PI Whalen, UGA. My role: Co-I.
- 7/2014 – 6/2019 "Research Coordination Network - Infectious Disease Evolution Across Scales, "NSF $500K, PI Graham, Princeton. My role: Network Member.
- 7/2012 – 6/2017 "Community Transmission of M. tuberculosis in Urban Africa," NIH R01, PI Whalen, UGA. My role: 5% effort, 2015-2017.
- 7/2012 – 6/2015 "REU Site - Population Biology of Infectious Diseases." NSF, $283K, PI Drake, UGA. My role: Senior Personnel/Mentor.
- 7/2012 – 7/2017 "Georgia Veterinary Scholar Summer Research program." NIH T35, $259K, PI Sanchez, UGA. My role: Mentor.

- 9/2011 – 8/2013 "Quantifying and modeling influenza viral dynamics and host responses." NIH R56, $648K, PI Thomas, St. Jude. My role: PI on UGA sub-contract, $266K.
- 7/2011 – 6/2012 "Developing an agent-based model to study tuberculosis transmission and vaccination." UGA Faculty Research Grant, $11K. My role: PI.
- 5/2007 – 4/2012 "Quantitative studies of CD8 T-cell dynamics". NIH K25, $358K. My role: PI.

Research supervision and mentoring

MAIN MENTORING ACTIVITIES

Name	Dates	Level	Role
Isaac Fung	2009/08 - 2011/08	Postdoc	Main Advisor
Yang Ge	2018/08 - present	PhD	Main Advisor
Rachel Mercaldo	2018/08 - present	PhD	Main Advisor
Brian McKay	2015/08 - 2019/12	PhD	Main Advisor
Yan Li	2009/08 - 2013/12	PhD	Main Advisor
Nibiao Zheng	2009/08 - 2013/12	PhD	Main Advisor
John Rossow	2017/01 - 2017/12	DVM/MPH	Main Advisor
Ashland Roquemore	2016/08 - 2016/12	DVM/MPH	Main Advisor
Grace Vahey	2016/01 - 2016/12	DVM/MPH	Main Advisor
Scott Russell	2009/08 - 2013/12	MS	Main Advisor
Eliza Ali	2018/05 - 2018/08	MPH	Main Advisor
Rujin Geng	2017/08 - 2018/05	MPH	Main Advisor
Caitlin Ray	2017/01 - 2017/05	MPH	Main Advisor
Rachel Duckworth	2015/01 - 2015/08	MPH	Main Advisor
Lauren Lipcsei	2015/01 - 2015/05	MPH	Main Advisor
Lauren Roper	2015/01 - 2015/05	MPH	Main Advisor
Ashton Griffin	2014/08 - 2014/12	MPH	Main Advisor
Ashley Dyer	2013/08 - 2013/12	MPH	Main Advisor
Stephen Hammond	2013/01 - 2013/05	MPH	Main Advisor
Mai Nguyen	2013/01 - 2013/05	MPH	Main Advisor
Leslee Smith	2013/01 - 2013/05	MPH	Main Advisor
Allyson Treat	2013/01 - 2013/05	MPH	Main Advisor
Elandis Miller	2011/08 - 2011/12	MPH	Main Advisor
Christal Hembree	2011/01 - 2011/05	MPH	Main Advisor
Cody Dailey	2019/09 - present	PhD	Committee Member
Joseph Hicks	2018/11 - 2019/05	PhD	Committee Member
Allan Nkwata	2018/01 - present	PhD	Committee Member
Ronald Galiwango	2016/08 - 2019/12	PhD	Committee Member
Ariella Perry	2015/08 - 2018/05	PhD	Committee Member
Leo Martinez	2013/08 - 2017/12	PhD	Committee Member

Name	Dates	Level	Role
Yan Zhen	2012/01 - 2012/05	PhD	Research Mentor
Valerie Flint	2010/10 - 2010/12	PhD	Research Mentor
Stephanie Cooke	2009/10 - 2009/12	PhD	Research Mentor
Sina Solaimanpour	2015/05 - 2016/12	MS	Research Mentor
Alice Yang	2015/01 - 2015/05	MPH	Research Mentor
Kala Hubbard	2020/01 - 2020/05	Undergraduate	Research Mentor
Christie Chow	2019/08 - present	Undergraduate	Research Mentor
Nithin Reddy	2019/08 - present	Undergraduate	Research Mentor
Srisaimaneesh Yalamanchili	2019/01 - 2019/05	Undergraduate	Research Mentor
Vasiliy Mishin	2016/05 - 2017/12	Undergraduate	Research Mentor
Sang Lee	2014/10 - 2015/10	Undergraduate	Research Mentor
Theresa Devasia	2012/08 - 2016/05	Undergraduate	Research Mentor
Victoria Akin	2009/05 - 2012/08	Undergraduate	Research Mentor
Aaron Galton	2015/07 - 2015/05	DVM	Research Mentor
Allison Roebling	2012/04 - 2020/05	DVM	Research Mentor
Wesley Billings	2019/05 - 2019/08	Undergraduate	REU Mentor
Simran Budhwar	2019/05 - 2019/08	Undergraduate	REU Mentor
Wei-En Lu	2018/05 - 2018/08	Undergraduate	REU Mentor
Annaliese Wieler	2017/05 - 2017/08	Undergraduate	REU Mentor
Joseph Taylor	2015/05 - 2015/08	Undergraduate	REU Mentor
Kylie Balotin	2014/05 - 2014/08	Undergraduate	REU Mentor
Alexander Becker	2013/05 - 2013/08	Undergraduate	REU Mentor
Gloria Kang	2014/08 - 2018/06	PhD	External Evaluator
Nargesalsadat Dorratoltaj	2012/08 - 2016/06	PhD	External Evaluator

OTHER STUDENT MENTORING

- Academic mentoring of >50 Master of Public Health (MPH) students
- PhD and MS student mentoring as part of graduate coordinator role
- Nominated for the 2012 Graduate School Outstanding Mentoring Award

Teaching Activity

CLASSES TAUGHT AT THE UNIVERSITY OF GEORGIA

Teaching Load

- 11/2016 – present: 1 course per semester
- 05/2012 – 11/2016: 2 courses per semester
- 01/2009 – 04/2012: 1 course per semester

I have regularly bought out teaching through student mentoring credit hour productions and grant funding. After buyouts, my annual teaching has been higher than my required load for almost every year.

Overview Table

Main courses only, research/mentoring courses not listed. Rating based on courses for which it was available.

Course Name	**Dates taught** (F = fall, S = spring, SU= summer)	**Average rating (out of 5)**
Modern Applied Data Analysis, BIOS 8060(E)	SU15, S17, F19	4.1
Dynamical Systems Approach to Infectious Disease Epi, EPID 8510E	F16, F17, F20	4.6
Modeling Infectious Diseases, EPID/BIOS 8515	F09, F10, F11, F12, F13, F14, F15, F18	4.4
Analysis of Infectious Disease Data EPID/BIOS 8560	SU14	4.7
Doctoral Seminar, EPID 9100	F16, S17, F17, S18, F18, S19, F19, S20, F20, S21	4.6
MPH Seminar, EPID 7100	F09, S10, F10, S11, F11, S12, F12, S13, F13, S14, F14, S15, F15, S16, F16, S17, F17, S18, F18, F19, F20	4.5
Introduction to Epidemiology, EPID 7010	S14, S15	4.0
Fundamentals of Epidemiology, EPID 4070	S10, S11	4.1
First-Year Odyssey Seminar, FYOS1001	S13, S15	NA

Full Listing

Where available and applicable, student ratings for course are given.

Fall 2021:

- EPID 8510E, Dynamical Systems Approach to Infectious Disease Epi, 3 credit online, 28 students,
- EPID 7100, Current Topics in Epidemiology, 1 credit seminar series, 31 students,
- EPID 9100, Doctoral Seminar, 1 credit seminar series, 13 students
- EPID 9000, Doctoral Research, 31 total credit hours, 2 students

Summer 2020:

- EPID 9000, Doctoral Research, 27 total credit hours, 2 students

Spring 2020:

- EPID 9100, Doctoral Seminar, 1 credit seminar series, 9 students
- EPID 9000, Doctoral Research, 30 total credit hours, 2 students

Fall 2019:

- EPID/BIOS 8060E, Modern Applied Data Analysis, 3 credit course, 18 students, 3.68/5
- EPID 9100, Doctoral Seminar, 1 credit seminar series, 17 students
- EPID 7100, Current Topics in Epidemiology, 1 credit seminar series, 20 students, 4.54/5
- EPID 9300, Doctoral Dissertation, 1 total credit hours, 1 student
- EPID 9000, Doctoral Research, 23 total credit hours, 3 students
- EPID 8910, Problems in Epidemiology, 1 total credit hours, 1 student
- EPID 4960R, Faculty-Mentored Undergraduate Research I, 7 total credit hours, 3 students

Summer 2019:
- EPID 9000, Doctoral Research, 39 total credit hours, 3 students
- EPID 7005, Graduate Student Seminar, 3 total credit hours, 1 student

Spring 2019:
- EPID 9100, Doctoral Seminar, 1 credit seminar series, 8 students, NA
- EPID 9000, Doctoral Research, 19 total credit hours, 3 students
- EPID 9300, Doctoral Dissertation, 3 total credit hours, 1 student
- EPID 8910, Special Topics in Epidemiology, 5 total credit hours, 3 students
- EPID 7005, Graduate Student Seminar, 6 total credit hours, 2 students
- EPID 4960H, Honors Research, 2 total credit hours, 1 student
- PBHL 7800, MPH capstone, 3 total credit hours, 1 student

Fall 2018:
- EPID/ECOL/IDIS 8515, Modeling Infectious Diseases, 4 credit course, 11 students, 4.38/5
- EPID 7100, Current Topics in Epidemiology, 1 credit seminar series, 13 students, 4.23/5
- EPID 9100, Doctoral Seminar, 1 credit seminar series, 12 students, 4.13/5
- EPID 7005, Graduate Student Seminar, 6 total credit hours, 2 students
- EPID 9000, Doctoral Research, 10 total credit hours, 2 students

Summer 2018:
- EPID 7005, Graduate Student Seminar, 3 total credit hours, 1 student
- EPID 9000, Doctoral Research, 30 total credit hours, 2 students
- PBHL 7800, (MPH capstone), 3 total credit hours, 1 student
- PBHL 7560, (internship), 6 total credit hours, 1 student

Spring 2018:
- EPID 7100, Current Topics in Epidemiology, 1 credit seminar series, 23 students, 4.26/5
- EPID 9100, Doctoral Seminar, 1 credit seminar series, 7 students, NA
- EPID 7005, Graduate Student Seminar, 6 total credit hours, 2 students
- EPID 9000, Doctoral Research, 18 total credit hours, 1 student
- PBHL 7800, MPH capstone, 3 total credit hours, 1 student

Fall 2017:
- EPID 8510E, Dynamical Systems Approach to Infectious Disease Epi, 3 credit online, 18 students, 4.4/5
- EPID 7100, Current Topics in Epidemiology, 1 credit seminar series, 18 students, 4.18/5
- EPID 9100, Doctoral Seminar, 1 credit seminar series, 16 students, 4.61/5
- EPID 9000, Doctoral Research, 33 total credit hours,4 students
- PBHL 7800, MPH capstone, 6 total credit hours, 2 students
- EPID 4970H, Honors Research, 1 total credit hour, 1 student

Summer 2017:
- PBHL 7560, internship, 36 total credit hours, 6 students
- EPID 9000, Doctoral Research, 18 total credit hours,1 student
- PBHL 7800, MPH capstone, 3 total credit hours, 1 student

Spring 2017:
- EPID/BIOS 8060, Modern Applied Data Analysis, 3 credit course, 19 students, 4.18/5
- EPID 7100, Current Topics in Epidemiology, 1 credit seminar series, 23 students, 4.76/5
- EPID 9100, Doctoral Seminar, 1 credit seminar series, 8 students, 5/5
- EPID 4960H, Honors Research, 2 total credit hours, 1 student
- EPID 9000, Doctoral Research, 11 total credit hours, 1 student
- EPID 7000, Master Research, 2 total credit hours, 1 student

Fall 2016:
- EPID 8510E, Dynamical Systems Approach to Infectious Disease Epi, 3 credit online, 9 students, 4.8/5
- EPID 7100, Current Topics in Epidemiology, 1 credit seminar series, 21 students, 4.75/5
- EPID 9100, Doctoral Seminar, 1 credit seminar series, 8 students, 4.74/5
- EPID 8030, PhD Teaching Practicum, 3 credit course, 2 students
- EPID 7000, Masters Research, 1 total credit hours, 1 student
- EPID 7005, Graduate Student Seminar, 3 total credit hours, 1 student
- EPID 9000, Doctoral Research, 1 student
- PBHL 7560, (internship), 6 total credit hours, 1 student
- PBHL 7800, (MPH capstone), 6 total credit hours, 2 students

Summer 2016:
- PBHL 7560, (internship), 30 total credit hours, 5 students
- EPID 9000, Doctoral Research, 18 total credit hours, 1 student
- PBHL 7800, (MPH capstone), 3 total credit hours, 1 student

Spring 2016:
- EPID 7100, Current Topics in Epidemiology, 1 credit seminar series, 16 students, 4.44/5
- PBHL 7560, (internship), 6 total credit hours, 1 student
- EPID 9000, Doctoral Research, 5 total credit hours, 2 students

Fall 2015:
- EPID/ECOL/IDIS 8515, Modeling Infectious Diseases, 4 credit course, 7 students, 4.23/5
- EPID 7100, Current Topics in Epidemiology, 1 credit seminar series, 13 students, 4.73/5
- EPID 9000, Doctoral Research, 1 total credit hour, 1 student
- EPID 9005, Graduate Student Seminar, 3 total credit hours, 1 student

Summer 2015:
- EPID 8060, Modern Applied Data Analysis, 3 credit course, 11 students, 4.46/5
- PBHL 7560, (internship), 12 total credit hours, 2 students
- PBHL 7800, (MPH capstone), 3 total credit hours, 1 student

Spring 2015:
- EPID 7100 Current Topics in Epidemiology, 1 credit seminar series, 4.46/5

- EPID 7010 Introduction to Epidemiology, 3 credit course, 3.63/5
- PBHL 7800 MPH capstone, 12 total credit hours, 4 students
- PBHL 7560 internship, 12 total credit hours, 2 students
- FYOS 1001 Computer Simulations of Infectious Diseases, 1 credit seminar, 14 students

Fall 2014:
- EPID/ECOL/IDIS 8515 Modeling Infectious Diseases, 4 credit course, 11 students, 4.63/5
- EPID 7100 Current Topics in Epidemiology, 1 credit seminar series, 25 students, 4.28/5
- EPID 8900 Special Topics in Epidemiology, 3 total credit hours, 1 student
- EPID 8910 Problems in Epidemiology, 3 credit hours, 1 student
- PBHL 7800 MPH capstone, 3 total credit hours, 1 student

Summer 2014:
- EPID 8560 Analysis of Infectious Disease Data, 3 credit course, 10 students, 4.73/5
- PBHL 7560 (internship), 6 total credit hours, 1 student

Spring 2014:
- EPID 7010 Introduction to Epidemiology, 3 credit course, 14 students, 4.3/5
- EPID 7100 Current Topics in Epidemiology, 1 credit seminar series, 37 students, 4.54/5

Fall 2013:
- EPID 7100 Current Topics in Epidemiology, 1 credit seminar series, 30 students, 4.21/5
- EPID/ECOL/IDIS 8515 Modeling Infectious Diseases, 4 credit course, 7 students, 4.43/5
- PBHL 7800 (MPH capstone), 3 total credit hours, 1 student
- BINF 7300 (masters research), 4 total credit hours, 1 student
- BINF 9000 (doctoral research), 5 total credit hours, 1 student
- BINF 9300 (doctoral research), 30 total credit hours, 2 students

Summer 2013:
- BINF 9300 doctoral research, 36 total credit hours, 2 students
- PBHL 7560 internship, 18 total credit hours, 3 students
- EPID 7005, 3 credit hours, 1 student

Spring 2013:
- EPID 7100 Current Topics in Epidemiology, 1 credit seminar series, 19 students, 4.78/5
- PBHL 7560 (internship), 24 total credit hours, 4 students
- PBHL 7800 (MPH capstone), 9 total credit hours, 3 students
- BINF 9300 (doctoral research), 29 total credit hours, 2 students
- BINF 9000 (doctoral research), 5 total credit hours, 1 students
- BINF 7300 (masters research), 4 total credit hours, 1 student
- EPID 7005, 9 total credit hours, 1 student
- FYOS 1001 Computer Simulations of Infectious Diseases, 1 credit course, 12 students

Fall 2012:
- EPID 7100 Current Topics in Epidemiology, 1 credit seminar series, 34 students, 4.51/5
- EPID 7010 Introduction to Epidemiology, 3 credit course, 47 students, 3.6/5
- EPID/ECOL/IDIS 8515 Modeling Infectious Diseases, 4 credit course, 13 students, 3.73/5
- BINF 9300 (doctoral research), 31 total credit hours, 2 students
- BINF 7300 (masters research), 4 total credit hours, 1 student

- PBHL 7560 (internship), 6 total credit hours, 1 student

Summer 2012:
- BINF 9000 (doctoral research), 39 total credit hours, 3 students
- BINF 9300 (doctoral research), 9 total credit hours, 1 student

Spring 2012:
- EPID 7100 Current Topics in Epidemiology, 1 credit seminar series, 28 students, 4.33/5
- EPID 8910 (directed study), 3 total credit hours, 1 student
- BINF 9000 (doctoral research), 51 total credit hours, 3 students

Fall 2011:
- EPID/ECOL/IDIS 8515 Modeling Infectious Diseases, 4 credit course, 11 students, 4.34/5
- EPID 7100 Current Topics in Epidemiology, 1 credit seminar series, 33 students, 4.49/5
- FYOS 1001 Computer Simulations of Infectious Diseases, 1 credit course, 10 students
- PBHL 7800 (MPH capstone), 4 total credit hours, 1 student
- BINF 9000 doctoral research, 42 total credit hours, 4 students

Summer 2011:
- BINF 9000 doctoral research, 47 total credit hours, 4 students

Spring 2011:
- EPID 4070 Fundamentals of Epidemiology, 3 credit course, 64 students, 4.14/5
- EPID 7100 Current Topics in Epidemiology, 1 credit seminar series, 39 students, 4.28/5
- EPID 3900 Special Topics in Epidemiology (study abroad 12/15/10 – 1/5/11), 3 credits, 32 students
- EPID 8900 Special Topics in Epidemiology (study abroad 12/15/10 – 1/5/11), 3 credits, 6 students
- PBHL 7800 MPH capstone, 3 total credit hours, 1 student
- PBHL 7560 MPH internship, 12 total credit hours, 2 students
- BINF 9000 doctoral research, 22 total credit hours, 3 students

Fall 2010:
- EPID/ECOL/IDIS 8515 Modeling Infectious Diseases, 4 credit course, 9 students, 4.75/5
- EPID 7100 Current Topics in Epidemiology, 1 credit seminar series, 29 students, 4.49/5
- BINF 9000 doctoral research, 22 total credit hours, 3 students

Summer 2010:
- BINF 9000 doctoral research, 40 total credit hours, 4 students
- PBHL 7560 internship, 12 total credit hours, 2 students

Spring 2010:
- EPID 4070 Fundamentals of Epidemiology, 3 credit course, 102 students, 4.00/5
- EPID 7100 Current Topics in Epidemiology, 1 credit seminar series, 8 students, 3.87/5
- EPID 7005 (graduate student seminar), 1 course credit hour, 3 total credits, 1 student
- BINF 7000 (masters research), 5 total credits, 1 student
- BINF 9300 (doctoral research), 7 total credits, 1 student

Fall 2009:
- EPID/ECOL/IDIS 8515 Modeling Infectious Diseases, 4 credits, co-taught with Dr. Park, 7 students, 4.58/5
- EPID 7100 Current Topics in Epidemiology, 1 credit seminar series, 18 students, 4.48/5

- BINF 7000 (masters research), 5 total credit hours, 1 student
- BINF 9000 (doctoral research), 2 total credit hours, 1 student

CLASSES TAUGHT AT OTHER INSTITUTIONS

- Infectious Disease Dynamics (EPI 590R), 2 credit short-term, intensive course, January 2013, Emory University Rollins School of Public Health, 33 students
- An Introduction to Infectious Disease Modeling (EPI 590R), 2 credit short-term, intensive course, January 2012, Emory University Rollins School of Public Health, 21 students

WORKSHOPS TAUGHT

- Workshop on "Introduction to Infectious Disease Modeling," Zhejiang CDC, 2019/7/10-11, Hangzhou, China, 40 students.
- Workshop on "Infectious Diseases, Immunology, and Within-Host Models," 11th Summer Institute in Statistics and Modeling in Infectious Diseases, 7/17 – 7/19/2019, University of Washington, 15 students.
- Workshop on "Infectious Diseases, Immunology, and Within-Host Models," 10th Summer Institute in Statistics and Modeling in Infectious Diseases, 7/11 – 7/13/2018, University of Washington, 30 students.
- Workshop on "Infectious Diseases, Immunology, and Within-Host Models," 9th Summer Institute in Statistics and Modeling in Infectious Diseases, 7/24 – 7/26/2017, University of Washington, 16 students.
- Workshop on "Modeling Immunology," MITII Center Summer School on Modeling Immunology, 5/21 – 5/24/2017, Emory University, 25 students.
- Workshop on "Infectious Diseases, Immunology, and Within-Host Models," 8th Summer Institute in Statistics and Modeling in Infectious Diseases, 7/13 – 7/15/2016, University of Washington, 20 students
- Workshop on "Infectious Diseases, Immunology, and Within-Host Models," 7th Summer Institute in Statistics and Modeling in Infectious Diseases, 7/8 – 7/10/2015, University of Washington, 22 students
- Workshop on "Infectious Diseases, Immunology, and Within-Host Models," 6th Summer Institute in Statistics and Modeling in Infectious Diseases, 7/9 – 7/11/2014, University of Washington, 28 students
- Workshop on "Infectious Diseases, Immunology, and Within-Host Models," 5th Summer Institute in Statistics and Modeling in Infectious Diseases, 7/10 – 7/12/2013, University of Washington, 21 students
- Workshop on "Infectious Diseases, Immunology, and Within-Host Models," 4th Summer Institute in Statistics and Modeling in Infectious Diseases, 7/9 – 7/11/2012, University of Washington, 27 students
- Workshop on "Infectious Diseases, Immunology, and Within-Host Models," 3rd Summer Institute in Statistics and Modeling in Infectious Diseases, 6/13 – 6/15/2011, University of Washington, 31 students
- Workshop on "Infectious Diseases, Immunology, and Within-Host Models," 2nd Summer Institute in Statistics and Modeling in Infectious Diseases, 6/16 – 6/18/2010, University of Washington, 18 students
- Workshop on "Infectious Diseases, Immunology, and Within-Host Models," 1st Summer Institute in Statistics and Modeling in Infectious Diseases, 6/14-6/16/2009, University of Washington, 7 students

GUEST LECTURES

- "Introduction to infectious disease modeling" for FYOS 1001 (11/2020)
- "Introduction to infectious disease modeling" for FYOS 1001 (9/2019)
- "Introduction to infectious disease modeling" for HPAM 4410 (3/2017)
- "Multi-scale modeling" for ECOL 8520 (3/2017)
- "Likelihood and other Objective Functions" for EPID 8010 (9/2015)
- "Causality" for EPID 7010 (9/2015)
- "Introduction to the Likelihood" for EPID 8010 (9/2014)
- "Introduction to the Likelihood" for EPID 8010 (8/2013)
- "Introduction to within-host Infectious Disease modeling" for ECOL 4150/6150 (3 times, spring 2010-2012)
- "Descriptive Epidemiology" for EPID 7010 (1/2012)
- "Introduction to Infectious Disease Modeling" for FRES 1010 (2/2010)

- "Introduction to Infectious Disease Modeling" for EPID 8500 (10/2009)

Service Activity

Service to the profession

PROFESSIONAL AFFILIATIONS
- American Society for Microbiology, 5/2012 – 12/2017
- American Association of Immunologists, 1/2019 – present
- American Association for the Advancement of Science, 1/2018 – present
- Delta Omega Honor Society, 5/2017 – present

EDITORIAL RESPONSIBILITIES
- Guest Editor, PLoS Computational Biology, 2018
- Guest Editor, PLoS Computational Biology, 2016
- Guest Editor, PLoS Computational Biology, 2015
- Guest Editor for Research Topic "Computational Model Development of within-host Respiratory Tract Infections" in Frontiers in Microbiology, 2013 – 2014

REVIEWER FOR JOURNALS
- Approximately 5-10 reviews per year for various journals, including American Journal of Epidemiology, American Naturalist, Antiviral Therapy, BMC Public Health, Chaos, Ecology Letters, Emerging Infectious Diseases, Journal of the Royal Society Interface, Journal of Theoretical Biology, Journal of Virology, Nature, Nonlinear Analysis: Modelling and Control, PLoS Computational Biology, PLoS Medicine, PLoS One, PLoS Pathogens, Philosophical Transactions of the Royal Society B, Proceedings of the Royal Society B, Risk Analysis, Science, Science Advances, Technology and Innovation, Theoretical Population Biology, The Lancet, Trends in Immunology, Vaccine, WIRE Systems Biology and Medicine

REVIEWER FOR BOOK MANUSCRIPTS
- Book proposal review for Springer Science and Cambridge University Press

REVIEWER FOR THESE GRANT ORGANIZATIONS
- National Institutes of Health (NIH), Medical Research Council (MRC, United Kingdom), National Science Foundation (NSF), Biotechnology and Biological Sciences Research Council (BBSRC, United Kingdom), Bavaria Science Foundation (BSF, Germany), Anne McLaren Fellowships, (University of Nottingham, UK), University of Georgia, University of Liverpool, CDC (internal grants)

CONFERENCE SERVICE
- Co-Organizer, 2019 Pudong CDC Emerging Infectious Diseases & One Health Workshop, 10/19 – 11/2/2019, Athens/Atlanta, GA
- Co-Organizer, 2018 Pudong CDC Emerging Infectious Diseases & One Health Workshop, 1/12 – 1/26/2019, Athens/Atlanta, GA
- Co-Organizer, 2017 Emerging Infectious Diseases, and One Health Workshop, 10/15 – 10/28/2019, Athens/Atlanta, GA
- Co-Organizer, 2017 MITII Summer School and Symposium, 5/21 – 5/26/2017, Atlanta, GA.
- Member, steering committee, 13th annual Conference on Ecology and Evolution of Infectious Diseases, 5/26-29/2015, Athens, GA
- Chair of the session on "Computational tools and theoretical aspects," 1st Workshop on Virus Dynamics, 7/15 – 7/16/2013, Frankfurt, Germany
- Scientific Program Committee, One Health Symposium, University of Georgia, 3/21-23/2013

- Chair of session on "Modeling infectious disease " at the American Society of Microbiology Southeastern Branch Meeting "Ecology of Infectious Disease," 10/25-10/27/2012, Athens, GA
- Scientific Program Committee for Computational Immunology, Immunoinformatics, Theoretical Immunology, & Systems Immunology, 11th International Conference on Artificial Immune Systems, 8/28-8/31/2012, Taormina, Italy
- Scientific Program Committee, 2012 Spring Symposium & Workshop "Solving important biological problems through modeling," 4/2/2012, Institute of Bioinformatics, University of Georgia

OTHER PROFESSIONAL SERVICE
- 11/2014 Consulting on Ebola risk for a financial services company

Service at UGA

SERVICE AT UGA – DEPARTMENT LEVEL
- Associate Department Chair, 11/2016 – present
- Graduate Coordinator, 7/2016 – present
- Program Director, Infectious Disease Epidemiology Certificate, Fall 2017 – present
- Development of Graduate Certificate Program in Infectious Disease Epidemiology, 2015-2016
- Chair of multiple departmental search committees (8 hires), 2015 – present
  - 2018/2019: 1 TT position (Tate)
  - 2017/2018: 2 TT positions, 1 lecturer position (Bahl, Knight, and McKay)
  - 2016/2017: 1 TT position (candidate accepted the offer but had to withdraw for personal reasons)
  - 2015/2016: 2 TT positions, 1 lecturer position (Schwartzendruber, Li, Allegra)
- Member of multiple department and college search committees, 2010 – present
- Curriculum Committee, 2010 – 2018
- Admission Committee, 2010 – present

SERVICE AT UGA – COLLEGE LEVEL
- Strategic Planning Committee, Fall 2019 – present
- Research Advisory Committee, Fall 2016 – present
- DVM-MPH Advisory Committee, Fall 2014 – present
- College of Public Health DrPH Committee, 2013 – 2014
- Member of multiple 3rd-year review panels for colleagues within various departments in our college
- Search committee member, CPH IT Manager, 2019-2020

SERVICE AT UGA – UNIVERSITY LEVEL
- Member of the UGA 2025 IT Strategic Plan committee, 9/2019 - present
- Advisory Board, Center for the Ecology of Infectious Diseases, 8/2018 – present
- UGA Program Review and Assessment Committee, 8/2016 – 5/2017
- UGA Graduate Council, 8/2011 – 5/2014
- UGA Graduate Council, Program Review Committee, 8/2012 – 5/2014
- UGA Graduate Council, Admission and Retention Committee, 8/2011 – 7/2012
- UGA Graduate Council, Admission and Retention Committee, ad hoc member, 8/2012 – present
- Institute of Bioinformatics, Development Committee, 8/2011 – 7/2012
- Analysis of UGA Health Center data to help plan for the 2009 H1N1 pandemic, Winter 2009

OTHER ACTIVITIES
- Taught Freshmen Odyssey seminar, Fall 2011, Spring 2013, Spring 2015
- Taught EPID 3900/8900 (Special Topics in Epidemiology – Global Health) during study abroad winter break 2011/12 to 38 students

Administrative Activity

ASSOCIATE DEPARTMENT HEAD

- Serve as Associate Department Head since 11/2016.
- Led implementation of new MS and PhD programs, increasing the number of programs from 3 to 6.
- Manage faculty teaching assignments and teaching load.
- Helped grow departmental faculty by serving as the search committee chair on 5+ faculty searches.
- Revised and comprehensively updated a set of departmental documents, most notably the by-laws, which were approved by all faculty in 2017.
- In consultation with the department head, assign faculty members to committees.
- Plan and organize new departmental course offerings.
- Help with departmental budgeting for student assistantships.
- In 2019, helped our department successfully go through its 7-year review.
- In 2018, secured $15K UGA funding to upgrade departmental student computer lab.

GRADUATE COORDINATOR

- Serve as departmental Graduate Coordinator since 7/2016.
- Oversee all administrative aspects of departmental MS and PhD programs.
- Communicate with graduate school on all matters related to our graduate programs.
- Organize and lead annual graduate student recruitment.
- Serve as contact person for all MS and PhD students.
- Assign teaching assistants each semester.
- Implement Individual Development Plan with all PhD students.
- Train PhD students in various soft skills.

INFECTIOUS DISEASE EPIDEMIOLOGY CERTIFICATE DIRECTOR

- Developed and implemented graduate certificate in Infectious Disease Epidemiology (2017)
- Serve as director of certificate, overseeing all aspects of student involvement with the program

Outreach

MEDIA ENGAGEMENT

- 2020: Quoted in news outlets such as NY Times, Wired, The Daily Beast, and multiple regional outlets on different aspects of the COVID-19 pandemic.
- 3/10/2015: Press coverage in Medical Express on our 2015 Epidemiology & Infection paper on Norovirus infection duration.
- Quoted in several articles on national news outlet fivethirtyeight.com about Ebola outbreak modeling, 9/2014, 10/2014, 11/2014
- Prepared multimedia materials for colleague's (Dr. Whalen's) TED talk, 3/2013
- Public Health Impact TV Show on TB and modeling. Aired 1/2013.
- Quoted in an article about controversial H5N1 influenza research, Athens Banner Herald, 7/2/2012.

OTHER SERVICE & OUTREACH ACTIVITIES

- Mentor to Georgia Tech students as part of Georgia Tech's 'Mentor Jackets' Alumni mentoring program, 8/2016 – present.
- Expert on Panel Discussion of "Influenza," hosted by UGA Chapter of Health Occupation Students of America, 3/14/2017

- Judge, 61st Georgia Science and Engineering Fair, 4/09, Athens, GA
- Judge, High School Science Fair, 1/2009, Centennial High School, Roswell, GA
- Judge, Intel International Science and Engineering Fair, 5/2008, Atlanta, GA

Ongoing Professional Development

TRAINING IN TEACHING

- 2018 Online Learning Fellow, UGA (development of EPID/BIOS 8060E)
- 2016 Online Learning Fellow, UGA (development of EPID 8510E)
- 2015 Center for Teaching and Learning Fellow for Innovative Teaching, UGA
- UGA Faculty Learning Community "Globalizing the Curriculum," 8/2010 – 5/2011

TRAINING IN RESEARCH

- 2014 Stanford/EdX Course "Introduction to Statistical Learning," Stanford U
- 2014 Coursera Course "Epidemiology: The Basic Science of Public Health," UNC
- 2014 Coursera Course "The Data Scientist's Toolbox," Johns Hopkins U
- 2014 Coursera Course "R Programming," Johns Hopkins U
- 2014 Coursera Course "Getting and Cleaning Data," Johns Hopkins U
- 2014 Coursera Course "Practical Machine Learning," Johns Hopkins U
- 2013 Coursera Course "Exploratory Data Analysis," Johns Hopkins U
- 2013 Coursera Course "Regression Models," Johns Hopkins U
- 2013 Coursera Course "Reproducible Research," Johns Hopkins U
- 2013 Coursera Course "Epidemics - the Dynamics of Infectious Diseases," Penn State U
- 2013 Coursera Course "A Beginner's Guide to Irrational Behavior," Duke U
- 2012 Coursera Course "Model Thinking," U of Michigan

OTHER TRAINING

- Aspire Leadership training, 8/2018 – 5/2019, UGA.
- Leadership Summer Institute, 7/11 – 7/14/2017, UGA.