

In the United States District Court
for the Northern District of Texas
Dallas Division

United States of America,	§	
Plaintiff,	§	
	§	Case No. 3:19-R-245-M
v.	§	
	§	
Timothy Bernard Tanner,	§	
Defendant.	§	
_____	§	

SUPPLEMENT TO MOTION TO CONTINUE

Defendant Timothy Bernard Tanner re-urges his earlier motion to continue the trial. He submits this Supplement to provide additional support for that request, and to emphasize the urgency and severity of the threat to public health and a fair, public trial.

I. There has been no obvious improvement in the conditions that led to postponement of in-person jury trials.

The situation in Dallas County—the site of the trial, and the location where most witnesses and potential jurors live—remains extremely precarious. It has not markedly improved since the filing of the Motion to Continue. Local officials have identified one benchmark that would start to justify resumption of in-person dining and other large gatherings—a fourteen-day decline in hospitalizations and ICU admissions—and they acknowledge that they have not achieved that benchmark. The County remains in the current status of red “Stay Home Stay Safe”. *See* News Release, “Dallas County Reports 171 Additional Positive 2019 Novel Coronavirus (COVID-19) Cases (May 25, 2020) (“May 25 Press Release”, available at <https://www.dallascounty.org/Assets/uploads/docs/covid-19/press-releases/052520-PressRelease-DallasCountyReports171AdditionalPositiveCOVID-19Cases.pdf>).

All counties in the Dallas Division have seen a significant increase in the number of positive cases. The following chart summarizes the total number of COVID-19 cases reported from each county to Texas Department of State Health Services:

County Name	Population	18-May	19-May	20-May	21-May	22-May	23-May	24-May	25-May	(7-Day Total: New Pos. Cases)
Dallas	2,734,111	7455	7679	7904	7904	8273	8477	8649	8827	1372
Ellis	177,721	247	258	264	266	272	272	272	272	25
Hunt	95,324	66	68	69	71	71	75	75	75	9
Johnson	171,701	123	136	142	144	148	148	148	148	25
Kaufman	125,134	147	155	165	173	182	182	182	182	35
Navarro	47,985	38	38	40	40	42	44	44	44	6
Rockwall	102,243	134	136	143	147	151	151	151	151	17
TOTAL	3,454,219	8210	8470	8727	8745	9139	9349	9521	9699	1489
(New positive cases)			260	257	18	394	210	172	178	

These numbers only represent *confirmed* positive cases; asymptomatic carriers would have no reason to seek testing.

On May 19, 2020, Dallas County had its deadliest day since the start of the pandemic as 14 people died as the result of the virus. *See* Press Release, “Dallas County Reports 225 Additional Positive 2019 novel Coronavirus (COVID-19) Cases,” (May 19, 2020), available at <https://www.dallascounty.org/Assets/uploads/docs/covid-19/press-releases/051920-PressRelease-DallasCountyReports225AdditionalPositiveCOVID-19Cases.pdf>

As of 11:00am, May 25, 2020, Dallas County Health and Human Services states that the total case count in Dallas County is 8,998 cases including 211 deaths. “Of cases requiring hospitalization, two-thirds have been under 65 years of age, and about half do not have high-risk

chronic health conditions. Diabetes has been an underlying high-risk health condition reported in about a third of all hospitalized patients with COVID-19.” *See* May 25 Press Release.

II. The social distancing procedures contemplated by the Court are not sufficient to protect the participants or the public.

As explained in the attached declaration from Dr. Eric Lofgren, an expert in epidemiology of infectious diseases, “a jury trial held on June 1, 2020” in this Division “represent a substantial health risk to all participants due to the ongoing COVID-19 epidemic.” *See* Exh. A. This remains true even if the Court orders the participants to wear cloth face coverings and sit at least six feet apart.

Our experience—and the experience of our colleagues—confirms that even the best laid plans to limit exposure often go astray. Where in-court proceedings could not be avoided—such as at in-person initial appearances and detention hearings—defense counsel have personally observed several violations of protective protocol, including people passing within 6 feet of each other; using hands to adjust masks; and temporary lowering of masks exposing mouth or nose.

Our review of potential juror questionnaires reveals widespread about the pandemic. Specifically, the questionnaires returned to date show that 51 of 65 people sought postpone or excuse; most of these invoked COVID-19. If the Court goes forward with a trial on June 1, the Court will be bringing in most of these jurors against their will. These jurors have expressed concerns stating:

- They have very high risk family members they are caring for and they do not feel comfortable serving or even going near the courthouse.
- That the virus is being spread in confined spaces and they are terrified of being in a crowded room right now.
- They are fearful about congregating in groups with reported cases still high and the lack of testing for everyone.

These add to the concerns expressed in the Initial Motion by the Defendant and his anticipated witnesses. They also suggest that the jury will be distracted by the dangers of the

pandemic, and that will compromise its ability to fairly evaluate the evidence. It is also possible that the jury will hold one side (or both) responsible for exposing them to this risk.

These fears will only be compounded if members of the public are allowed into the courtroom to observe proceedings. But excluding the public would deny Defendant his right to a public trial, and would deny the public their full right to open and accessible court proceedings.

III. Most, if not all, courts in the area have continued all jury trials until August.

Recognizing these dangers, courts throughout the nation (and this region of Texas in particular) have continued jury trials well past June 2020. The state district and county courts in Region One, which includes Dallas County, are not moving forward on jury trials until August 1. The Honorable Ray Wheless, the presiding judge over the First Administrative Judicial Region has communicated to his colleagues that district and county courts should not plan on conducting jury trials until August 1, 2020.

Even appellate courts—who do not have to deal with crowded jury rooms or cycling witnesses in and out—have experience the pains of trying to operate normally during a deadly pandemic. Even though the Texas Supreme Court has been working remotely, on May 21, 2019, Texas Supreme Court Justice Debra Lehrmann tweeted that she and her husband have tested positive for COVID-19. Justice Lehrmann noted that, “We began to exhibit symptoms last week, despite diligently complying with stay-at-home rules.”

https://twitter.com/JusticeLehrmann?ref_src=twsrc%5Egoogle%7Ctwcamp%5Eserp%7Ctwgr%5Eauthor

Indeed, even the United States Court of Appeals for the Fifth Circuit, a courthouse with cavernous courtrooms where participants can easily spread out, has canceled in person oral arguments that were scheduled for June 1-4, 2020.

Finally, the Administrative Office of the US Courts and Director James Duff issued a memorandum on May 7, 2020, announcing that he is “forming a Jury Subgroup of the Judiciary’s COVID-19 Task Force, comprised primarily of district judges, to develop guidance for district courts as they begin phased-in resumption of petit and grand jury proceedings. The Jury Subgroup will develop guidance on: (1) legal and policy parameters for jury operations; (2) criteria courts should use to determine when a court may safely restart juries; and (3) best practices recommendations to provide a safe environment for jurors, court staff, judges, counsel, and trial participants when jurors are summoned to report.” These guidelines are currently being debated and are not expected to be released until next week. If the guidelines for deciding when to resume jury trials (and how to safely conduct them) will not be released before next week, it is logical to assume it will not be safe to commence a trial next week.

IV. The pandemic will deprive Defendant of a fair cross-section of the community to serve as jurors.

As of today May 26, 2020, this Court has disclosed 65 jury questionnaires returned by the potential venire. By counsel’s count, 51 people have requested exemption, excuse or postponement of service. Most of these cited concerns about COVID-19. For at least two reasons, it does not appear that a lawful petit jury may be empaneled on the basis of these responses.

First, the extraordinarily high number of people requesting postponement of jury service and/or invoking an exemption destroys the random nature of jury selection. “It is the policy of the United States that all litigants in Federal courts entitled to trial by jury shall have the right to grand and petit juries selected at random from a fair cross section of the community in the district or division wherein the court convenes.” 28 U.S.C. §1861. A jury selection practice that

destroys the random nature or objectivity of the selection process represents a substantial failure to comply with this statute. *See United States v. Hemmingson*, 157 F. 3d 347 (5th Cir. 1998).

In the ordinary case, postponements and other exercises of discretion in jury selection do not destroy the random nature of selection. *See Sosa v. Dretke*, No. CIV. SA-00-CA-312-XR, 2004 WL 1124949, at *35 (W.D. Tex. May 20, 2004)(“Reasonable exemptions, such as those based on special hardship, incapacity, or community needs, are unlikely to pose a substantial threat that the remaining pool of jurors will not be representative of the community”)(citing *Taylor v. Louisiana*, 419 U.S. 522, 534 (1975)). In the present case, however, 51 of 65 people who returned a questionnaire sought postponement or excuse from jury service. Most of these will require an exercise of discretion concerning the risk of COVID-19 exposure. As such, in the unique circumstances of the present case, the jury would essentially be hand-picked from the venire by the judge, not selected at random.

The government suggests that this problem (and the cross-section claim) could be cured by summoning additional jurors in accordance with this District’s Amended Jury Plan. It is doubtful that this could be accomplished before Monday. But if so, it would not cure the problem – if most of the array asserts grounds for postponement that the Court enjoys a power to affirm or deny, selection is not random. And if the Court simply grants all COVID-19 related requests for postponement, it is likely skewing the jury on bases that are not demographically neutral.

Second, the decision to schedule the trial at the height of a deadly pandemic appears to have systematically excluded at least one cognizable demographic groups from the venire, and hence to have violated Mr. Tanner’s right to trial by a fair cross section of the community. Of the

65 questionnaires returned, it does not appear that more than 21 came from men.¹ The most recent AO-12 form indicates that the qualified jury wheel is 43.72% male. *See* Exh. B. Assuming that men and women in this case received questionnaires in this proportion, and further assuming that they were equally likely to return their surveys, a group of 65 returned surveys would contain 21 or fewer authored by men in only 4% of cases.² In other words, the radically skewed response rate reflected in the returned questionnaires is almost certainly due to the timing of the trial, and not due to mere chance.

To show a Sixth Amendment violation, the defendant must show that 1) “the group alleged to be excluded [from the jury system] is a ‘distinctive’ group in the community,” (2) “the representation of this group in venires from which juries are selected is not fair and reasonable in relation to the number of such persons in the community,” and (3) “this underrepresentation is due to systematic exclusion of the group in the jury selection process.” *Duren v. Missouri*, 439 U.S. 357, 364 (1976). This test is satisfied. Gender is a cognizable demographic characteristic for the purposes of the Sixth Amendment. *Taylor v. Louisiana*, 419 U.S. at 537. The percent of men in the potential venire – a little more than 32% -- falls radically below their proportion of the population. Finally, this underrepresentation stems from an affirmative barrier to jury service, namely the decision to schedule the trial at the height of the deadliest pandemic in at least a century. For whatever reason, this decision has disproportionately burdened the jury service of men as opposed to women.

¹ Doubts about the gender of potential jurors – which is not indicated explicitly on the questionnaires – has been resolved in favor of assuming that they are male.

² *See* Binomial Probability Calculator, <https://stattrek.com/online-calculator/binomial.aspx?fbclid=IwAR016-cOeE-ALZpNTg4pxqSOKIBbbLXmGZruZkJDNA4-3tMVwltbV5YngnE>, last visited May 26, 2020

The government suggests that no systemic underrepresentation can be found on the basis of a single venire. That is ordinarily a sound enough rule, but it presumes that the jury system is operating the same way in successive venires. That is not the case here, where the jury is shaped largely, perhaps primarily, by the scheduling decision. For the same reason, the Court should reject the government's argument that cross-section claims may not be based on response rates. Again, we may assume this to be true in the ordinary case. But here, response rates are determined in large, perhaps primary, part by the Court's action, namely its scheduling decision. That decision decides whether the trial complies with the Constitution, and whether it can possibly be fair.

CONCLUSION

This Court should: 1) continue the trial to another date, at least 60 days from June 1, 2020 to be tried by a venire selected by a new set of summonses, or, alternatively, 2) continue the trial to another date at least sixty days from June 1, 2020, and by the same venire, or 3) alternatively, continue the trial for such brief period as may be necessary to review the discovery ordered produced by the Court today. Of this, the Clerk's office has been able to produce only the AO-12's.

Respectfully submitted,

JASON D. HAWKINS
Federal Public Defender
Northern District of Texas

/s/ Michael W. Kawi
MICHAEL W. KAWI
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Northern District of Texas
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CERTIFICATE OF CONFERENCE

I certify that on May 11, 2020, I conferred with AUSA John Boyle and learned that the government is opposed to this request.

/s/ Michael W. Kawi
MICHAEL W. KAWI

CERTIFICATE OF DEFENDANT'S CONSENT

I certify that on April 20, 2020, I spoke directly with the defendant, Mr. Timothy Tanner and, after explaining the reason for filing this motion, Mr. Tanner agreed with the filing of this motion and all requests made therein.

/s/ Michael W. Kawi
MICHAEL W. KAWI

CERTIFICATE OF SERVICE

I hereby certify that on May 26, 2020, I electronically filed the foregoing document using the Court's CM/ECF system, thereby providing service on attorneys of record.

/s/ Michael W. Kawi
MICHAEL W. KAWI

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 heavily 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 a jury trial held on June 1, 2020 in the Dallas Division of the Northern District of District of Texas represents 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 a jury trial.

8. Further, it is my opinion that the risks of such transmission do not fall equally on all demographic groups, and there is likely to be a considerable disparity in both the real and perceived risk of COVID-19 related illness and death by age, race and socio-economic status.

III. Risk of COVID-19 Transmission in Dallas County

9. As of May 26nd, Dallas County reported 171 new cases of COVID-19 that day and examining the number of cases in Dallas County from March 10th to May 26nd suggests that cases in Dallas County are **not** consistently declining¹. Dallas County's COVID-19 risk level currently remains at its highest level as determined by Dallas County Health and Human Services.
10. The pattern of cases in May is consistent with substantial, sustained community transmission of COVID-19 within Dallas County, with most day to day changes reflecting random variation and known temporal artifacts such as testing (and thus cases) being lower on weekends.
11. Model-based forecasts of COVID-19 for Texas overall², as well as the Dallas-Fort Worth-Arlington metropolitan area specifically³ do not show a substantial predicted decrease in the number of COVID-19 cases by June 1st, 2020.
12. It is likely that substantial transmission of COVID-19 will be occurring in the Dallas County area on June 1st, 2020.
13. To date, most (86.6%) of these cases in Dallas County have arisen from transmission within the community⁴, and as such, it must be assumed that the potential juror pool, court officials, etc. are all potential sources of COVID-19 transmission.

IV. Inadequacy of COVID-19 Protective Measures

14. 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.

¹ Dallas County Health and Human Services. 2019 Novel Coronavirus (COVID-19) Summary. https://www.dallascounty.org/Assets/uploads/docs/covid-19/hhs-summary/COVID-19-DCHHS-Summary_052220.pdf. Updated May 26, 2020. Accessed May 26, 2020.

² Centers for Disease Control and Prevention. COVID-19 State Forecasts. <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/pdf/Consolidated-Forecasts-2020-05-18.pdf>. Updated May 19, 2020. Accessed May 25, 2020.

³ 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 May 21, 2020. Accessed May 25, 2020.

⁴ See 1

15. 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 droplets⁵ 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 pandemic⁶.
16. Masks are difficult to use correctly. They must be sufficiently thick as to block exhaled droplets, must be properly fitted, worn over both the nose and mouth continually.
17. 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.
18. 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.
19. 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 may be capable of traveling further and remaining suspended in the air for long periods of time^{7,8}.
20. 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 transmission due to long, sustained contact over many hours in an indoor space without purpose-built ventilation, such as a courthouse.
21. Compounding these problems, transmission is more likely to occur during events requiring a large amount of vocalization or when speech is louder than normal⁹ – such as might be the case in a courtroom setting.

⁵ 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

⁶ C. Clase *et al.* (2020) Cloth Masks May Prevent Transmission of COVID-19: An Evidence-Based, Risk-Based Approach. *Annals of Internal Medicine*.

⁷ 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

⁸ 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](https://doi.org/10.1093/infdis/jiaa189)

⁹ Asadi, S. *et al.* (2019) Aerosol emission and superemission during human speech increase with voice loudness. *Scientific Reports* (9): 2348

V. Conclusion and Recommendations

22. 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 trial taking place in Dallas County on June 1st, 2020 represents a substantial risk to all participants of said trial.

23. 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 such as a courtroom.

24. It is my professional opinion that a delay in this trial is a reasonable and responsible action considering the ongoing public health crisis, which is unlikely to have reached its peak, let alone resolved, in Dallas County by June 1st, 2020.

I declare under penalty of perjury that the foregoing is true and correct. Executed on May 26, 2020.



Eric Lofgren MSPH, PhD

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 (* denotes student or postdoc author)

C.S. Short*, 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

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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

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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

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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.

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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*.

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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.

Moehring, R.W., **E.T. Lofgren**, D.J. Anderson. 2013. Impact of Change to Molecular Testing for *Clostridium difficile* Infection on Healthcare Facility-Associated Incidence Rates. *Infection Control and Hospital Epidemiology*, 34(10): 1055-1061.

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

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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.

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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/2005.099336>

Lofgren, E.T., K. Lum, A. Horowitz, B. Madubonwu, 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.

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

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

1U01GH002143-01 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.

Press Coverage

Television: BBC World News, CBS News, Canada Television, Discovery Channel

Radio: BBC UK News, National Public Radio, North Carolina Public Radio

Print/Online News: ABC News, ABS CBN News, Canadian Press, The Economist, Forbes, Fox News, New Scientist, Science News, Reuters, TIME, The Washington Post

**REPORT ON
OPERATION OF THE JURY SELECTION PLAN*
COMPLETED PURSUANT TO 28 U.S.C. § 1863(a)**

DIVISION Dallas	If Master Wheel is Maintained for District at Large, Check Here <input type="checkbox"/>
DISTRICT NUMBER 0539/3	DATE COMPLETED 05/18/2020

PART I GENERAL INFORMATION:

- This master jury wheel was last filled 06/26/2020
- The number of names then placed in the wheel was 32,477
- Source of Names Was
 - Voter registration ()
 - List of actual voters ()
 - Other (*specify*) driver's license and state ID
- Supplied by: Texas Secretary of State
- No. of jury divisions established in district by Jury Selection Plan 7

PART II SAMPLING OF RETURNED QUESTIONNAIRES:

- (1) Date of drawing from master wheel 07/22/2019 (2) No. of names drawn 32,477
 - (3) Dates on which initial mailing completed 12/05/2019 (4) No. of forms mailed 27,477
 - (5) Date of sampling from returned forms 05/18/2020
 - Completed and returned 13,158
 - Returned undeliverable by P.O. 2,972
 - Not yet returned 16,346
- Number of qualification forms thus far: {
- (9) Analysis of sample of completed and returned questionnaire forms: Total no. of forms in sample 13,158

Race ↓	Sex						Total in Sample	Percent of Sample
	Male	%	Female	%	Unknown	%		
White	3,518	26.74	4,097	31.14	0		7,615	57.87
Black or African American	629	4.78	1,110	8.44	0		1,739	13.22
American Indian or Alaska	30	0.23	64	0.49	0		94	0.71
Asian	323	2.45	347	2.64	0		670	5.09
Native Hawaiian/Pacific Islander	8	0.06	11	0.08	0		19	0.14
Other	466	3.54	460	3.50	0		926	7.04
Multi-Racial	154	1.17	144	1.09	0		298	2.26
Unknown	792	6.02	896	6.81	109	0.83	1,797	13.66
Total (by column)	5,920	44.99	7,129	54.18	109	0.83	13,158	100%

Ethnicity ↓	Sex						Total in Sample	Percent of Sample
	Male	%	Female	%	Unknown	%		
Hispanic or Latino	1,009	7.67	1,287	9.78	0		2,296	17.45
Non-Hispanic or Non-Latino	4,121	31.32	4,946	37.59	0		9,067	68.91
Unknown	790	6.00	896	6.81	109	0.83	1,795	13.64
Total (by column)	5,920	44.99	7,129	54.18	109	0.83	13,158	100%

PART III SAMPLING OF QUALIFIED JURY WHEEL:

(If this part is reported because of a change in rules, attach an explanation of changes.)

- Date sample was taken 05/18/2020 (2) Number of names in wheel 9,150
- Analysis of sample: Total no. of names in sample 9,150

Race ↓	Sex						Total in Sample	Percent of Sample
	Male	%	Female	%	Unknown	%		
White	2,795	30.55	3,389	37.04	0		6,184	67.58
Black or African American	495	5.41	956	10.45	0		1,451	15.86
American Indian or Alaska Native	25	0.27	50	0.55	0		75	0.82
Asian	215	2.35	255	2.79	0		470	5.14
Native Hawaiian/Pacific Islander	6	0.07	11	0.12	0		17	0.19
Other	326	3.56	355	3.88	0		681	7.44
Multi-Racial	123	1.34	117	1.28	0		240	2.62
Unknown	11	0.12	10	0.11	11	0.12	32	0.35
Total (by column)	3,996	43.67	5,143	56.21	11	0.12	9,150	100%

Ethnicity ↓	Sex						Total in Sample	Percent of Sample
	Male	%	Female	%	Unknown	%		
Hispanic or Latino	751	8.21	1,043	11.40	0		1,794	19.61
Non-Hispanic or Non-Latino	3,235	35.36	4,090	44.70	0		7,325	80.05
Unknown	10	0.11	10	0.11	11	0.12	31	0.34
Total (by column)	3,996	43.67	5,143	56.21	11	0.12	9,150	100%

PART IV STATISTICAL COMPARISON OF JURY WHEEL SAMPLE AGAINST CITIZEN POPULATION DATA, AGE 18 OR OVER, BY RACIAL, ETHNIC, AND SEX CLASSIFICATIONS

This table reflects (<input checked="" type="checkbox"/>) persons returning questionnaires, or (<input type="checkbox"/>) persons qualified as jurors		Number in Wheel Sample	Percent of Sample	Percent of Sample with Unknowns Removed 11361	Percent this class is found in citizen population of the: (<input type="checkbox"/>) district (<input checked="" type="checkbox"/>) jury division
Racial	TOTAL	9,150	100%	100%	100.10
	White	6,184	67.58	67.82	67.20
	Black or African American	1,451	15.86	15.91	22.50
	American Indian or Alaska Native	75	0.82	0.82	0.40
	Asian	470	5.14	5.15	3.60
	Native Hawaiian or Pacific Islander	17	0.19	0.19	0.10
	Other	681	7.44	7.47	4.20
	Multi-Racial	240	2.62	2.63	2.10
	Unknown	32	0.35		
	Other racial or ethnic class (if specified by Court)				
				
				
				
Ethnic	Hispanic or Latino	1,794	19.61	19.67	19.50
	Non-Hispanic or Non-Latino	7,325	80.05	80.33	80.50
	Unknown	31	0.34		
Sex	Male	3,996	43.67	43.72	
	Female	5,143	56.21	56.28	
	Unknown	11	0.12		

Prepared by: Anne Brabham

For the Court Northern District of Texas
 Clerk, United States District Court

Data Collection Instructions

General The information to be collected on the AO 12 form is for the use of the district courts to aid them in (1) determining whether their jury wheels comply with the randomness and nondiscrimination provisions of the Jury Selection and Service Act, and (2) comparing a statistical sampling of jury wheels against general population data. Although the AO 12 form is no longer required to be filed with the Administrative Office of the United States Courts, it is required to be prepared for retention by the court as one of the jury wheel records. The data collection mechanism which is implemented by this form was approved by the Judicial Conference at its March and September 1975 meetings (see the 1975 Report of the Proceedings of the Conference, pages 14-15 and 55). The revisions to the reporting procedures were approved by the Judicial Conference at its March and September 1982 meetings (see the 1982 Report of the Proceedings of the Conference, pages 41-42 and 114), and at its March 1991 meeting.

The AO 12 form is required to be completed upon the occurrence of either of the following two events:

- (1) The periodic refilling of the master jury wheel(s), which is required by 28 U.S.C. §1863(b)(4) to be done at least once every four years; or
- (2) An amendment of the rules contained in the court's juror selection plan for the selection, qualification, excuse, or exemption of jurors, such as to affect the qualified jury wheel.

The latter event requires the completion of only Parts I, III, and IV of the form; the former requires the completion of each of the first four parts.

Data to be Collected The data to be collected (and reported) on the Form AO 12 pertain to two distinct phases of the jury selection process:

- (a) The drawing of names from the master jury wheel and the mailing of juror qualification forms to the persons whose names have been drawn (as directed by 28 U.S.C. §1864(a); and
- (b) The formation of the qualified jury wheel (28 U.S.C. §1866(a)).

Part I Complete this part each time the Form AO 12 is prepared. Provide here:

- (1) The date the master wheel was last filled;
- (2) The number of names then placed in the wheel;
- (3) The source of names for the master wheel;
- (4) The names of the persons or agencies supplying the source of names (e.g., "Central City Registrar of Voters"); and
- (5) The number of jury divisions established for the district by its selection plan.

Part II This part should be completed each time the master jury wheel is refilled. The data reported should pertain to the first drawing of names from the master wheel (as in 28 U.S.C. §1864(a)) after such refilling. First, complete Section A of Part II by indicating:

- (1) The date on which the drawing took place;
- (2) The number of names drawn;
- (3) The date on which the initial mailing of qualification forms to persons whose names were drawn was completed; and
- (4) The total number of qualification forms mailed to such persons.

On a convenient date, at least 90 days after the date given in (3) above, complete Section B of Part II by giving:

- (5) The date;
- (6) The number of qualification forms thus far completed and returned;
- (7) The number of returned undeliverable by the Post Office; and
- (8) The number not yet returned.

The sum of the numbers given in (6), (7), and (8) should equal the number given in (4), above.

Also, on this date, select a random sample of the completed and returned qualification forms, and indicate the race/ethnicity/sex distribution of this sample in subpart (9). The random sample of forms should be at least as large as the prescribed "minimum sample size" of 300. You may choose to provide the race/ethnicity/sex distribution for all completed qualification forms; you *must* choose this option if the "minimum sample size" is larger than the number of completed and returned forms. If you do not so choose, see the back of page two for random sampling instructions. Courts using the Judiciary's automated jury management system should use the system's JS-12 reporting function to provide the race/ethnicity/sex distribution for all completed qualification forms called for in subpart (9). To compute the percentage figures, divide each race/ethnicity/sex distribution figure in subpart (9) by the total number of forms in the sample.

Part III This part calls for the race/ethnicity/sex distribution of a sample of names drawn from the qualified jury wheel. The sample should also be at least as large as the "minimum sample size" of 300. As in Part II, you may choose to provide the race/ethnicity/sex distribution of all the names in the qualified wheel. If the number of the names in the qualified wheel is larger than the "minimum sample size" and you choose to draw a sample of less than the full wheel, the sample should be drawn using the same procedure as you would use to draw that many names for assignment to jury panels (as directed by 28 U.S.C. §1866(A)). Courts using the judiciary's automated jury management system should use the system's JS-12 reporting function to provide the race/ethnicity/sex distribution for all qualified jurors called for in subpart (3).

Part III should be reported at two different times: (a) each time Part II is completed (but do not draw the qualified wheel sample until after those persons who returned the qualification forms which are reported in Part II have actually entered the qualified wheel); and (b) at any time when there is a change in the rules set forth in your court's juror selection plan for juror qualification, exemption, or excuse (but do not draw the sample until the change in rules has actually been applied to persons in the qualified wheel).

Report here: (1) the date the sample was taken; (2) the total number of names then in the qualified wheel; and (3) the race/ethnicity/sex distribution of the sample. To compute the percentage figures, divide each race/ethnicity/sex distribution figure in subpart (3) by the total number of names in the sample.

Part IV This part calls for the comparisons of jury wheel data against citizen population data. You may choose to provide a statistical comparison of the jury wheel sampling prepared under either Part II or Part III. To assist you with these comparisons, the Administrative Office will provide specially programmed Census Bureau information that show racial, ethnic, and sex data and percentages to the citizen population by county for every federal jury division of your district. You may also provide a demographic breakdown of jury wheel data with unknown demographic data removed in order to provide a more accurate comparison of the *known* demographic breakdown of jury wheel data with citizen population data. Those figures in Part IV dealing with citizen population percentages should be copied from census data tables. Part IV should be completed each time the part to which it is compared (Part II or Part III) is completed.

Random Sampling Instructions

1. Compute the sampling interval: The sample must consist of a minimum of 300 qualification forms. Divide the total number of completed and returned qualification forms by the “minimum sample size” of 300. The result of this division (the whole number only – ignore the remainder) is the sampling interval. If, for instance, the number of forms is 5000 and the “minimum sample size” is 300, the sampling interval is $5,000 \div 300 = 16$ (ignore the remainder of 200). The sampling interval that you have computed will produce a sample size equal to the total number of qualification forms, divided by the sampling interval; this sample size should be at least as large as the “minimum sample size.” In the preceding example, the sampling interval of 16 would produce a sample of $5,000 \div 16 = 312$ forms. If the sampling interval is 1, simply use the total set of returned completed questionnaires as the sample.

If the sampling interval is 2 or greater, proceed as follows:

2. Gather together the total set of completed qualification forms. You may simply gather the actual forms into a stack, or create a list of names or numbers associated with the forms. The stack or list need not be in any particular order, but it is mandatory that no change in the order be made once sampling has begun.

3. The first qualification form to be selected is determined by reference to the list of sampling intervals shown in the columns below. Use the starting point corresponding to your sampling interval. (If your sampling interval is greater than 100, consult the Administrative Office to select a starting point.)

4. Select forms (or list entries) according to the sampling interval. Continue to select in this fashion until you run out of forms. DO NOT STOP selecting merely because you have selected a number for forms equal to the “minimum sample size.”

FOR EXAMPLE, suppose that 1,750 qualification forms have been returned to your court, and that the “minimum sample size” is 300. Divide 1,750 by 300 to get 5 with a remainder of 250. The sampling interval is 5. This will produce a sample $1,750 \div 5 = 350$ qualification forms. The list below shows a starting point of 3 for a sampling interval of 5. The first qualification form selected for the sample is the 3rd one. Thereafter, select the 8th, 13th, 18th, 23rd, etc., and continue until you have run out of forms.

Sampling Interval	Starting Point	Sampling Interval	Starting Point	Sampling Interval	Starting Point	Sampling Interval	Starting Point
2	1	27	27	52	30	77	5
3	1	28	6	53	26	78	31
4	4	29	7	54	9	79	17
5	3	30	11	55	19	80	77
6	4	31	8	56	40	81	52
7	3	32	20	57	30	82	49
8	4	33	10	58	12	83	79
9	5	34	11	59	38	84	83
10	9	35	26	60	50	85	7
11	6	36	1	61	13	86	52
12	9	37	5	62	19	87	13
13	9	38	14	63	2	88	16
14	5	39	15	64	20	89	45
15	6	40	22	65	13	90	20
16	4	41	33	66	64	91	44
17	14	42	41	67	50	92	71
18	16	43	22	68	41	93	77
19	7	44	42	69	12	94	53
20	20	45	6	70	68	95	67
21	14	46	20	71	36	96	2
22	19	47	7	72	21	97	79
23	2	48	31	73	49	98	87
24	15	49	22	74	46	99	34
25	23	50	19	75	42		
26	3	51	9	76	32		