

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
SAN ANTONIO DIVISION

MI FAMILIA VOTA, TEXAS STATE
CONFERENCE OF THE NATIONAL
ASSOCIATION FOR THE ADVANCEMENT
OF COLORED PEOPLE, MICAELA
RODRIGUEZ and GUADALUPE TORRES,

Plaintiffs

v.

GREG ABBOTT, Governor of Texas; RUTH
HUGHS, Texas Secretary of State,

Defendants.

No. 5:20-cv-00830

**DECLARATION OF CATHERINE L. TROISI IN SUPPORT OF PLAINTIFFS’
MOTION FOR PRELIMINARY INJUNCTION**

1. My name is Catherine L. Troisi. I am over the age of eighteen (18), of sound mind, and in all respects competent to testify. The facts stated herein are true, correct, and within my personal knowledge.

2. I have been asked by counsel for plaintiffs to opine on the novel coronavirus and its implications on in person voting in Texas. Based on my 40 years of experience as an epidemiologist and work in public health in the area of infectious disease epidemiology specializing in viruses, I have reached the following high-level conclusions, which are supported in more detail throughout my declaration:

- There is a high probability that SARS-CoV-2, the novel coronavirus and causative agent of COVID-19, will continue to spread throughout the fall and winter.
- The virus is spread from person to person through the air and on environmental surfaces. Therefore, gatherings such as at polling places, and shared equipment, contribute to virus spread.

- There are ways to mitigate the risk of virus transmission at polling places.

QUALIFICATIONS

3. I am an infectious disease epidemiologist and public health expert as well as an Associate Professor in the Department of Management, Policy, and Community Health and Department of Epidemiology, Human Genetics, and Environmental Sciences and Center for Infectious Diseases at the University of Texas Health Science Center at Houston, School of Public Health and an Adjunct Associate Professor at Baylor College of Medicine.

4. I have a B.A. in Chemistry from The University of Rochester (NY) in 1974, an M.S. in Biochemistry from Michigan State University in 1975, and a PhD in Epidemiologic Sciences from The University of Michigan in 1980, specializing in influenza studies. I completed a postdoctoral position at Baylor College of Medicine in the Department of Virology and Epidemiology. I am a graduate of the National Public Health Leadership Institute at the University of North Carolina and have received post-doctoral training in epidemiologic techniques and public health preparedness.

5. My forty-year career in public health has been in the area of infectious disease epidemiology specializing in viruses. I was on the faculty in the Department of Virology and Epidemiology at Baylor College (the name was changed to Department of Molecular Virology during my tenure there) from 1983-1996, and I joined the faculty at University of Texas Health Science Center at Houston School of Public Health in Disease Control and Biological Sciences in 1997. I left academia in 2003 for seven years to practice public health at the Houston Health Department, beginning as Bureau Chief for HIV/STD and Viral Hepatitis Prevention, was promoted to Assistant Director of the Health Department, overseeing the Division of Prevention and Communicable Diseases, and finally creating and filling a new position as Director of Public Health Practice. I rejoined the UTSPH faculty in 2010, in the Departments of Management,

Policy, and Community Health and Epidemiology, Human Genetics, and Environmental Sciences and the Center for Infectious Diseases.

6. I was Incident Commander in the National Incident Management System structure (i.e., in charge of the Houston Health Department's response) in 2009 for the H1N1 influenza pandemic, a respiratory virus.

7. I am also currently an elected Executive Board Member of the American Public Health Association, a Board Member of International Network of Epidemiology in Policy, an Elected Fellow, Texas Public Health Association, a member of the National Association of County and City Health Officials epidemiology workgroup, and a member of the American College of Epidemiology. I have received several awards and honors including the Excellence in Community Service Award, UTSPH, 2013 and 2019, and the Association of Schools and Programs in Public Health Service Award, 2018. I was elected to Sigma Xi (Scientific Honor Society) in 1979, received a fellowship from the University of Michigan 1977-1980, and was a Eugene B. Casey Fellow at Baylor College of Medicine. I have testified before the US House of Representatives Committee on Homeland Security, Ebola Preparedness (October 2014, Dallas, TX), Governor Perry's Task Force on Public Health Prevention, Ebola Preparedness (October 2014, Austin, TX), the Texas House County Affairs Committee, Syringe Exchange Programs (April 2019, Austin, TX), and provided expert testimony in the Texas 21st Judicial District, Travis County, *Texas Democratic Party, et al vs. Dana Debeauvoir and the State of Texas*, April 2020. I have also been deposed as an expert witness in *Lewis, et al. v. Hughes*, No. 5:20-cv-00577 (W.D. Tex 2020).

8. Attached as Appendix A and incorporated by reference to this declaration is a copy of my curriculum vitae. I am being compensated for my work in this matter at a rate of \$150 an hour. My compensation is not dependent on my opinions or conclusions.

BACKGROUND ON COVID-19

9. The first reports of this novel coronavirus, now named SARS-CoV-2, occurred on December 31, 2019. The first confirmed case in the United States was noted one month later on January 20, 2020. In the nearly seven months since that first confirmed U.S. case, there have been over 5.7 million cases in all 50 states plus District of Columbia, with over 176,000 deaths reported as of August 25, 2020.¹ The United States as a whole is averaging over 46,000 confirmed cases per day and has experienced a 12% increase in cases over the last week.² The United States has approximately 4% of the world's population but nearly 25% (over 2.6 million confirmed) of the COVID-19 cases.³

10. The COVID-19 infection is caused by the SARS-CoV-2 virus and is spread in two ways: (1) by the respiratory route (through the air and through mucous membranes), and (2) by fomites, that is, environmental surfaces that are contaminated with the virus. While droplet transmission is thought to be the main route of respiratory transmission, there is evidence that aerosol spread can occur as well under certain circumstances.⁴ The importance of this route is that aerosols can linger in the air, unlike droplets, and thus enhance transmissibility of the virus. SARS CoV-2 can also be found in feces, although importance of this in transmission is not yet

¹<https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html> (accessed Aug. 25, 2020).

²https://www.covidexitstrategy.org/?utm_campaign=wp_the_health_202&utm_medium=email&utm_source=newsletter&wpisrc=nl_health202 (accessed Aug. 22,2020).

³<https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6> accessed 7/11/20.

⁴<https://www.who.int/publications/i/item/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations>.

known.⁵ The virus is infectious and each person can infect, on average, between 2 and 5 to 6 other persons, in the absence of protective measures, leading to exponential spread.⁶ SARS CoV-2 is more infectious than influenza.⁷

11. Reported illnesses from SARS-CoV-2 have ranged from no to mild symptoms to severe illness and death. Symptoms can include fever, dry cough, and shortness of breath. In addition to lung damage, the virus can cause damage and failure of other organs including heart, kidney, and intestines.⁸ When severe, COVID-19 is a systemic illness characterized by hyperinflammation, cytokine storm, and elevations of cardiac injury biomarkers.⁹ Forty percent of deaths from COVID-19 are due to cardiac damage, and these serious consequences can occur even after respiratory symptoms are resolved.¹⁰ There are reports of some individuals who clear the infection but suffer effects from the infection for months.¹¹ Children generally do not have severe disease from COVID-19, but recently there has been recognition of multi-system inflammatory syndrome in SARS-CoV-2 infected children.¹²

12. According to the CDC, certain groups such as those over 65 years of age and those with certain underlying medical conditions (including chronic lung disease such as moderate to severe asthma, chronic heart disease, diabetes, obesity, chronic kidney disease, liver

⁵ https://wwwnc.cdc.gov/eid/article/26/8/20-0681_article (accessed June 6, 2020).

⁶ <https://www.healthline.com/health/r-nought-reproduction-number;https://www.cdc.gov/coronavirus/2019-ncov/hcp/planning-scenarios.html> (accessed August 26, 2020).

⁷ <https://www.livescience.com/new-coronavirus-compare-with-flu.html>.

⁸ [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30937-5/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30937-5/fulltext) (accessed June 6, 2020).

⁹ Ibid.

¹⁰ <https://jamanetwork.com/journals/jamacardiology/fullarticle/2763843> (accessed June 6, 2020).

¹¹ https://www.theatlantic.com/health/archive/2020/06/COVID-19-coronavirus-longterm-symptoms-months/612679/?utm_source=email&utm_medium=cr&utm_campaign=jeff-letter-actives&utm_content=20200606&silverid-ref=NjIzNjE1NzU4MjkxS0 (accessed June 5, 2020).

¹² <https://emergency.cdc.gov/han/2020/han00432.asp> (accessed June 6, 2020).

disease, immunosuppression) are at higher risk of serious illness and death from COVID-19.¹³ Pregnant women are at increased risk of a severe outcome.¹⁴ However, anyone can be infected with COVID-19 and suffer serious outcomes.¹⁵ Rates of hospitalization increase with age.¹⁶ A recent CDC study shows that 47% of Americans have a co-morbid condition that would put them at increased risk of serious sequelae should they become infected.¹⁷

13. Racial minorities have been particularly affected by this pandemic for several reasons. They are more likely to get infected due to increased possibility of exposure (crowding, essential jobs that interact with the public) and, once infected, experience worse outcomes. Race and ethnicity have not been routinely captured on test results reporting to health departments, although that will change in a few months, but we do have hospitalization data showing Blacks are overrepresented among hospitalized COVID-19 patients compared to the hospital catchment area. For example, a CDC reports states that “[a]mong cases with known race and ethnicity, 33% of persons were Hispanic, 22% were black, and 1.3% were AI/AN [American Indian or Alaska Native]. These findings suggest that persons in these groups, who account for 18%, 13%, and 0.7% of the U.S. population, respectively, are disproportionately affected by the COVID-19 pandemic.”¹⁸ Native Americans in particular have five times the COVID-19 age-adjusted hospitalization rate compared to non-Hispanic whites.¹⁹

¹³ <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-higher-risk.html> (accessed June 7, 2020).

¹⁴ https://www.cdc.gov/mmwr/volumes/69/wr/mm6925a1.htm?s_cid=mm6925a1_w

¹⁵ <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html> (accessed Apr. 11, 2020).

¹⁶ https://www.cdc.gov/mmwr/volumes/69/wr/mm6915e3.htm?s_cid=mm6915e3_w

¹⁷ <https://www.cdc.gov/mmwr/volumes/69/wr/mm6929a1.htm>.

¹⁸ https://www.cdc.gov/mmwr/volumes/69/wr/mm6924e2.htm?s_cid=mm6924e2_w; <https://www.nejm.org/doi/full/10.1056/NEJMp2019445?query=infectious-disease>.

¹⁹ <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/racial-ethnic-minorities.html>.

14. Scientists estimate that between 40% and 45% of infected individuals will either never show symptoms or have very mild symptoms, but they can transmit the virus to others up to 14 days following infection. Even those who do not have symptomatic disease may suffer long term effects from the virus.^{20,21}

15. The novel coronavirus is detected through use of a reverse-transcriptase polymerase chain reaction (RT-PCR) test.²² Serologic tests which detect antibodies to the virus have been developed, although sensitivity and specificity of the tests are not optimal.²³ While improving, there has not been adequate testing for the virus anywhere in the United States, including Texas, due to a lack of test kits, lack of testing supplies, and lack of personal protective equipment for those healthcare workers taking samples.²⁴

16. Within my area of expertise, social distancing, masks, frequent hand-washing, and environmental disinfection are the only ways to limit the spread of the virus,²⁵ as there is no FDA-licensed vaccine that could be administered to elicit immunity to the virus.

17. Social (also called physical) distancing refers to maintaining a distance of at least 6 feet between persons. Social distancing is a proven method to stop the spread of viruses such as the novel coronavirus through the respiratory route.²⁶ As noted, the novel coronavirus is spread through droplet transmission. These droplets are produced through coughing, sneezing, talking,

²⁰ <https://www.acpjournals.org/doi/10.7326/M20-3012>

²¹ <https://www.nature.com/articles/s41591-020-0965-6.pdf>

²² <https://jamanetwork.com/journals/jama/fullarticle/2762997>

²³ <https://www.the-scientist.com/news-opinion/why-the-accuracy-of-sars-cov-2-antibody-tests-varies-so-much-67513> (accessed June 6, 2020).

²⁴ <https://www.nytimes.com/2020/03/28/us/testing-coronavirus-pandemic.html>;
<https://www.wbur.org/onpoint/2020/03/18/COVID-19-testing-in-the-u-s>

²⁵ <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html> (accessed Aug. 25, 2020).

²⁶ <https://www.nap.edu/catalog/25753/rapid-expert-consultation-on-social-distancing-for-the-COVID-19-pandemic-march-19-2020>

and singing. The droplets are fairly heavy, and most studies have shown that they cannot travel more than approximately 6 feet,²⁷ although under certain circumstances, they can travel a longer distance.²⁸ Therefore masks are recommended as well as physical distancing. Non-medical (e.g., cloth) masks have been shown to prevent an infected person from transmitting infection, and evidence is accumulating that wearing one can protect the wearer from acquiring viral infection.²⁹

18. Frequent hand-washing is also recommended because the virus can be spread when, for example, an infected person coughs into their hand and touches a surface (e.g., a polling machine screen) and then another person touches that same surface and, without washing their hands, touches their mouth, nose, or eye.³⁰ Infected persons, whether or not they have symptoms, can spread the virus to others, and we are learning that this is a very infectious virus.³¹

19. Any place where people gather and do not maintain physical distancing, such as a polling place, represents a heightened danger for transmission of COVID-19 disease. Due to the possibility of close proximity (less than 6 feet) between voters, between poll workers and voters, and between poll workers and poll workers, as well as the transmission of the virus on polling machine screens and other environmental surfaces, there is risk of spread of the virus at polling

²⁷ https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/prevention.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fprepare%2Fprevention.html

²⁸ <https://jamanetwork.com/journals/jama/fullarticle/2763852>

²⁹ http://files.fast.ai/papers/masks_lit_review.pdf
[https://www.journalofhospitalinfection.com/article/S0195-6701\(20\)30046-3/fulltext](https://www.journalofhospitalinfection.com/article/S0195-6701(20)30046-3/fulltext)

³⁰ <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cleaning-disinfection.html>
 (accessed Aug. 25, 2020).

³¹ https://www.jwatch.org/na51616/2020/06/01/you-can-speak-and-sing-COVID-19?query=C19&cid=DM93011_NEJM_Registered_Users_and_InActive&bid=207638425
 (accessed Aug. 25, 2020).

places through droplets, airborne, or environmental surfaces. This is particularly important because some people who are infected with the novel coronavirus do not have any symptoms but can transmit the virus and/or are infectious before they develop symptoms.³² This means that isolating only symptomatic persons will not stop the spread of infection. Instead, we have to assume anyone could be infected and transmit that infection to another person.

20. As a result of the many ways the coronavirus can spread, with respect to elections, the Centers for Disease Prevention and Control states that:

The more an individual interacts with others, and the longer that interaction, the higher the risk of COVID-19 spread. Elections with only in-person voting on a single day are higher risk for COVID-19 spread because there will be larger crowds and longer wait times. Lower risk election polling settings include those with:

- a wide variety of *voting* options
- longer voting periods (more days and/or more hours)
- any other feasible options for reducing the number of voters who congregate indoors in polling locations at the same time

The CDC also recommends that voters consider alternatives that minimize contact with or the amount of time you are in contact with others to help reduce the spread of COVID-19.³³

LONGEVITY OF COVID-19

21. In my expert opinion, it is highly likely that the novel coronavirus will continue to be transmitted through this summer and fall and, as discussed below, people will continue to have to social distance, hand-wash, and take proper precautions into November. The results of easing community mitigation efforts have contributed in great part to the surge in cases we saw in June and July, including in Texas, *see infra* ¶¶ 27-28. While cases are decreasing in Texas and

³² Li R, Pei S, Chen B, et al. Substantial undocumented infection facilitates the rapid dissemination of novel coronavirus (SAROVIS-CoV2). *Science* (New York, NY). 2020

³³ <https://www.cdc.gov/coronavirus/2019-ncov/community/election-polling-locations.html>

some other states, they remain at a high level and this will most likely continue, based on unavailability of vaccine against the virus, lack of or minimal seasonality of the virus, and lack of herd immunity. While this is a new virus and we don't completely understand its epidemiology, as a public health expert, I (along with other experts) am confident we will see increased spread of the virus in the fall and winter.³⁴ Lower humidity in the winter months, including November, is expected to lead to enhanced transmission.³⁵ This prediction is also based on the experience during the 1918 pandemic.³⁶

22. Based on my expertise, it is highly unlikely that a licensed (i.e., FDA-approved and available for mass distribution) vaccine will be available before next year at the earliest.³⁷ Developing a vaccine is both an art and a science and takes time. There are five steps in vaccine development: pre-clinical stage, clinical development, regulatory review and approval, manufacturing, and quality control. The preclinical stage involves studying the physical makeup of the virus and which parts are likely to elicit protective immunity. It is not always clear which portion that should be, so several different attempts may be necessary. There also are many types of vaccines and two platforms in trials now, mRNA³⁸ and adenovirus vector,³⁹ while

³⁴ <https://www.cnet.com/how-to/a-second-wave-of-coronavirus-when-it-could-come-how-long-it-could-last-and-more/> (accessed Aug. 25, 2020); <https://www.ama-assn.org/delivering-care/public-health/harvard-epidemiologist-beware-COVID-19-s-second-wave-fall> (accessed Aug. 25, 2020); <https://www.ecowatch.com/coronavirus-second-wave-2646019222.html?rebelltitem=3#rebelltitem3> (accessed Aug. 25, 2020).

³⁵ MP Ward et al., "The Role of Climate During the COVID-19 Epidemic in New South Wales, Australia," *Transbound Emerg. Dis.* (2020), <https://doi.org/10.1111/tbed.13631> (accessed Aug. 25, 2020).

³⁶ <https://www.cdc.gov/flu/pandemic-resources/1918-commemoration/three-waves.htm> (accessed Aug. 25, 2020).

³⁷ <https://www.cdc.gov/vaccines/basics/test-approve.html> (accessed Aug. 25, 2020).

³⁸ <https://www.nih.gov/news-events/news-releases/nih-clinical-trial-investigational-vaccine-COVID-19-begins> (accessed Aug. 25, 2020)

³⁹ <https://cen.acs.org/pharmaceuticals/vaccines/Adenoviral-vectors-new-COVID-19/98/i19>

theoretically possible, have never been used in humans, much less for a licensed vaccine. Dose and timing of vaccine administration are further variables that need to be evaluated, all of which takes time.

23. Clinical development involves a three-phase process. Phase I is designed to evaluate the most frequent and serious adverse effects in a small number of healthy people.⁴⁰ Once that is determined, in Phase II, the clinical trials are expanded to a larger group of persons whose characteristics (age and physical health) are similar to those for whom the new vaccine is intended. In Phase III, the efficacy and safety of the vaccine is tested in thousands of people. Whether or not the vaccine protects can be difficult to assess and requires a long time as it would be unethical to expose volunteers to the virus to see if they become infected. It also takes a long time to determine if the vaccine causes side effects, as these issues may not become apparent for months. Once a candidate vaccine is deemed safe and effective, manufacturing capacity must be geared up to produce the vaccine on a large scale. Quality control for the vaccine in this increased production is extremely important. Vaccines are given to healthy people and so the bar for safety and effectiveness must be higher than for drugs given to sick people who may be more willing for trade-offs if there are no other options. Another issue in developing vaccine candidates is efficacy in populations for whom the vaccine is particularly important. While every person is at risk of infection if they do not have antibodies, infection is particularly likely to have severe outcomes in vulnerable populations such as older individuals and those with underlying medical conditions. A vaccine that works well in a young, healthy population may not be efficacious in these subpopulations whose immune response is suboptimal and so further vaccine work may be required to protect those most at risk.

⁴⁰ <https://www.clinicaltrials.gov/ct2/help/glossary/phase> (accessed Aug. 25, 2020).

24. Herd immunity occurs when a high percentage of people in a community become immune to an infectious disease (one that is spread person to person) that its transmission slows down or stops altogether. This can occur naturally through widespread infection or through vaccination. In most cases, 80-95% of the population must be immune for herd immunity to occur. Herd immunity protects those in the community who cannot be vaccinated and for whom infection may be very serious, e.g., babies, seniors, immunocompromised, cancer patients.⁴¹

25. Based on my experience, without herd immunity in place, it is highly unlikely that the novel coronavirus will disappear by itself. As it is a new virus, no one in the world is immune (except for those who have recently become infected and recovered from the illness), and serological prevalence studies show an average of 4-5% of various populations with antibodies. Although tests to determine whether someone has antibody immunity are not highly specific, it is unlikely that a high percent of the population is immune. A recent CDC study of immune levels in ten U.S. cities found only between 1.0 to 6.9% of those tested had evidence of previous immunity and were presumably immune.⁴² Another caveat is that we do not know how long immunity to this new virus lasts and whether reinfection can occur. However, decades of research on other coronaviruses have shown that protective immunity is short-lived.⁴³ This means that even those who have acquired some immunity from the virus due to being exposed but recovered this year may lose that immunity in a matter of months. Thus, achievement of herd immunity is unlikely to happen before a vaccine is available.

⁴¹ <https://www.healthline.com/health/herd-immunity#how-it-works> (accessed Aug. 25 2020).

⁴² Havers FP, Reed C, Lim T, et al. "Seroprevalence of Antibodies to SARS-CoV-2 in 10 Sites in the United States, March 23-May 12, 2020," JAMA Internal Med. (July 21, 2020), doi:10.1001/jamainternmed.2020.4130.

⁴³ Arthur W.D. Edridge et al, "Human Coronavirus Reinfection Dynamics: Lessons for SARS-CoV-2," (June 16, 2020), <https://www.medrxiv.org/content/10.1101/2020.05.11.20086439v1.full.pdf>.

COVID-19 AND TEXAS

26. Texas is currently seeing a decrease in new COVID-19 cases and hospitalization rates, although these rates remain at high levels. As of August 21, 2020, 567,500 cases have been reported with over 11,000 deaths (however, a backlog of test results suggests these are undercounts). Texas continues to average thousands of new confirmed cases daily.⁴⁴ The 14-day trend of COVID-19 testing positivity rates is at 19.2%. Both hospital and ICU beds have a low availability. The case fatality rate is at 2.0%.⁴⁵

27. Texas currently has no stay at home order.⁴⁶ Although Governor Abbott issued a mask order effective on July 3, 2020, it is not uniformly enforced.⁴⁷ We will surely see this increase in the number of infected persons continue, in my expert opinion, as this very infectious virus is still prevalent, there is no vaccine, and no herd immunity. Pushback against non-pharmaceutical interventions such as physical distancing⁴⁸ and mask-wearing⁴⁹ will only exacerbate transmission of the SARS-CoV-2 virus. Even if Texas was able to “flatten the curve” and decrease the rising rate of infections, travel in and out of state by Texans or visitors to Texas via states with a higher level of infection could import infection and lead to community spread in Texas. As with the rest of the United States, it is likely that coronavirus will be present in Texas

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<https://txdshs.maps.arcgis.com/apps/opsdashboard/index.html#/ed483ecd702b4298ab01e8b9cafc8b83> (accessed Aug. 22, 2020).

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https://www.covidexitstrategy.org/?utm_campaign=wp_the_health_202&utm_medium=email&utm_source=newsletter&wpisrc=nl_health202 (accessed Aug. 22, 2020)

⁴⁶ <https://www.texastribune.org/2020/06/29/texas-coronavirus-stay-at-home-harris-dallas/>

⁴⁷ <https://www.texastribune.org/2020/07/09/texas-mask-order-enforcement/> (accessed Aug. 25, 2020)

⁴⁸ <https://www.unacast.com/COVID19/social-distancing-scoreboard?view=state&fips=48> (accessed Aug. 25, 2020).

⁴⁹ <https://www.texastribune.org/2020/05/22/texas-coronavirus-masks/> (accessed Aug. 25, 2020).

in November and that associated needs for social distancing, frequent hand-washing, sanitizing high-touch surfaces, and protective wear will be needed.

28. Recent reports are showing that the number of new cases may be beginning to stabilize in Texas after peaking in July.⁵⁰ While this is promising, the rate of new cases remains in the thousands, meaning that thousands of Texans are being infected each day. The rate of new cases is also high relative to the prior months of March, April, May, and the first few weeks of June. While the positivity rate in Texas has also trended down over the past few days, it still remains above the recommended 5% threshold. Although it is difficult to say with certainty what exactly is causing the stabilizing because there are many variables, it is possible that Texas's recent mask and social distancing mandates are contributing factors. More time is needed to see if the number of daily cases holds steady or declines, which, in turn, should lead to fewer hospitalizations and deaths. There is concern among public health officials the Labor Day holiday weekend may result in widespread gatherings as seen over the Fourth of July weekend.⁵¹ There also is concern that the start of face-to-face school will lead to an upsurge of cases in September as seen in other states.⁵²

29. In my expert opinion (and consistent with CDC guidelines), for the upcoming November election in Texas, precautions will need to be in place for public health and safety, given that it is highly likely that the virus will be circulating during voting season. These

⁵⁰ <https://www.texastribune.org/2020/07/24/greg-abbott-texas-lockdown-mask/>.

⁵¹ <https://www.nbcnews.com/news/us-news/big-crowds-celebrated-4th-july-coronavirus-cases-spike-across-country-n1232968>

⁵² <https://www.reformaustin.org/coronavirus/abbott-labor-day-cant-be-like-memorial-day/>;
<https://www.edweek.org/ew/articles/2020/08/13/schools-reopen-and-covid-19-cases-crop-up.html>

precautions fall under three mitigation techniques; masks, physical distancing, and environmental sanitation.

30. Notably, voters are not the only ones who face increased risk of infection. Poll workers who are often older and at an increased risk of severe outcome should they become infected are also at risk. Transmission is a significant risk at polling places because infected people who are asymptomatic or presymptomatic—and therefore have not been tested or do not know that they have the disease—are contributing to spread of the virus.⁵³ Therefore, a voter going to the polls or a poll worker could infect others without knowing they themselves are infected. Moreover, given their central role in facilitating the voting process, poll workers will experience significantly more contacts (and opportunities for infection) with other individuals during Election Day than will the average voter. In any event, voters and poll workers who do become infected with the SARS-CoV-2 virus can further spread it to others in their household.

31. One of the ways the virus can be transmitted is through touching an environmental surface contaminated with the virus. A recent review of other coronaviruses found they could survive from 2 hours to 9 days, depending on the type of surface, temperature, and humidity.⁵⁴ Touching the same piece of paper, voter ID, voting machine, etc. during the voting process has the potential to contribute to virus transmission. Procedures that reduce the amount of paperwork required to be handed back and forth between voter and poll worker and disinfection of pens, voting machines, and other common surfaces will reduce the probability of virus transmission.

⁵³ <https://science.sciencemag.org/content/early/2020/03/24/science.abb3221>

⁵⁴ [https://www.journalofhospitalinfection.com/article/S0195-6701\(20\)30046-3/fulltext](https://www.journalofhospitalinfection.com/article/S0195-6701(20)30046-3/fulltext)

32. The main route of virus transmission is through the air. Factors that increase probability of transmission include indoor space, close contact, crowding, and duration of contact (longer than 15 minutes).⁵⁵ Public health measures to stop transmission, therefore, include mandating mask wearing for voters. For safer voting, the number of voters at the polling place at any one time needs to be minimized. This can be done through an adequate number of polling places (i.e., no current polling places close, number of polling places expanded) and use of hand-marked paper ballots to speed up both time in line and time voting. Polling places should be located where physical distancing and adequate airflow can be accomplished, for example, large gyms. Mobile voting should be reinstated to increase the number of polling places and reduce time spent on public transit to get to the polls in rural areas. The early voting time period should be expanded to reduce the number of persons voting on Election Day. Expanded voting times on Election Day will spread out voter density throughout the day.

33. Poll workers are at a heightened risk of acquiring SARS-CoV-2 infection as they come in contact with a large number of people on voting days and must share space with other poll workers. Poll workers should have access to personal protective equipment including fitted N95 masks. Because older workers are at a higher risk of serious outcome should they become infected, efforts need to be made to ensure that poll workers represent a variety of ages, not just those over 60.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Executed in Harris County, State of Texas, on the 26th day of August 2020.

⁵⁵ <https://www.cdc.gov/coronavirus/2019-ncov/php/public-health-recommendations.html> (accessed Aug. 21, 2020)

Catherine Troisi Digitally signed by Catherine Troisi
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Catherine L Troisi

APPENDIX A

CATHERINE L. TROISI

B.A., M.S., Ph.D.

August, 2020

CONTACT INFORMATION

University of Texas
School of Public Health
PO Box 20186
Houston, TX 77225

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PRIMARY APPOINTMENT - CURRENT

ASSOCIATE PROFESSOR 2010 TO PRESENT (TENURED)

Primary Appointment: Management, Policy, & Community Health (tenure track)
Secondary Appointment: Epidemiology, Human Genetics, and Environmental Sciences
Co-Coordinator, Leadership Theory and Practice Certificate
University of Texas (UTHealth) School of Public Health, Houston, TX

DUAL/JOINT APPOINTMENT

ADJUNCT FACULTY, DIVISION OF MOLECULAR VIROLOGY AND MICROBIOLOGY

Baylor College of Medicine, Houston, TX

EXPERIENCE & SERVICE

PUBLIC HEALTH PRACTICE

- Director, Office of Public Health Practice, 2008 - 2010, Houston Department of Health and Human Services
- Incident Commander, Public Health, 2009 N1H1 Response, Houston Department of Health and Human Services
- Incident Commander, Public Health, 2005 City of Houston Hurricane Katrina shelter at George R. Brown Convention Center
- Assistant Director, Disease Prevention & Control, Houston Department of Health and Human Services, 2004-2008
- Bureau Chief, HIV/STD Prevention, Houston Department of Health and Human Services, 2003-2004

ACADEMIC APPOINTMENTS

- Assistant Professor (non-tenure research track appointment), Biological Sciences (secondary appointment in Epidemiology) and Member, Center for Infectious Diseases, University of Texas - Houston Health Science Center School of Public Health, Houston, TX, 1997 - 2000 (75% FTE), 2000-2003 (100% FTE)
 - Associate Director, Center for Infectious Diseases, UT-Houston, Health Science Center, School of Public Health, Houston, TX, 2001 - 2003
- Assistant Professor (non-tenure research track appointment), Department of Virology and Epidemiology, Baylor College of Medicine, 1983 - 1991 (62.5% FTE), 1991-1996; name changed to Division of Molecular Virology (70% FTE)

- Supervisor, Eugene B. Casey Hepatitis and HIV Research and Diagnostic Laboratories, Baylor College of Medicine, Houston, TX, 1989 - 1996
- Coordinator, Virology Reference Laboratory, Virology QA Program, DAIDS, Division of Molecular Virology, Baylor College of Medicine, Houston, TX, 1992 – 1993

EDUCATION

University of Michigan, Ann Arbor, MI, Ph.D., 1980, Epidemiological Sciences

- Thesis: Influenza, type C; Antibody Detection & Epidemiology
- Chairs: Arnold Monto, M.D. and H.F. Maassab, Ph.D.

Michigan State University, E. Lansing, MI, M.S., 1975, Biochemistry

- Thesis: Biochemical Effects of Polybrominated Biphenyls on Microsomal Enzymes
- Chair: Steven Aust, Ph.D.

University of Rochester, Rochester, NY, B.A., 1974, Chemistry

LEADERSHIP TRAINING

- National Public Health Leadership Institute, University of North Carolina, Class of 2010

HONORS & AWARDS

- Excellence in Community Service Award, UTSPH, 2019
- Association of Schools and Programs in Public Health Service Award, 2018
- Nominated by UTHealth for Association of Schools and Programs in Public Health Teaching Excellence Award, 2017
- Excellence in Teaching Award, UTSPH, 2017
- American Public Health Association Advocate of the Year Award, 2015
- Advocate Spotlight, The Immunization Partnership, 2015
- Excellence in Community Service Award, UTSPH, 2013
- Elected Fellow, Texas Public Health Association, 2012
- Outstanding Service Award, Texas Public Health Association, 2010
- Eugene B. Casey Fellow, 1985-1990
- Fellowship, University of Michigan 1977-1980
- Elected to Sigma Xi (Scientific Honor Society), 1979

INSTITUTIONAL COMMITTEE ACTIVITIES

INTERNAL SERVICE

- Program Lead, Community Health Practice program, 2017-present
- Co-coordinator, Leadership Studies Certificate (previously concentration), 2011-present
- UTSPH Academic Council, 2018 to present
 - UTSPH School-wide Curriculum Committee, 2012 – 2015; 2018 - present
 - UTSPH Grievance Committee, 2018 – present
- Faculty Advisor, Society for Women & Leadership, 2017-present
- UTSPH Faculty Awards Committee, 2016 – present; Chair, 2019 – present
- UTSPH Six year Review Committee, 2018- present

- UTSPH CEPH Accreditation Committee, 2017 – 2019
- UTHealth Committee on the Status of Women 2014 - 2018
- UTSPH Practice Committee, 2008 - 2018
- Chair, HHD Accreditation Coordination Group, 2008 - 2010
- HHD representative to Texas Medical Center Policy Advisory Committee, 2008 - 2010
- HDHHS Legislative Liaison to Mayor's Office, 2008 - 2010
- Investigative Review Committee, HDHHS, Chair, 2008 - 2010
- Epidemiology Committee of Greater Houston Partnership Public Health Task Force, 2004
- State of Emergency Task Force (HIV in the African-American Community), 2003 - 2008
- Member, Quality Improvement Committee - Eugene B. Casey Hepatitis and HIV Laboratory, Baylor College of Medicine, 2003 - present
- Representative for Disease Control and Epidemiology, UT School of Public Health Admissions Committee, 2000 - 2003
- University of Texas - Houston Health Science Center Interinstitutional Biosafety Committee, 1997 – 2003

CONSULTANTSHIPS

- Coalition for the Homeless, 2010-present
- Texas Association of Local Health Officials, 2010, 2011
- Consultant/Mentor, "Bridging the Gap: Addressing Environmental Health Through Science," (collaboration between UTMDACC, UTHSC-Houston, Baylor College of Medicine, Prairie View A&M, PVAM College of Nursing, University of Houston, Texas Southern University, Rice University, San Jacinto College and Lee College, as well as School Districts and Communities in Houston, Baytown, Fresno, and La Joya), L. Jones, PI, 2003 - 2008
- Grant writer for National Hemophilia Foundation, 1996

RESEARCH (LAST THREE YEARS)

ACTIVE GRANTS AND CONTRACTS:

Liver Cancer Prevention among those with Experiences of Homelessness \$1,159,751

V. Schick, PI Cancer Prevention Research Institute of Texas 8/31/2018-8/30/2021

The purpose of this prevention grant is to screen residents of permanent supportive housing for hepatitis B and C, link to care, and treat HCV using a community health worker model.

Role: Co-Principal Investigator

National HIV Behavioral Surveillance among MSM, IDUs, and Heterosexuals in Houston (UT Title: Behavioral Surveillance Services Agreement) \$1,468,436

U62/CCU606238 Khuwaja, PI; Houston Health Department) 1/1/2016 – 12/31/2020 CDC/ NCHSTP (1U62PS000977-01)

The purpose of this Agreement is to develop and conduct HIV Behavioral Surveillance activities in Houston/Harris County among men who have sex with men, injection drug users, and heterosexuals living in high-risk areas of Houston. This is a CDC funded project, funded through the Houston Department of Health.

Role: Subcontractor PI (20% FTE)

Screening for Hepatitis B and C for Primary Prevention of HCC

Mitral, PI, Baylor College of Medicine). CPRIT. 8/31/2016-8/31/2020 \$202,568

To develop and deliver a community based educational program on viral hepatitis and hepatocellular carcinoma.

The UTSPH subcontract is for community engagement, education, and referral to testing.

Role: PI, Subcontract (15%)

COMPLETED:

Improving Access to Care Using Community Health Workers

Fox, PI, Boston University 09/01/2016 - 08/31/2019 US Health Services and Resources Administration \$24,448

Improving access to care: using community health workers to improve linkage and retention in HIV care

Specifically, UT Health will work closely with the BUSPH's Training and TA Director to implement the following activities:

Review and provide feedback on the design of the needs assessment and evaluation tools for RWHAP providers on integrating CHWs into their health care team; Using the results from the needs assessment, provide expert consultation on topics to be included on the trainings, technical assistance activities and webinar courses related to CHWs ;Provide direct content expertise to support Learning Collaboratives and webinars on CHWs models; Provide input and review to the development of a CHW Implementation Guide for the Initiative; Provide technical assistance and training on integrating CHWs as part of the HIV health care team to RWHAP providers as requested.

Role: Subcontractor PI (4%)

Assessing the Needs of Rural Healthcare Providers for the Implementation of Evidence Based Practices

Troisi, PI The Immunization Partnership. 2/1/2015-8/31/2015 \$4,545

To assist with planning and evaluation methods for project, assess study design; participate with monitoring and evaluation efforts with grant partner.

Role: PI (2%)

Community Mobilization to Improve the HIV/AIDS Continuum of Care Among Black Men

5R01MH102171-02 (Kegeles, PI, University of California at San Francisco) 09/12/2013 - 07/31/2016 NIH \$147,255

Conduct extensive formative research, contact organizations providing care to HIV positive black young MSM to identify potential participants. Conduct in depth interviews with young black positive men using focus groups or other strategies to determine seeds and recruitment methods.

Role: PI, Subcontract (10%)

MULTILEVEL HIV PREVENTION INTERVENTION FOR YOUNG AFRICAN AMERICAN MEN

5R01MH096690-04 (Kegeles, PI, University of California at San Francisco) 08/01/2013 - 07/31/2016 NIH \$333,024

UT School of Public Health will administer the multilevel HIV prevention for black men to approximately 333 YBMSM in Houston each year of the project. We will recruit participants into the survey through a combination of convenience sampling of men recruited from venues popular with young black MSM, self-referrals from young black MSM who see recruitment materials in the community, and snowball referrals from other study participants. Data from the formative research will be used to identify community venues where black MSM can be recruited as well as days and times when productive recruitment activities.

Role: PI, Subcontract (15%)

Qualitative Analysis of Stakeholder Meetings

Troisi, PI, The Immunization Partnership 06/15/2016 - 08/31/2016 \$6,322

Qualitative data analysis for the immunization partnership contract. Conduct qualitative analysis on data collected during recorded Immunization Stakeholder Meetings. -Draft a report summarizing trends and outlining key findings with relevant quotations from recordings. -Respond to questions or inquiries from The Immunization Partnership staff regarding the analysis and/or report.

Role: PI (20% FTE)

GRANT REVIEWER/SERVICE ON NIH/OTHER STUDY SECTIONS

- Special Review Panel Viral Hepatitis and Liver Cancer Research: U.S.-Mongolia Pilot Collaborative Award Program, NIH/CRDF Global 2016
- Ad hoc Member, HIV/AIDS Review panel, NIH, 2008
- Ad hoc Member, Epidemiology of Diabetes, Kidney and Infectious Diseases Member Review panel, NIH, 2004
- Grant Reviewer, Paso del Norte Health Foundation/Center for Border Health Research, 2003 - 2005
- Member, EPIC (formerly Epidemiology and Disease Control-2) Study Section, NIH, 2002 - 2004; serving presently as ad hoc reviewer
- Grant Reviewer, Michael Smith Foundation for Health Research, British Columbia's premier funding agency, 2001
- Ad hoc Member, Epidemiology and Disease Control 3 Study Section, NIH, 2000 - 2002
- Special Review Panel - National Institute of Allergy & Infectious Diseases, NIH, 1997
- Ad hoc Member, Epidemiology and Disease Control-2 Study Section, NIH, 1995 - 2002
- Reverse Site Visit - National Heart, Lung, and Blood Institute, NIH, 1992
- Special Review Panel - National Institute of Allergy & Infectious Diseases, NIH, 1990

PUBLICATIONS – I10-INDEX=22; 1536 CITATIONS (GOOGLE SCHOLAR)

ARTICLES IN PEER-REVIEWED JOURNALS

<https://www.ncbi.nlm.nih.gov/sites/myncbi/1v1NFrkilz9kt/bibliography/51517383/public/?sort=date&direction=ascending>

1. Kim, H, R. Guerrero, S. Reader, M. Daheri, M. Balakrishnan, C. Troisi, H. El-Serag “Low yield of hepatitis C infection in an outreach screening program in Harris County, Texas” (2020), Infectious Disease Open Forum <https://doi.org/10.1093/ofid/ofaa191>
2. P. Aaltonen and C. Troisi “Coronavirus numbers confusing you? How to make sense of them.” July, 2020 The Conversation <https://theconversation.com/coronavirus-numbers-confusing-you-heres-how-to-make-sense-of-them-142624>

3. M Sandoval, AW Hair, SV Sharma, CL Troisi Characterizing COVID-19 case detection utilizing influenza surveillance data in the United States, January-March, 2020 medRxiv
4. Swamy, P, A Monterrey, M Wood, CL Troisi, C. Greeley Caregiver and Pediatric Health Care Provider Views on Social Needs Identification (2020) *Journal of Primary Care & Community Health* Vol 11: 1–7
5. Troisi, C The time for a Public Health Response is Now! (2018) *TPHJ* 70: 24-25
6. Balogun, T, C. Troisi, M. Swartz, L. Lloyd, R. Beyda Does Juvenile Detention Impact Health (2018) *J Correctional Health Care* 24:137-144
7. Malvisi, L., C.L. Troisi, B.J. Selwyn Analysis of the spatial and temporal distribution of malaria in an area of Northern Guatemala with seasonal malaria transmission (2018) *Parasitol Res* 117:1-16 <https://doi.org/10.1007/s00436-018-5968-6>
8. Balogun T, C Troisi, M Swartz, L Lloyd, R Beyda Does Juvenile Detention Impact Health? (2018) *J Correctional Health Care* 24:137 – 144 <https://doi.org/10.1177/107>
9. Balogun T, C Troisi, M Swartz, L Lloyd, R Beyda (2017) For Drug and Alcohol Use I Would Talk to Mom: A Mixed Methods Study of Detained Youth *Journal of Adolescent Health* 60(2):S122
10. Ahaneku H, M Ross, J NyoniJ, B Selwyn, C Troisi, J Mbwambo, A Adeboye, S McCurdy (2016) Depression and HIV Risk among Men Who Have Sex with Men in Tanzania. *AIDS Care*, 28:sup1, 140-147, DOI: 10.1080/09540121.2016.1146207
- 11. Troisi C., D’Andrea R., Grier G., Williams S. (2015). Enhanced Methodologies to Enumerate Persons Experiencing Homelessness in a Large Urban Area. *Evaluation Review*. 39(5) 480-500. DOI: [10.1177/0193841X15610191](https://doi.org/10.1177/0193841X15610191)**
12. Obinani C, Lloyd L, Ross M, Troisi C, Onweagba A, Ohazurike N, Chukwu A. 2014 The Development of Poultry Farm Risk Assessment Tool for Avian Influenza in Imo State, Nigeria *Preventive Veterinary Medicine*, 116:145-150
13. Tran TQ, CZ Grimes, D Lai, CL Troisi, LY Hwang. 2012 “Effect of age and frequency of injections on immune response to hepatitis B vaccination in drug users.” *Vaccine*. 30(2):342-9. PMID: 22075088
- 14. Shahani, L, C. Hartman, C. Troisi, D. Hewett-Emmett, A. Kapadia and T. Giordano. 2012 “Causes of Hospitalization and Perceived Access to Care Among Persons Newly Diagnosed With HIV Infection: Implications for HIV Testing Programs.” *AIDS Patient Care and STDs*. 2012 PMID: 22149765**
15. Troisi, CL, S.L. Williams and L. Lane. "The Future of Public Health." 2011, *Texas Journal of Public Health*. 63(2): 25-28.
- 16. Hwang LY, C. Grimes, T.Q. Tran, A. Clark, R. Xia, D. Lai, C.L. Troisi, M. Williams. 2010, *Journal of Infectious Diseases*. Accelerated Vaccine Schedule Improves Hepatitis B Vaccination Adherence and Immune Protection among Drug Users - A Randomized Controlled Trial in Urban Communities in Houston, Texas. 202: 1500-1509. PMID: 20957504.**
17. Coker AL, J.S. Hanks, K.S. Eggleston, J. Risser, P.G.Tee, K.J. Chronister, C.L. Troisi, R. Arafat, L. Franzini. 2006 “Social and mental health needs assessment of Katrina evacuees.” *Disaster Management Response*. 2006. 4(3): 88-94.

18. Hwang LY, JR Kramer, CL Troisi, L Bull, CZ Grimes, R Lyerla, MJ Alter. 2006 "Relationship of Cosmetic Procedures and Drug Use to Hepatitis C and Hepatitis B Virus Infections in Low Risk Population" *Hepatology*. Vol. 44(2): 341-351
19. Giordano, TP, F Vinegarwala, AC White, Jr, CL Troisi, RF Frankowski, CM Hartman, and RM Grimes. 2005 Patients referred to an urban HIV clinic frequently fail to establish care: factors predicting failure, *AIDS Care*; 17: 773-783.
20. Stancoven, K, LY Hwang, C.L. Troisi. 2005 "Significance of Anti-HBc in the Absence of Other Hepatitis B Markers in a College-aged Population", *Intervirology*. 48: 273-278.
21. Zhao H, H.B. Grossman, G.L. Delclos, L-Y Hwang, C.L. Troisi, R.M. Chamberlain, M.A. Chenoweth, H. Zhang, M.R.Spitz, X. Wu. 2005 "Increased plasma levels of angiogenin and risk of bladder cancer: from initiation to recurrence" *Cancer*. 104: 30-35.
22. Monga, H.K., C.L. Troisi, M.B. Rodriguez, B. Yoffe 2001 "Hepatitis C virus infection-related morbidity and mortality among patients with human immunodeficiency virus infection." *Clin Infect Dis* 33: 240-247.
23. Troisi, C.L. and F.B. Hollinger. 1997 "Detection of Antibodies to Hepatitis C Virus in Seronegative Patients Using an Immune Complex Dissociation Assay" *J. Viral Hepatitis* 4/6, p 383-386
24. Troisi, C.L., F. B. Hollinger, D. S. Krause, and L. Pickering. 1997 "A Comparative Study in Infants of Two Hepatitis A Vaccine Dosing Schedules." *Vaccine*. 15: 1613-1617
25. Troisi, C.L., F. B. Hollinger, D. Krause, and L. Pickering. 1997 Immunization of Infants with Hepatitis A Vaccine (HAVRIX): A comparative study of two dosing schedules *Viral Hepatitis and Liver Disease*, M. Rizzetto, ed, pgs 936-938
26. Troisi, C.L., F. B. Hollinger, and the Delta Hepatitis Study Group. 1997 "Interactions between hepatitis C and HIV in hemophiliacs: Results of a 7-year follow-up study". *Viral Hepatitis and Liver Disease*, M. Rizzetto, ed., pgs 258-260.
27. Troisi, C.L., F. B. Hollinger, D. Krause, and L. Pickering. 1997 Immunization of Infants with Hepatitis A Vaccine (HAVRIX): A comparative study of two dosing schedules *Viral Hepatitis and Liver Disease*, M. Rizzetto, ed, pgs 936-938
28. Troisi, C.L., F. B. Hollinger, and the Delta Hepatitis Study Group. 1997 "Interactions between hepatitis C and HIV in hemophiliacs: Results of a 7- year follow-up study". *Viral Hepatitis and Liver Disease*, M. Rizzetto, ed., pgs 258-260.
29. Sönmez, E., C. Troisi, F.B. Hollinger, H-J. Lin, M. Naem. 1996. "Detection of Hepatitis C Virus RNA by PCR in Hemophiliac Patients". *Journal of Turgut Özal Medical Center* 3: 294-298.
30. Sönmez, E., C. Troisi, F.B. Hollinger, H-J. Lin, M. Naem 1996. "Screening of Blood Donors for HCV RNA by RT-PCR." *Journal of Turgut Özal Medical Center* 3: 303-305.
31. Troisi, C.L., F.B. Hollinger, K. Hoots, C. Contant, J. Gill, M. Ragni, R. Parmley, C. Sexauer, E. Gomperts, G. Buchanan, B. Schwartz, S. Adair, H. Fields. 1993. A multicenter study of viral hepatitis in a United States hemophilic population *BLOOD* 81: 412-418.
32. Troisi, C.L., F.B. Hollinger, K. Hoots et al. 1990. Delta Hepatitis and Liver Disease in Hemophiliacs. *Viral Hepatitis and Liver Disease*. Hollinger, FB, SM Lemon, and HS Margolis, eds. Williams and Wilkins, Baltimore. 487-491.
33. Troisi, C.L. and F.B. Hollinger. 1987. Current anti-HBc tests used to screen donors for non-A, non-B hepatitis are comparable to the original anti-HBc assay. *Transfusion* 27: 438-440.

34. Hollinger, F.B., C.L. Troisi, D.A. Heiberg, Y. Sanchez, G.R. Dreesman, and J.L. Melnick. 1986. Response to a Hepatitis B Polypeptide Vaccine in Micelle Form in a Young Adult Population. *J. Med. Virol.* 19: 229-240.
35. Pepe, P.E., F. B. Hollinger, C.L. Troisi, and D.A. Heiberg. 1986. Viral Hepatitis Risk in Urban Emergency Medical Service Personnel. *Ann. Emer. Med.* 15: 454-457.
36. Hollinger, F.B., C.L. Troisi, and P.E. Pepe. 1986. Anti-HBs Responses to Vaccination with a Human Hepatitis B Vaccine made by Recombinant DNA Technology in Yeast. *J. Infect. Dis.* 151: 153-159.
37. Pepe, P.E., C.L. Troisi, D.A. Heiberg, and F.B. Hollinger. 1985. Viral Hepatitis Risk in Urban EMS Personnel. *Ann. Emer. Med.* 14: 513.
38. Troisi, C.L., D.A. Heiberg, and F.B. Hollinger. 1985. Normal Immune Responses in Persons with Down's Syndrome to Hepatitis B Vaccine. *J.A.M.A.* 254: 3196-3199.
39. Troisi, C.L. and F.B. Hollinger. 1985. Detection of an IgM Anti-idiotypic Directed Against Anti-HBs in Hepatitis B Patients. *Hepatology* 5: 758-762.
40. Hollinger, FB, Y. Sanchez, C. Troisi, GR Dreesman, JL Melnick 1984 "Immunogenicity and Reactogenicity of New Hepatitis-B Vaccines" *Hepatology* 4 (5), 1027-1027
41. Chin, T., F.B. Hollinger, R. Rich, C.L. Troisi, G. Dreesman, and J.L. Melnick. 1983. Cytotoxicity by NK-like Cells from Hepatitis B Immune Patients to a Human Hepatoma Cell Line Secreting HBsAg. *J. Immunology* 130: 173-180.
42. Troisi, C.L., and A.S. Monto. 1981. Comparison of ELISA and HAI in a Seroepidemiological Study of Influenza, Type C Infection. *J. Clin. Micro.* 14: 516-521.

BOOK CHAPTERS

43. Troisi, C.L. and F.B. Hollinger. "Overview of Clinical Trials in Low Endemic Areas" In: *Hepatitis B Vaccines in Clinical Practice*, Ronald Ellis, ed., marcel dekker, New York, p179-208, 1993.
44. Troisi, C.L. and F.B. Hollinger. "Hepatitis B Vaccines" In: *Progress in Liver Disease*, vol IX. H. Popper and F. Schaffner, eds, W.B. Saunders Co., Orlando, 1990

INVITED TALKS, PRESENTATIONS, AND POSTER SESSIONS (LAST FOUR YEARS)

1. Awareness of HIV Sero-status and Sexual Risk Behaviors Among High Risk Heterosexuals in HMA (poster presentation)
T. Z. Win, P. Wermuth, C. Troisi
Texas Public Health Association annual meeting, March 2016. Galveston, TX
2. Houston's 2016 Point-in-Time Count (invited talk)
Coalition for the Homeless of Houston/Harris County Lunch and Learn, June 2016
3. YouthCounts! in Houston, Texas: A needs assessment (poster presentation)
C. Troisi, G. Grier, W. Fleming
Presented at the American Public Health Association annual meeting, Nov 2016, Denver, CO
4. Houston's 2017 Point-in-Time Count (invited talk)
Coalition for the Homeless of Houston/Harris County Lunch and Learn, June 2017
5. Houston's 2018 Point-in-Time Count (invited talk)
Coalition for the Homeless of Houston/Harris County Lunch and Learn, June 2018
6. Public Health Advocacy: Invited talk at the Houston Global Health Collaborative 7th Annual Global Health Conference March 2019

7. Covid-19 Pandemic webinar 2020 National Association of Business Executives
8. Covid-19 Pandemic webinar 2020 National Club Association
9. Covid-19 Pandemic webinar 2020 National Institute of Metal Recyclers
10. Covid-19 Pandemic webinar II 2020 National Association of Business Executives
11. Covid-19 Pandemic webinar Q and A 2020 National Club Association
12. Covid-19 Pandemic webinar 2020 Urban Land Institute
13. Covid-19 Pandemic webinar 2020 Houston YMCA
14. Covid-19 Pandemic webinar 2020 – Dept of Management, Policy, and Community Health, UTHealth School of Public Health
15. The Perfect Pandemic webinar 2020 – Houston chapter, American College of Healthcare Executives
16. Covid-19 Pandemic webinar 2020 National Club Association webinar
17. Town Hall on Covid-10 with Representative Lizzie Fletcher

NON-PEER REVIEWED PUBLICATIONS

1. Houston/Harris County/Ft Bend County Point-in-time Enumeration: 2012 Executive Summary C. Troisi and the Coalition for the Homeless of Houston/Harris County
<http://www.homelesshouston.org/wp-content/uploads/2012/08/2012-PIT-Executive-summary-final.pdf>
2. Perceived needs of homeless persons in Houston/Harris County, 2012 CL Troisi, R D’AndreaLee, RJ Stoll and the Coalition for the Homeless of Houston/Harris County
3. Houston/Harris County/Ft Bend County Point-in-time Enumeration: 2013 Executive Summary C. Troisi and the Coalition for the Homeless of Houston/Harris County
<http://www.homelesshouston.org/wp-content/uploads/2014/06/2013-PIT-Executive-summary-final.pdf>
4. Perceived Needs of Homeless Persons in Houston/Harris County, 2012 C. Troisi, R. D’Andrea Lee, R. Stoll
<http://www.homelesshouston.org/wp-content/uploads/2012/12/2012NeedsAssessmentReport-Aug23.pdf>
5. Houston/Harris County/Ft Bend County Point-in-time Enumeration: 2014 Executive Summary C. Troisi and the Coalition for the Homeless of Houston/Harris County
<http://www.homelesshouston.org/wp-content/uploads/2014/05/2014-PIT-Executive-summary-final.pdf>
6. Houston/Harris County/Ft Bend County Point-in-time Enumeration: 2015 Executive Summary C. Troisi and the Coalition for the Homeless of Houston/Harris County
<http://www.homelesshouston.org/wp-content/uploads/2012/08/2012-PIT-Executive-summary-final.pdf>
7. Houston/Harris County/Ft Bend County Point-in-time Enumeration: 2016 Executive Summary C. Troisi and the Coalition for the Homeless of Houston/Harris County
<http://www.homelesshouston.org/wp-content/uploads/2016/06/2016-PIT-Executive-Summary-v4.pdf>
8. Houston/Harris County/Fort Bend County/Montgomery County 2017 Point-in-Time Count Report C. Troisi, R. Stoll, and the Coalition for the Homeless of Houston/Harris County for The Way Home Continuum of Care.
<http://www.homelesshouston.org/wp-content/uploads/2017/06/2017-Executive-Summary-Final-revised-after-HUD-review.pdf>

9. Houston, Pasadena, Harris, Fort Bend, and Montgomery Counties 2018 Point-in-Time Homeless Count & Survey Report C. Troisi and the Coalition for the Homeless of Houston/Harris County for The Way Home Continuum of Care.
<http://www.homelesshouston.org/wp-content/uploads/2018/05/052418-Final-2018-Homeless-Count-Executive-Summary.pdf>
10. Houston, Pasadena, Harris, Fort Bend, and Montgomery Counties 2019 Point-In-Time Homeless Count & Survey Independent Analysis C Troisi and the Coalition for the Homeless of Houston/Harris County for The Way Home Continuum of Care
<http://www.homelesshouston.org/wp-content/uploads/2019/05/2019-PIT-Report-Final.pdf>
11. Houston, Pasadena, Harris, Fort Bend, and Montgomery Counties 2020 Point-In-Time Homeless Count & Survey Independent Analysis C Troisi and the Coalition for the Homeless of Houston/Harris County for The Way Home Continuum of Care
https://irp-cdn.multiscreensite.com/2d521d2c/files/uploaded/FINAL%202020%20PIT%20Report_Pgs.pdf

READER ESSAYS AND LETTERS TO THE EDITOR (LTE) ON PUBLIC HEALTH TOPICS:

1. Flu, not Ebola, a pandemic threat to U.S., C. Troisi, Houston Chronicle, September, 2014
2. Surgeon General nominee right for post, C. Troisi, Houston Chronicle, December, 2014
3. Measles outbreak may be difficult to stop, C. Troisi, Houston Chronicle, February 2015
4. Climate change worsens our health, C. Troisi and K. Zhang, Houston Chronicle, September 2015
5. Public health approach can stem gun violence, C. Troisi and S. Williams, Houston Chronicle, February 2016
6. Raise tobacco age to 21, C. Troisi, Houston Chronicle, May 2016
7. Raise tobacco age to 21, C. Troisi, Austin Statesman, May 2016
8. We can stem gun deaths the same way we lowered auto deaths, C. Troisi and S. Williams, Austin Statesman, June 2016
9. Bike safety starts with wearing helmets, C. Troisi, Ft. Worth Star Telegram, June, 2016
10. Bike safety starts with wearing helmets, C. Troisi, Houston Chronicle, June, 2016
11. Zika virus funding (LTE), C. Troisi, Houston Chronicle, July 2016
12. Syringe Service Programs Save Lives, C. Troisi, Austin Statesman, November 2016
13. Is Cold War era 'duck and cover' reality of the future?, C Troisi, Houston Chronicle, April 2017
14. Public Health Prevention Fund, C. Troisi, Austin Statesman June 2017
15. Better Care Reconciliation Act and Prevention Fund, C. Troisi, Houston Chronicle, June 2017
16. ACA and Public Health funding (LTE), C. Troisi, Houston Chronicle, September 2017
17. What should you do if told to self-quarantine, P Bray and C. Troisi, Houston Chronicle, March 2020
18. A Deficit in Public Health workers is no way to fight covid-19. R. Wilson, C. Troisi, T Gary-Webb Stat News.com, April 2020 <https://www.statnews.com/2020/04/05/deficit-public-health-workers-no-way-to-fight-covid-19/>
19. You may have coronavirus even with a negative test. C. Troisi and A. Khoei Houston Chronicle April 2020 <https://www.houstonchronicle.com/opinion/outlook/article/You-may-have-coronavirus-even-with-negative-test-15213226.php>
20. Support public health epidemiologists to end this. C. Troisi, R. Taylor-Wilson, T. Gary-Webb Houston Chronicle April 2020 <https://www.houstonchronicle.com/opinion/outlook/article/Support-public-health-epidemiologists-to-end-this-15224654.php>

21. Why we're not ready to require "immunity passports" C. Troisi and A. Khoei June 2020 Austin American-Statesman <https://www.statesman.com/opinion/20200603/opinion-why-were-not-ready-to-require-immunity-passports> "

INVITED LEGISLATIVE TESTIMONY

1. US House of Representatives Committee on Homeland Security, Ebola Preparedness, October 2014 Dallas, TX
2. Governor Perry's Task Force on Public Health Prevention, Ebola Preparedness, October 2014, Austin, TX
3. Texas House County Affairs Committee, Syringe Exchange Programs, April, 2019, Austin, TX

EXPERT TESTIMONY

1. Texas 21st Judicial District, Travis County, Texas Democratic Party, et al vs. Dana Debeauvoir and the State of Texas, April 2020
2. Western District of Texas Lewis v. Hughes, No. 5:20-cv-00577
3. U.S. District Court, Eastern District of Texas, Tyler Division VIRNETX INC. AND LEIDOS, INC. V. APPLE INC Civil Action No. 6:12-cv-855
4. U.S. District Court for the Southern District of Texas, Laredo Division Texas Alliance for Retired Americans, Sylvia Bruni, DSCC, and DCCC vs. Ruth Hughes, in her official capacity as the Texas Secretary of State

EDITORIAL AND REVIEW ACTIVITIES

GUEST EDITOR

- International Journal of Environmental Research and Public Health special issue "Emerging and Reemerging Infectious Diseases" 2019

JOURNAL REVIEWER

- Review manuscripts for Cancer Epidemiology, Biomarkers and Prevention, Journal of Leadership Studies, Journal of Pediatric Infectious Diseases, Texas Public Health Journal, Journal of Infectious Diseases, Annals of Internal Medicine, JAMA, Journal of Immunology, Journal of Medical Virology, Gastroenterology, Journal of Hepatology, American Journal of Tropical Medicine, Health and Place, Evaluation Reviews, and others 1983 – present

ORGANIZATION OF NATIONAL OR INTERNATIONAL CONFERENCES/SYMPOSIA

- Member, Planning Committee, 2005 National HIV Prevention Conference sponsored by CDC, Atlanta, June, 2005; also reviewed abstracts for this committee
- US Conference on AIDS 2005, scheduled to be held in Houston, TX October 2005, Chair, Abstract Committee, (event was canceled due to Hurricane Rita)
- Foundation for International AIDS Research and Education International Conference, to be held in Houston, TX 2005, Vice co-chair, National Planning Committee

- International Symposium on Viral Hepatitis and Liver Disease, Houston, TX, Session Chair, April 1990
- International Symposium on Viral Hepatitis and Liver Disease, Houston, TX 1990, Member Local Planning Committee

PROFESSIONAL MEMBERSHIP/ACTIVITIES

PROFESSIONAL SOCIETY ACTIVITIES, WITH OFFICES HELD

Local/State

- Texas Public Health Association, 2004 - present
 - Governing Council 2010 - 2016
 - Member, 2011 Annual Educational Conference Planning Committee
 - Chair, Administration/Management Section, 2008 - 2010
- Member (ex officio), Public Health Accreditation Council of Texas, 2008 -2010
- Co-Chair, Houston Viral Hepatitis Task Force, 2017 to 2019
 - Science Officer, 2019 - present
- Houston HIV Monitoring Project Advisory Committee, 2005 – present
- Enhanced Comprehensive HIV Prevention Plan (ECHPP) Scientific Advisory Council Meeting, 2011 – present
- Texas Collaborative Center for Hepatocellular Cancer Community Outreach, 2020-present
- Co-Chair, Houston Viral Hepatitis Task Force, 2017 to 2019
 - Science Officer, 2019 - present

National

- Elected to Executive Board, American Public Health Association – 2017 – 2021
- Member, American Public Health Association, 2004 - present
 - Governing Counselor, Epidemiology Section, 2008 - 2015
 - Chair, Social Committee, Epidemiology Section, 2010
 - Co-Chair, Programming Committee, Epidemiology Section, 2011 – 2013
 - Member, Action Board, 2013- present; chair-elect 2016
 - Member, Joint Policy Committee, 2014-present, co-chair 2016
- Member, National Association of City and County Health Officials, Epidemiology Workgroup, 2009 – 2019, 2020-present
- Elected to Sigma Xi (Scientific Honor Society), member, 1979 – present

International

- Board Member, International Network for Epidemiology in Policy, 2019 -present
- Research Mentor to Assistant Professors:
 - Dr. Paige Padgett Wermuth, MPACH

COURSES TAUGHT, LAST THREE YEARS:

- PH 2998 Shoe Leather Epidemiology
 - Sole instructor
 - Spring Semester, 2019, 2020
- PH 3620, Principles and Practice of Public Health
 - Sole instructor

- Fall semester, 2013-18, Spring 2020
- PH 3998, Public Health Advocacy
 - Co-taught with Dr. G. Gemeinhardt
 - Summer semester, 2019, 2020
- PHD 3950, Advanced Leadership
 - Sole instructor
 - Spring semester, 2013-2015, 2019
- Capstone Class
 - Sole Instructor
 - Summer semester, 2017
- Proposal Development
 - Co-taught
 - Fall 2016, Spring 2017. Fall, 2019

STUDENTS ADVISED, LAST THREE YEARS:

MPH STUDENTS, ACADEMIC ADVISOR (YR, IF GRADUATED)

1. Bao, Thomas – Community Health Practice
2. Berringer, Jennifer – Community Health Practice
3. Bleiweiss, Katelyn – Community Health Practice - 2017
4. Borden, Alisha Nakia - Community Health Practice
5. Brown, Jourdan – Epidemiology - 2019
6. Chau, Dennis - Epidemiology
7. Chee, Allyson - Epidemiology -2018
8. Chima, Nneka – Community Health Practice - 2017
9. Hackett, Gabrielle, Community Health Practice
10. Hornstein, Benjamin – Epidemiology – committee member
11. Maners, Jillian – Epidemiology
12. Moher, Justin – Community Health Practice
13. Ng-Wing-Sheung, Chloe - Epidemiology
14. Ross, Lauren Elizabeth - Community Health Practice -2019
15. Ruff, Jeanne Christine – Epidemiology - 2018
16. Shah, Joel – Community Health Practice -2019
17. Spieler, Zoe - Epidemiology
18. Swamy, Padma – Community Health Practice – 2017
Pasadena-PAHC Study of Social Determinants of Health
19. Trevino, Marcus – Epidemiology
20. Tovar-Yanez, Angel – Epidemiology
21. Veerati, Tejaswi –Community Health Practice 2018
22. Villazana, Rita – Community Health Practice
23. Walker, Rachel – Community Health Practice

MS STUDENTS (ROLE INDICATED BELOW)

24. Markert, Brandi -Epidemiology (academic advisor) 2018
Usage and Awareness of Pre-Exposure Prophylaxis among MSM: Houston, 2014
25. Delgado, Nicole - Epidemiology (academic advisor) 2018
Investigation of Hantavirus and Leptospirosis as Possible Contributing Causes of Unexplained Kidney Disease Epidemic in Nicaragua

DRPH STUDENTS (ROLE AND YEAR, IF GRADUATED, INDICATED BELOW)

26. Dierschke, Nicole Adele – Community Health Practice, committee member
27. Ekworumadu, MarCia – Community Health Practice, academic advisor
28. Guerrero, Rosalia – Community Health Practice, academic advisor
29. Gruenenwald, Paul – Community Health Practice, academic advisor
30. Jackson, Haley Dyanne - Community Health Practice, academic advisor – 2019
Redesigning care: evaluation of a postpartum depression screening and treatment program in obstetric clinics in Houston, Texas
31. Dayoung, Jung – Epidemiology, committee member
32. Rallapalli, Vijayashri - Community Health Practice, academic advisor
33. Sokale, Itunu – Community Health Practice, academic advisor
34. Zangeneh, Ana - Community Health Practice, academic advisor

PHD STUDENTS (ROLE INDICATED BELOW)

35. Cunningham, Raven - Behavioral Science, dissertation committee member Spring 2017
Depression screening using smartphone technologies: A data driven approach
36. Erickson, Timothy – Epidemiology, committee member
37. Haag, Austin Jade - Management, dissertation committee member Spring 2017
Treatment Patterns and Cost Effectiveness of Adjuvant Chemotherapy Sequences among Resected Gastric Adenocarcinoma Patients: A Retrospective Analysis of Medicare Claims Data
38. Lopez, Melissa Stephanie – Epidemiology, academic advisor
39. Pelletier, Jamie – Epidemiology, dissertation committee member
40. Sanchez, Ricci - Management, dissertation committee member 2018
Navigating Health Disparities in Federally Qualified Health Centers' (FQHC) Patient-Centered Medical Homes
41. Sandoval, Micaela – Epidemiology
42. Tooker-Blue, Health – Epidemiology, committee member
43. Tremblay, Jacqueline – Epidemiology, academic advisor
44. Uppal, Tanu – Environmental Sciences, committee member
45. Watkins, Kellie Lee - Epidemiology, academic advisor 2018
Quantifying the Impact of HIV Surveillance and Care Systems on Relinkage to Care