Declaration of Eric T. Lofgren, MSPH PhD

I. Background and Qualifications

1. My name is Eric T. Lofgren and I am employed as an Assistant Professor at Washington State University in the Paul G. Allen School for Global Animal Health. My research focuses on the epidemiology of infectious diseases, with a focus on healthcare-associated and emerging pathogens.

2. I have worked in infectious disease research for the past fifteen years and hold both MS and PhD-degrees in Epidemiology from the University of North Carolina at Chapel Hill.

3. I was involved in the response to the 2014 West African Ebola epidemic as well as the initial outbreak of Middle East Respiratory Syndrome (MERS), a novel coronavirus similar to the one responsible for COVID-19. This included leading the creation of a position paper on the role of modeling in public health response and working closely with federal agencies including the Defense Threat Reduction Agency (DTRA) and the Biomedical Advanced Research and Development Authority (BARDA). At present, my research group is one of five in the nation funded by the Centers for Disease Control and Prevention (CDC) to model the spread of healthcare-associated infections, and we are actively working on COVID-19 related research in a number of settings.

4. My C.V., attached as **Exhibit A**, includes a full list of my honors, experience, and publications.

5. I have not previously testified as an expert in a trial or by deposition. I submitted two declarations in support of the plaintiffs in *Sanchez v. Dallas County*, 20-cv-832 (N.D. Tex.) related to the urgent issues surrounding COVID-19 in the Dallas County Jail.

II. Opinion

6. As an expert in the epidemiology of infectious diseases, it is my opinion that in-person competency evaluations present a substantial health risk to all participants due to the ongoing COVID-19 epidemic.

7. It is also my opinion that the common steps to reduce the transmission of COVID-19, such as maintaining six-foot separation between individuals and the wearing of cloth masks are likely insufficient to prevent transmission during the sustained levels of contact that might be expected during the evaluation.

8. Further, it is my opinion that Mr. Madison's underlying health conditions place him at extreme risk of death or severe disease requiring prolonged intensive care should he become infected with COVID-19.

III. Risk of COVID-19 Transmission in Florida and Orange County

9. As of July 7th, there are an increasing number of new cases of COVID-19 in the state, averaging 8127 confirmed cases per day in the state over the last two weeks. Orange County is experiencing similarly elevated levels of COVID-19 transmission, averaging 643 cases per day[1].

10. Orange County's epidemic is increasing at a faster rate than the state-wide rate, comprising 7.9% of the state's new confirmed cases while representing only 6.5% of the state's population[2][3].

11. This pattern of cases is consistent with an ongoing and uncontrolled epidemic of COVID-19 both in the state and Orange County specifically.

12. Model-based forecasts of COVID-19 for Florida overall[4], as well as the Orlando-Kissimmee-Sanford metro area[5] do not show a substantial predicted decrease in the number of COVID-19 cases for the foreseeable future.

13. While long term forecasts are difficult, it is likely that there will be substantial transmission of COVID-19 in Orange County through this Summer and into early Fall.

14. 4,232 cases of COVID-19 have been reported statewide in correctional facility staff and residents[6], and there are reports of 14 confirmed infections among inmates and 58 confirmed cases among staff members in the Orange County Jail[7]. These numbers, combined with ongoing community transmission, are more than sufficient to result in a significant number of cases of COVID-19 arising within the corrections system, including transmission in jails, during transport and processing, and during court appearances and other in-person activities[8]. It is likely that all parties involved in an in-

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[1] Florida Department of Health. COVID-19: summary for Florida. http://ww11.doh.state.fl.us/comm/_partners/covid19_report_archive/county_reports_latest.pdf. Updated July 7,2020. Accessed July 9, 2020.

[2] U.S. Census Bureau. QuickFacts: Florida. https://www.census.gov/quickfacts/FL. Accessed July 9, 2020.

[3] Cubit. Florida Counties by Population. https://www.florida-demographics.com/counties_by_population. Accessed July 9, 2020.

[4] Centers for Disease Control and Prevention. COVID-19 State Forecasts. https://www.cdc.gov/coronavirus/2019-ncov/covid-data/pdf/Consolidated-Forecasts-2020-06-29.pdf. Updated June 30, 2020. Accessed July 9, 2020.

[5] University of Texas COVID-19 Modeling Consortium. COVID-19 Mortality Projections for US States and Metropolitan Areas. https://covid-19.tacc.utexas.edu/projections/. Updated July 6, 2020. Accessed July 9, 2020.

[6] See 1

[7] Orlando Sentinel. Orange-Osceola public defender didn't take coronavirus safety seriously, some employees say. https://www.orlandosentinel.com/coronavirus/os-ne-coronavirus-protocols-orange-osceola-public-defender-20200708-uiuvhbei4jgb5psporpl6e63xm-story.html. Published July 8, 2020. Accessed July 9, 2020.

[8] E. Lofgren, K. Lum, A. Horowitz, B. Madubuonwu, K. Myers, N. Fefferman (2020) The Epidemiological Implications of Incarceration Dynamics in Jails for Community, Corrections Officer and Incarcerated Population Risks from COVID-19. medRxiv Preprint. https://www.medrxiv.org/content/10.1101/2020.04.08.20058842v2.full.pdf

person evaluation of Mr. Madison's mental competence will be in settings where there is an elevated risk of COVID-19 transmission.

IV. Inadequacy of COVID-19 Protective Measures

15. The current common recommended precautions to reduce COVID-19 transmission in community settings are, broadly, the wearing of masks and maintaining a physical separation of six feet between individuals.

16. The current effectiveness of the cloth masks typically worn outside medical settings is currently unknown – while there is some evidence that they reduce transmission from droplets[9] most of the recommendations for the use of cloth masks are based on the possibility of reduced transmission compared to relatively modest potential of harm given the severity of the pandemic[10].

17. Masks are difficult to use correctly. They must be sufficiently thick as to block exhaled droplets, must be properly fitted and worn over both the nose and mouth continually.

18. Masks are difficult to remove correctly. Implicitly, if they are effective at filtering exhaled droplets containing virus, they are then contaminated with the very same viral particles. Removing a mask involves touching one's face near the eyes, nose and mouth, all potential sites of infection. Additionally, it is likely that one's hands will be contaminated while removing a facemask. These facts mean hand washing or the use of hand sanitizer is required both before and after the removal of the mask.

19. The improper use of masks – failing to cover the nose and mouth, pulling them down to talk, etc. and the identification of the use of masks or refusal to do so as a political statement are both widespread.

20. The imposition of the "6-foot rule" is primarily intended to prevent transmission via the same large droplets prevented by cloth masks. Smaller particles are capable of traveling further and remaining suspended in the air for long periods of time[11,12].

21. The maintaining of six feet of distance is primarily intended to prevent transmission from transient interactions (such as shopping) and may not be sufficient to prevent

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[9] A. Davies, KA Thompson, K. Giri, G. Kafatos, J. Walker, A. Bennett (2013) Testing the Efficacy of Homemade Masks: Would They Protect in an Influenza Pandemic?. Disaster Medicine and Public Health Preparedness. 7(4): 413-8

[10] C. Clase *et al.* (2020) Cloth Masks May Prevent Transmission of COVID-19: An Evidence-Based, Risk-Based Approach. Annals of Internal Medicine.

[11] Setti, L. *et al.* (2020) Airborne Transmission Route of COVID-19: Why 2 Meters/6 Feet of Inter-Personal Distance Could Not Be Enough. International Journal of Environmental Research and Public Health. 17(8): 2932

[12] Bahl, P. *et al.* (2020) Airborne or droplet precautions for health workers treating COVID-19?. The Journal of Infectious Diseases. Published ahead of print at: 10.1093/infdis/jiaa189

transmission due to long, sustained contact in close quarters in a room without purpose-built ventilation (i.e. most non-hospital settings).

22. Compounding these problems, transmission is more likely to occur during events requiring a large amount of vocalization or when speech is louder than normal[13] – a foreseeable circumstance during a mental competency evaluation.

V. Direct Risks to Mr. Madison

23. COVID-19 is a complex and multifaceted disease that impacts a number of different organ systems, with complications often involving the cardiovascular and renal systems.

24. The CDC lists the following underlying medical conditions that increase a person's risk of severe COVID-19 illness (i.e. hospitalization, admission to intensive care, requiring mechanical ventilation and/or death) with a level of evidence of "Strongest"[14]:

    i) Serious heart conditions such as heart failure, coronary artery disease, or cardiomyopathies
    ii) Chronic kidney disease

25. Additionally, the CDC lists the following underlying medical conditions that increase a person's risk of severe COVID-19 illness with a level of evidence of "Mixed"[15]:
    i) Cerebrovascular disease
    ii) Hypertension

26. Older adults are also more likely to experience severe or fatal COVID-19 infections. Being 63 years of age puts Mr. Madison at elevated risk beyond the risk arising from his existing underlying comorbidities[16].

27. There is limited evidence that neurologic conditions may additionally put one at higher risk of COVID-19[17].

28. Infection with COVID-19 may also present a risk of decline in mental health status. Among 117 Canadian survivors of Severe Acute Respiratory Syndrome (SARS), a

[13] Asadi, S. *et al*. (2019) Aerosol emission and superemission during human speech increase with voice loudness. Scientific Reports (9): 2348
[14] Centers for Disease Control and Prevention. Evidence used to update the list of underlying medical conditions that increase a person's risk of severe illness from COVID-19. https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/evidence-table.html. Updated June 25, 2020. Accessed July 9, 2020.
[15] See 13
[16] See 13
[17] See 13

disease related to COVID-19 also caused by a coronavirus, 33% reported a significant decrease in mental health[18].

29. Mr. Madison is disproportionately likely to require hospitalization if infected with COVID-19, and in patients with similar health profiles to his, death is not an uncommon outcome. In a CDC study, patients with underlying medical conditions required hospitalization 45.4% of the time and died 19.5% of the time – rates six and twelve times higher than those patients without underlying medical conditions respectively[19].

VI. Conclusion and Recommendation

30. It is my professional judgement, based on the work I have done on mitigation and containment strategies for infectious diseases, including COVID-19, that an in-person evaluation of Mr. Madison's mental competence taking place in Orange County represents a substantial risk to all participants of said evaluation, and will do so for the foreseeable future.

31. Efforts to mitigate that risk, such as the use of masks and 6-foot separation between individuals, may be inadequate for prolonged contact in an indoor space.

32. Mr. Madison, in particular, is at extremely elevated risk for a severe or fatal COVID-19 infection if exposed, due to his large number of underlying medical conditions.

33. It is my professional opinion that a delay in this evaluation is a reasonable and responsible action considering the ongoing public health crisis, which is unlikely to have reached its peak, let alone resolved, in Florida as a whole or Orange County in particular for several months.

I declare under penalty of perjury that the foregoing is true and correct. Executed on July 9, 2020.

Eric Lofgren MSPH, PhD

[18] C. Tansey, M. Louie, M. Loeb. (2007) One-Year Outcomes and Health Care Utilization in Survivors of Severe Acute Respiratory Syndrom. Archives of Internal Medicine. 167(12): 1312-1320.

[19] E. Stokes, L. Zambrano, K. Anderson, E. Marder, K. Raz, S. El Burai Felix, Y. Tie, K. Fullerton. (2020) Coronavirus Disease 2019 Case Surveillance – United States, January 22-May 30, 2020. Morbidity and Mortality Weekly Report. 69(24): 759-765

EXHIBIT A
Curriculum Vitae

Eric T. Lofgren, MSPH PhD

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Research Interests

Computational and mathematical modeling of infectious diseases, with a focus on hospital epidemiology as well as emerging, enteric, and respiratory pathogens.

Education

Virginia Tech, Virginia Bioinformatics Institute, Blacksburg, Virginia
Network Dynamics and Simulation Science Laboratory
Postdoctoral Associate: September 2013 to December 2015
Supervisor: Dr. Stephen Eubank

University of North Carolina at Chapel Hill, UNC Gillings School of Global Public Health, Chapel Hill, North Carolina
Department of Epidemiology
PhD: May 2013 Advisor: Dr. David Weber
MSPH: December 2009 Advisor: Dr. Jennifer Smith

Tufts University, Medford, Massachusetts
BA: January 2007
Major: Biology with Highest Thesis Honors

Professional Appointments

Assistant Professor, Washington State University, Paul G. Allen School for Global Animal Health. December 2015 to present.

Postdoctoral Research, Virginia Tech, Virginia Bioinformatics Institute, Network Dynamics and Simulation Science Lab. September 2013 to December 2015.

Research Assistant, UNC Gillings School of Global Public Health, Department of Epidemiology. January 2009 to May 2009 and August 2011 to May 2013.

Teaching Assistant, UNC Gillings School of Global Public Health, Department of Epidemiology. August to December 2008, August to May 2010.

Summer Lab Manager, Rutgers University, Center for Discrete Mathematics and Theoretical Computer Science. Fefferman Lab. May 2008 to August 2013.

Research Assistant, Tufts University, Initiative for the Modeling and Forecasting of Infectious Disease. August 2005 to July 2007.

Teaching Experience

Instructor, College of Veterinary Medicine, Washington State University. 2018 to present.

- VetPath 571: Methods of Analysis in Epidemiology
- VetClin 570: Infectious Disease Journal Club

Session Organizer, "A gentle introduction to mathematical modeling: Lessons from the living-dead", American Public Health Association Annual Meeting Learning Institute. November 2011, 2012 and 2014.

Teaching Assistant, UNC Gillings School of Global Public Health, Department of Epidemiology. 2008 – 2010.

- EPID 722: Epidemiologic Analysis of Time-to-Event Data
- EPID 750: Fundamentals of Public Health Surveillance

Publications

Calderwood, M.S., V.M. Deloney, D.A. Anderson, V. Cheng, S. Gohil, J.H. Kwon, L. Mody, E. Monsees, V.M. Vaughn, T.L. Wiemken, M.J. Ziegler, **E.T. Lofgren**. Policies and Practices of SHEA Research Network Hospitals during the COVID-19 Pandemic. *Infection Control and Hospital Epidemiology*. *In press.*

Slayton, R.B., J.J. O'Hagan, S. Barnes, S. Rhea, R. Hilscher, M. Rubin, **E. Lofgren**, B. Singh. 2020. Modeling Infectious Diseases in Healthcare Network Framework for Describing Multidrug Resistant Organism and Healthcare-Associated Infections Agent Based Modeling Methods. *Clinical Infectious Diseases*. *In press.*

Perkins, A.V., D.C. Sellon, J.M. Gay, **E.T. Lofgren**, D.A. Moore, L.P. Jones, M.A. Davis. 2020. Prevalence of methicillin-resistant *Staphylococcus pseudintermedius* on hand-contact and animal-contact surfaces in companion animal community hospitals. *Canadian Veterinary Journal*, 61(6): 613

Short, C.S., M.S. Mietchen, **E.T. Lofgren.** 2020. Assessing the Potential Impact of a Long-acting Skin Disinfectant in the Prevention of Methicillin-resistant *Staphylococcus aureus* Transmission. *Int. J. Environ. Res. Public Health*, 17(5): 1500

Suarez, G., O. Udiani, B. Allan, C. Price, S. Ryan, **E. Lofgren**, A. Coman, C. Stone, L. Gallos, N. Fefferman. 2020. A generic arboviral model framework for exploring trade-offs between vector control and environmental concerns*. Journal of Theoretical Biology*, 490: 110161

Chowdhury, A., **E.T. Lofgren**, R.W. Moehring, S. Broschat. 2020. Identifying Predictors of Antimicrobial Exposure in Hospitalized Patients Using a Machine Learning Approach. *Journal of Applied Microbiology*, 128(3): 688-96

Madhobi, K., M. Kamruzzaman, A. Kalyanaraman, **E. Lofgren**, R. Moehring, B. Krishnamoorthy. 2019. A Visual Analytics Framework for Analysis of Patient

Trajectories. Proc. *ACM Conference on Bioinformatics, Computational Biology and Health Informatics (ACM-BCB'19)*.

Herbert, S., **E.T. Lofgren**, K. Keyloun. 2019. Long-Acting Antibiotic Pathways Improve ED Metrics Versus Standard Care for Acute Bacterial Skin and Skin Structure Infection Treatment: A Discrete-Event Simulation. *Journal of Medical Economics*, 22(7):652-661

Halloran, M.E., K. Auranen, S. Baird, N.E. Basta, S.E. Bellan, R. Brookmeyer, B.S. Cooper, V. DeGruttola, J.P. Hughes, J. Lessler, **E.T. Lofgren**, I.M. Longini, J-P. Onella, B. Özler, G.R. Seage, T.A. Smith, A. Vespignani, E. Vynnycky, M. Lipsitch. 2017. Simulations for Designing and Interpreting Intervention Trials in Infectious Diseases. *BMC Medicine*, 15:223

Lofgren, E.T. 2017. Estimating the impact of past randomization changes in staff behavior in infection prevention trials: a mathematical modeling approach. *BMC Infectious Diseases*, 17:539

Omulo, S., **E.T. Lofgren**, M. Mugoh et al. 2017. The impact of fecal sample processing on prevalence estimates for antibiotic-resistant *Escherichia coli*. *Journal of Microbiological Methods*, 136: 71-77.

Lofgren, E.T., A.M. Egizi, N.H. Fefferman. 2016. Patients as Patches: Ecology and Epidemiology in Healthcare Environments. *Infection Control and Hospital Epidemiology,* 37(12): 1507-1512.

Lofgren, E.T. 2016. Unlocking the black box: teaching mathematical modeling with popular culture. *FEMS Microbiology Letters*, 363(20): 1-3.

Dicks, K.V., **E.T. Lofgren**, S.S. Lewis, R.W. Moehring, D.J. Sexton, D.J. Anderson. 2016. A Multicenter Pragmatic Interrupted Time Series Analysis of Chlorhexidine Gluconate Bathing in Community Intensive Care Units. *Infection Control and Hospital Epidemiology*, 37(17): 791-7.

Lofgren, E.T., K.M. Collins, T.C. Smith, R.A. Cartwright. 2016. Equations of the End: Teaching Mathematical Modeling using the Zombie Apocalypse. *Journal of Microbiology & Biology Education*, 17(1):137-142

Rivers, C.M., M.S. Majumder, D.N. Fisman, **E.T. Lofgren**. Risk of Death and Severe Disease in Patients with MERS-CoV, 2012 to 2016. *American Journal of Epidemiology*, 184(6): 460-464

Lofgren, E.T. 2015. Pools versus Queues: The Variable Dynamics of Stochastic "Steady States". *PLoS One,* 10(6): e0130574.

Lofgren, E.T. et al. 2014. Mathematical Models: A Key Tool for Ebola Outbreak Response. *Proceedings of the National Academy of Sciences*, 111(51): 18095-18096.

Fisman, D.N., C.M. Rivers, **E.T. Lofgren**, Majumder,M.S. 2014. Estimation of MERS-Coronavirus Reproductive Number and Case Fatality Rate for the Spring 2014 Saudi Arabia Outbreak: Insights from Publically Available Data. *PLoS Currents Outbreaks*.

Rivers, C.M. et al. 2014. Ebola: Models Do More Than Forecast. *Nature*, 515(7528): 492.

Halloran, M.E. et al. 2014. Ebola: Mobility data. *Science*, 346(6208): 433.
K.A. Alexander et al. 2014. What factors might have led to the emergence of Ebola in West Africa? *PLoS Neglected Tropical Diseases*.

Rivers, C.M., **E.T. Lofgren**, M. Marathe, S. Eubank, B.L. Lewis. 2014. Modeling the Impact of Interventions on an Epidemic of Ebola in Sierra Leone and Liberia. *PLoS Currents Outbreaks*.

Lofgren, E.T., S.R. Cole, D.J. Weber, D.J. Anderson, R.W. Moehring. 2014. Estimating All-cause Mortality and Length of Stay in Incident, Healthcare Facility-associated *Clostridium difficile* Cases Using Parametric Mixture Models. *Epidemiology,* 25(4): 570-575.

Lofgren, E.T., R.W. Moehring, D.J. Weber, D.J. Anderson, N.H. Fefferman. 2014. A Mathematical Model to Evaluate the Routine Use of Fecal Transplantation to Prevent Incident and Recurrent *Clostridium difficile* Infection. *Infection Control and Hospital Epidemiology*, 35(1):18-27.

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Lofgren, E.T. 2012. Visualizing Results from Transmission Models: A Case Against "Confidence Intervals". *Epidemiology*, 23(5): 738-741.

Chu, H., **E.T. Lofgren**, M.E. Halloran, P.F. Kuan, M. Hudgens, S.R. Cole. 2011. Performance of Rapid Influenza H1N1 Diagnostic Tests: a Meta-analysis. *Influenza and Other Respiratory Viruses*, 6(2): 80-86.

Lofgren, E.T., J.B. Wenger, N.H. Fefferman, D. Bina, S. Gradus, S. Bhattacharyya, Y.N. Naumov, J. Gorski, E.N. Naumova. 2010. Disproportional Effects in Populations of Concern for Pandemic Influenza: Insights from Seasonal Epidemics in Wisconsin, 1967-2004. *Influenza and Other Respiratory Viruses*, 4(4): 205-12.

Lofgren, E.T., J. Rogers, M. Senese, N.H. Fefferman. 2008. Pandemic Preparedness Strategies for School Systems: Is Closure Really the Only Way? *Annales Zoologici Fennici,* 44(6): 449-458.

Lofgren, E.T. and N.H. Fefferman. 2007. The Untapped Potential of Virtual Game Worlds to Shed Light on Real World Epidemics. *The Lancet Infectious Diseases,* 7(9):625-629.

Lofgren, E.T., N.H. Fefferman, Y.N. Naumov, J. Gorski, E.N. Naumova. 2007. Influenza Seasonality: Underlying Causes and Modeling Theories. *Journal of Virology*, 81(11):5429-5436.

Lofgren, E.T., N.H. Fefferman, M. Doshi, E.N. Naumova 2007. Assessing Seasonal Variation in Multisource Surveillance Data: Annual Harmonic Regression. *Lecture Notes in Computer Science.* BioSurveillance 2007. Eds D. Zeng et al. 4506:114-123.

Book Chapters

Lofgren, E.T. 2017. Systems Dynamics Models. In *Systems Science and Population Health*. El- Sayed and Galea, eds. Oxford University Press : Oxford. pp. 77-85.

Submitted Manuscripts

N.H. Fefferman, S. DeWitte, S.S. Johnson, **E.T. Lofgren**. Leveraging Insight from Centuries of Outbreak Preparedness to Improve Modern Planning Efforts. *In review*. Preprint available at: https://arxiv.org/abs/2005.09933 6

Lofgren, E.T., K. Lum, A. Horowitz, B. Madubuonwu, N. Fefferman. The Epidemiological Implications of Incarceration Dynamics in Jails for Community, Corrections Officer, and Incarcerated Population Risks from COVID-19. *In review*. Preprint available at: medrxiv.org/content/10.1101/2020.04.08.20058842v2

Fefferman, N.H., **E.T. Lofgren**, N. Li, P. Blue, D. Weber, A. Yakubu. Fear, Access and the Real-Time Estimation of Etiological Parameters for Outbreaks of Novel Pathogens. *In review*. Preprint available at: medrxiv.org/content/10.1101/2020.03.19.20038729v1

Lofgren, E.T., M.S. Mietchen, C.S. Short, K.V. Dicks, R.W. Moehring, D.A. Anderson. Estimating the Per-use Effectiveness of Chlorhexidine Gluconate and Mupirocin in Methicillin-resistant *Staphylococcus aureus* Decolonization in Intensive Care Units. *In submission.* Preprint available at: medrxiv.org/content/10.1101/19012732v1

C.S. Short, M.S. Mietchen, **E.T. Lofgren**. Transient Dynamics of Infection Transmission in a Simulated Intensive Care Unit. *In submission.* Preprint available at: arxiv.org/abs/1909.11878

Mietchen, M.S., C.S. Short, M. Samore, **E.T. Lofgren**. 2019. Population Structure Drives Differential Methicillin-resistant *Staphylococcus aureus* Colonization Dynamics in ICUs. *In submission*. Preprint available at medrxiv.org/content/10.1101/19002402v2.

Myers, K., **E.T. Lofgren**, N.H. Fefferman. 2018. 30 Relaxed Fit vs. 32 Slim Cut: Structural Nonidentifiability in Outbreak Models. *In submission*.

Omulo, S., **E.T. Lofgren**, S. Lockwood, et al. 2017. Saturated prevalence of antimicrobial resistance in an informal urban community. *In submission.*

Invited Talks

Synthesizing the Clinical Literature using Approximate Bayesian Computation. 2019. SIAM Conference on Computational Science and Engineering. Spokane, WA.

Meet the Professor: Building a Virtual Laboratory to Inform Improved Infection Control with Facility-Level Mathematical Modeling. 2018. IDWeek, San Francisco, CA.

The Patient-Patch: Hospital Epidemiology as an Ecology Problem. 2017. National Institute for Mathematical and Biological Synthesis, University of Tennessee, Knoxville, TN.

Adventures in Modeling for Policy. 2017. University of Utah, Salt Lake City, UT.

Agent-based Models and Population Health. 2016. Center for Health and Society at the University of Copenhagen, Copenhagen, Denmark.

Beyond Forecasting: Modeling for Decision Support, Policy and Translational Research. 2015. Society for Vector Ecology, Albuquerque, NM.

Epidemiology on Networks: Human and Otherwise. 2014. Department of Mathematics, Tulane University, New Orleans, LA.

Mathematical Modeling of In-Hospital Transmission of Infectious Diseases. 2013. Infectious Disease Grand Rounds, Duke University School of Medicine, Durham, NC.

Defining Epidemics: Detection, Behavior, and Intervention. 2011. Department of Homeland Security US-Sweden Workshop "A Visualization and Analytics Approach to Flooding and Pandemics". Norrköping, Sweden.

The Plagues of Azeroth: Outbreaks and Epidemiology in Virtual Worlds. 2011. UNC Gillings School of Global Public Health, Chapel Hill, NC.

Funding

U01CK000533-01 Lofgren, Eric T. (PI) 08/01/17 – 07/31/20
Centers for Disease Control and Prevention
Model-driven Surveillance and Intervention Evaluation in Highly Stochastic Healthcare Settings
Role: PI

200-2018-96423 Lofgren, Eric T. (WSU PI) 01/01/2018 – 06/30/19
Centers for Disease Control and Prevention
Identifying Predictors of Antimicrobial Exposure for Application in the Standardized Antimicrobial Administration Ratio Risk Adjustment Strategy
Role: PI of WSU Subcontract from Duke University

1UO1GH002143-01 Njenga, M. Kariuki (PI) 09/30/16-09/29/21
Centers for Disease Control and Prevention
Conducting Communicable Disease Research in Kenya
Role: Co-I

WSU College of Veterinary Medicine Lofgren, Eric (PI) 07/01/16 – 06/30/17
Intramural Award
Modeling Emerging Infections in Frontline Veterinary Care Settings
Role: PI

Awards and Honors

2007 University Merit Assistantship, UNC Gillings School of Global Public Health

2017 Finalist, Society for Healthcare Epidemiology of America Epi Project Competition

Professional Memberships

2010 - Member, Society for Epidemiological Research

2017 – Membership Committee

2010 - Member, Society for Industrial and Applied Mathematics

2012 - Member, Society for Healthcare Epidemiology of America

2017 – Journal Club

2018 – Research Committee, Publications Committee

2015 - Member, Association for Computing Machinery

2017 - Member, American Association for the Advancement of Science

Other Experience and Service

Manuscript Referee: *Epidemiology, American Journal of Epidemiology, Infection Control and Hospital Epidemiology, BMJ, BMJ Open, Environmental Health Perspectives, Scientific Data, BMC Infectious Diseases, Clinical Infectious Diseases, Bulletin of Mathematical Biology, PLoS One, PLoS Computational Biology* among others.

Editorial Boards: *Epidemiology*

U.S. Research Delegate: DHS US-Sweden Workshop 'A Visualization and Analytics Approach to Flooding and Pandemics'. Norrköping, Sweden. 2010.

Expert Witness: American Civil Liberties Union, Defender Services Office of the Administrative Office of the U.S. Courts

Press Coverage

Television: BBC World News, CBS News, Canada Television, Discovery Channel
Radio: BBC UK News, National Public Radio, North Carolina Public Radio, CBC, BBC4
Print/Online News: ABC News, ABS CBN News, Canadian Press, The Economist, Forbes, Fox News, New Scientist, Science News, Reuters, TIME, The Washington Post, FiveThirtyEight among others