



CENTER FOR GLOBAL HEALTH IMPACT AND INSTITUTE FOR LEADERSHIP IMPACT

 SMU | 2019-2020 REPORT





SMU[®]

The Center for Global Health Impact and the Institute for Leadership Impact are complementary programs based at Southern Methodist University in Dallas, Texas. Together, they seek to empower emerging and established leaders around the world to solve problems in public health, education, and social enterprise. Programs and investigators affiliated with the Center can be found throughout the SMU campus; the Institute is based in the Annette Caldwell Simmons School of Education and Human Development.

You can read previous impact reports of the Center [here](#) and of the Institute [here](#).



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OUR IMPACT *mapped*



CENTER AND INSTITUTE FACULTY AND STAFF CURRENTLY WORK ON THE FOLLOWING MULTINATIONAL PROJECTS: VIRTUAL REALITY SURGERY SIMULATION (INDIA, UK, USA, ZAMBIA), ELEARNING FOR HEALTH LEADERS (REPUBLIC OF THE CONGO, USA, ZAMBIA), HEALTH & ENVIRONMENT (COSTA RICA, USA)

FROM THE DIRECTOR

The year 2020 opened with a public health emergency unlike anything I have experienced in public health or medicine. The coronavirus pandemic and the ways we have responded to it have highlighted our global interconnectedness, vast disparities in health, and the vital importance of effective leaders who are guided by science in their pursuit of implementing sound public health policies.

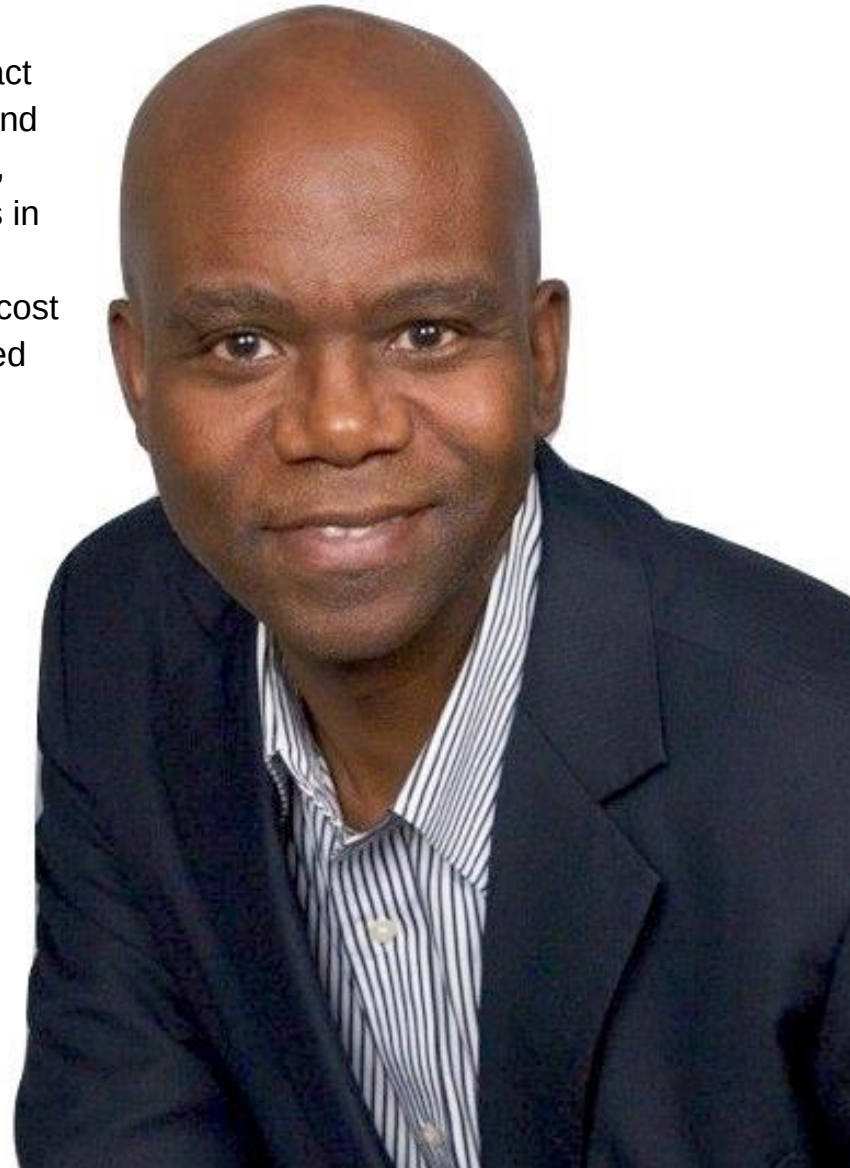
The Center for Global Health Impact and the Institute for Leadership Impact are working to help mitigate local and global challenges by synthesizing and disseminating information, creating and incubating public health solutions, and training leaders in public health, medicine, education, and other fields in partnership with many communities. The pandemic has highlighted the importance of our work in training leaders, as well as our research in low-cost virtual, mixed, and augmented reality designed to enhance evidence-based skill-building and training in communities that need it most.

This year has brought great change and uncertainty, but it has also brought me great hope. In the midst of conflict, new leaders have risen; they are listening, learning, sharing, and helping to strengthen communities to build a better and healthier future. The Center and the Institute are poised to help these leaders and others create positive, lasting impact as we tackle these shared challenges.



ERIC G. BING, MD, PH.D, MBA

**FOUNDING DIRECTOR, CENTER FOR GLOBAL HEALTH IMPACT,
INSTITUTE FOR LEADERSHIP IMPACT**



OUR MODEL

The Center and the Institute help emerging and established leaders maximize their impact in health, education, and other fields through innovative and evidence-based programs.

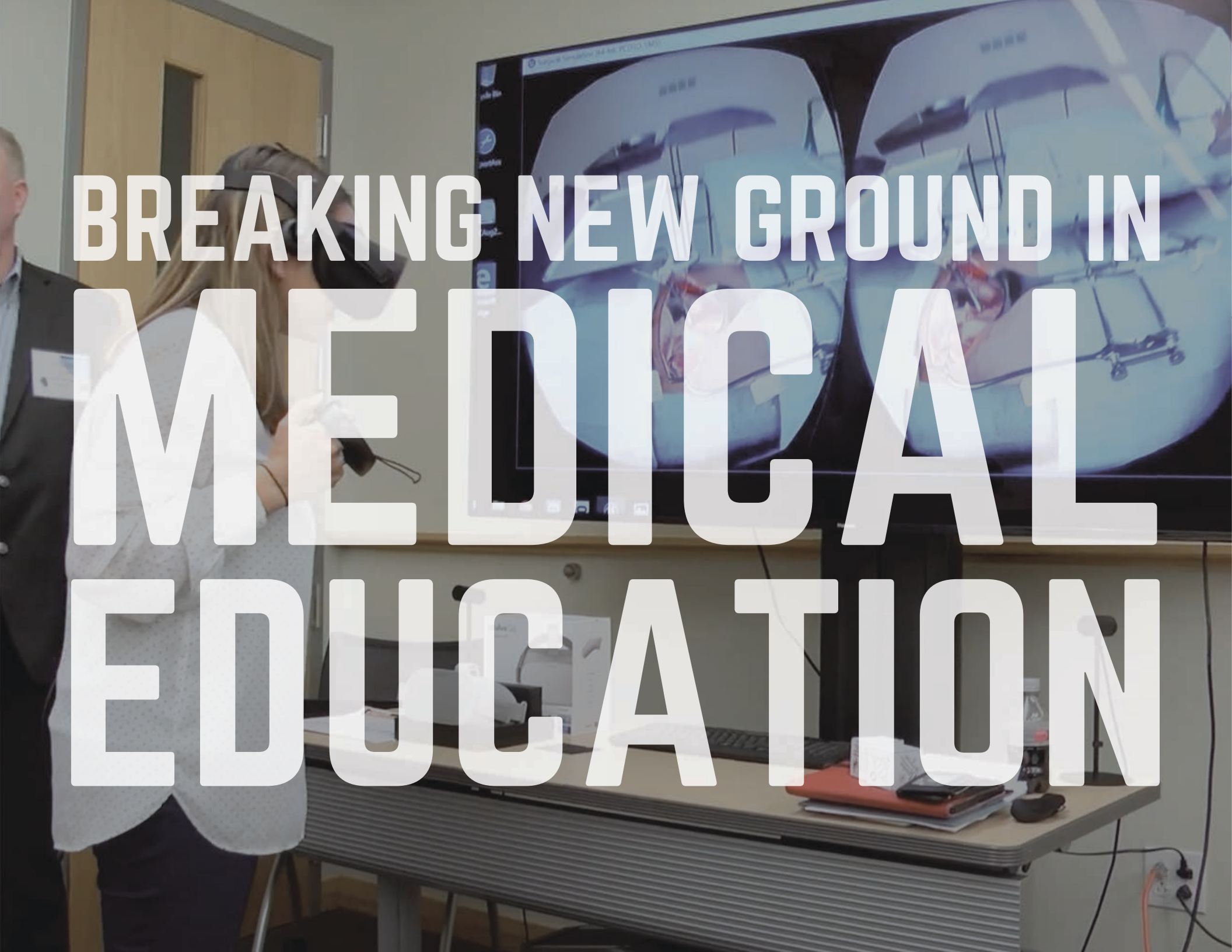
$$\text{IMPACT} = \text{STRATEGY} \times \text{EXECUTION} \times \text{MOTIVATION}$$

IMPACT is measurable and meaningful change. We help leaders develop impactful solutions in the communities and institutions they serve.

An evidence-based **STRATEGY** is essential for success. We help leaders develop customized solutions for their organizations that leverage unique strengths and circumstances.

EXECUTION turns great ideas into reality. To help leaders successfully implement their strategies, we use personalized strengths assessments and behavioral techniques derived from the latest cognitive research.

Without **MOTIVATION**, even the strongest leaders can struggle to succeed. We focus on helping leaders connect their work to a deeper sense of personal meaning, helping them discover new ways to motivate and engage themselves, their teams, and their communities.



BREAKING NEW GROUND IN MEDICAL EDUCATION



Around the world, there is an ongoing critical shortage of surgical providers in lower- and middle-income countries for many reasons, including lack of access to advanced surgical supervision and training. The Center and the Institute's medical research focuses on making medical education more efficient and effective, in order to increase access to quality care in communities that need it most.



USING LOW-COST VR TO TRAIN SURGEONS

In October 2019, the Center and the Institute completed the development and testing of a virtual reality surgical simulation tool that runs on readily available low-cost computer gaming equipment. The simulator has the potential to greatly enhance the ability of surgeons to perform complicated surgical procedures.

Dr. Groesbeck Parham (UNC Chapel Hill, University of Zambia) tests a virtual reality surgery simulator developed at SMU in collaboration with investigators at several universities. Dr. Tony Cuevas, Boris Fisher, and Dr. Eric G. Bing (L to R, all SMU) observe, 2018.

AN INTERNATIONAL COLLABORATION

The virtual reality surgery simulator, designed to help surgical trainees learn part of a radical abdominal hysterectomy procedure, was created by an interdisciplinary team of researchers at SMU, UNC Chapel Hill, King's College London, and the University of Zambia. Learn more about the project [here](#).

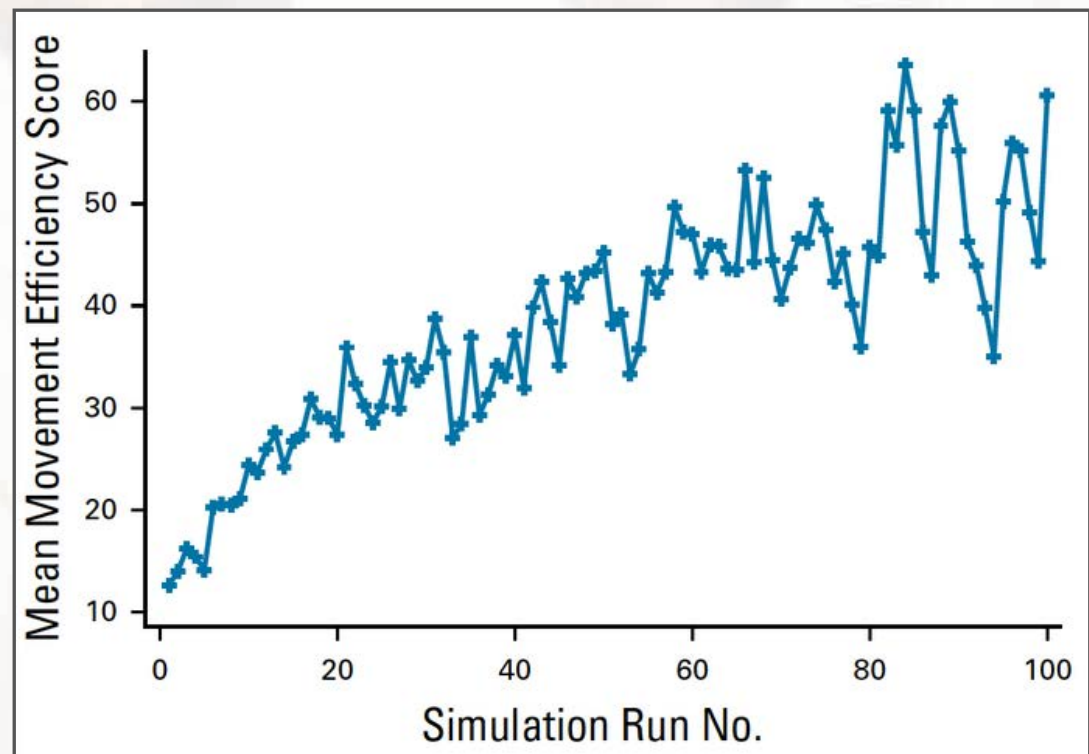
(L to R) Dr. Parham, Dr. Bing, and Dr. Richard Sullivan (King's College London) at a cancer conference in Malaysia, 2018



PROMISING RESULTS^{1,2}

Research trials demonstrated that surgical trainees' movement and time efficiency improved significantly over time when they used the virtual reality surgery simulator for just minutes each day.

In addition, trainees who completed the simulation training became more confident in their surgical and anatomical knowledge, and felt more comfortable applying the skills learned to other areas. Learn more about the research in the [Journal of Global Oncology](#) and in [ecancer](#).



A figure published in the *Journal of Global Oncology* indicating improvement in trainees' mean movement efficiency over repeated simulations. Greater variability at higher numbers of simulations was attributed to fewer trainees completing those numbers of simulations.



NEW FRONTIERS: POSTPARTUM HEMORRHAGE

The team is building upon lessons learned from the radical abdominal hysterectomy simulator project and expanding to the prevention and care of postpartum hemorrhage. The cross-institutional interdisciplinary research team includes (L to R) Dr. Jasmine Johnson (UNC Chapel Hill), Prof. Boris Fisher (SMU Guildhall), Dr. Anthony Cuevas (SMU Simmons), and Dr. Eric G. Bing (SMU Dedman College, Simmons), among others.



AN URGENT NEED

Postpartum hemorrhage (PPH) is the leading global cause of maternal mortality, causing roughly one in three maternal deaths worldwide.³ These deaths are concentrated in lower- and middle-income countries. The Center and the Institute's new project aims to reduce PPH deaths by enhancing surgical training and capacity.

86,000

APPROXIMATE ANNUAL DEATHS RESULTING
FROM POSTPARTUM HEMORRHAGE WORLDWIDE³

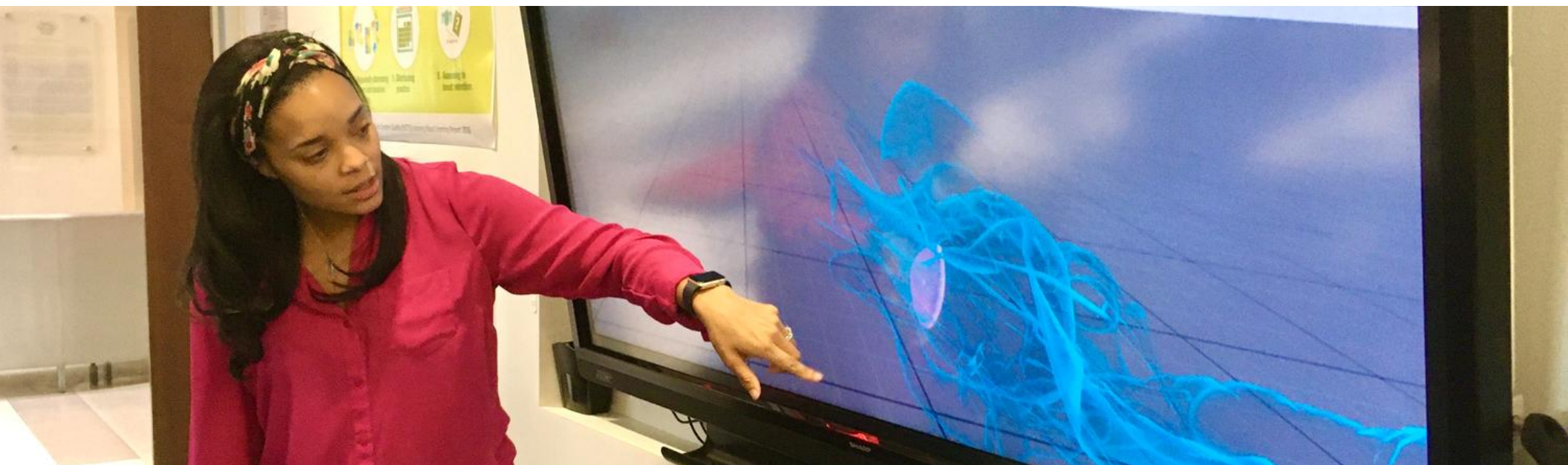
99%

APPROXIMATE SHARE OF TOTAL POSTPARTUM
HEMORRHAGE DEATHS THAT OCCUR IN LOWER-
AND MIDDLE-INCOME COUNTRIES⁴

With support from the Wellcome Trust, the research team has expanded to include experts in maternal and fetal medicine: Dr. Jasmine Johnson (UNC Chapel Hill), Dr. Friday Kaunga (University of Zambia) and Dr. Jayanthi Lea (UT Southwestern Medical Center)

With the new simulator, the team hopes to further reduce costs by leveraging newer and more cost-effective virtual reality technology. Furthermore, they note that the project is well-adapted to the ongoing pandemic situation, as physical proximity to others is not required for surgical trainees to train in the simulator. Trials are expected to begin in 2021; learn more about the project [here](#).

Dr. Johnson provides feedback on the virtual cervix (highlighted) in the anatomy model created for the simulator, 2019



THE RESEARCH TEAM



Dr. Eric G. Bing
Professor of Global Health
SMU



Dr. Tony Cuevas
Clinical Professor
SMU



Dr. Groesbeck Parham
Prof. of Gynecologic Oncology
UNC Chapel Hill, U of Zambia



Dr. Richard Sullivan
Prof. of Cancer & Global Health
King's College London



Dr. Jasmine Johnson
Fellow in Maternal-Fetal Medicine
UNC Chapel Hill



Boris Fisher
Professor of Practice, Art
SMU Guildhall



Dr. Jayanthi Lea
Associate Professor of Obstetrics
& Gynecology
UTSW Medical Center

NOT PICTURED: DR. FRIDAY KAUNGA (UNIVERSITY OF ZAMBIA)

ENHANCING THE IMPACT OF VR TRAINING

ONLINE TRAINING MATERIALS FOR CARE PROVIDERS

The Center and the Institute are currently developing online training materials for professional skill development to be used in concert with the PPH simulator. These courses are designed to help surgical trainees educate themselves about the different methods of treating PPH, which is expected to reinforce and enhance their training within the simulator. Prior to the development of the PPH courses, the Center and the Institute developed courses focused on combating breast cancer and cervical cancer for Friends of Africa, Inc., a health organization based in Zambia.

THE VR SIMULATOR IN THE NEWS

The radical abdominal hysterectomy and postpartum hemorrhage surgery simulator projects have been featured or mentioned by several media outlets during the 2019-2020 academic year, including:

The Dallas Morning News



 ParkCitiesPeople

OUR NEWEST FIGHT: BATTLING COVID-19



The Center and the Institute are committed to helping mitigate the impact of COVID-19 in the Dallas community and beyond. This goal has been pursued through classroom instruction, a virtual public health case competition, student research, consultations, leadership coaching, and media interviews.

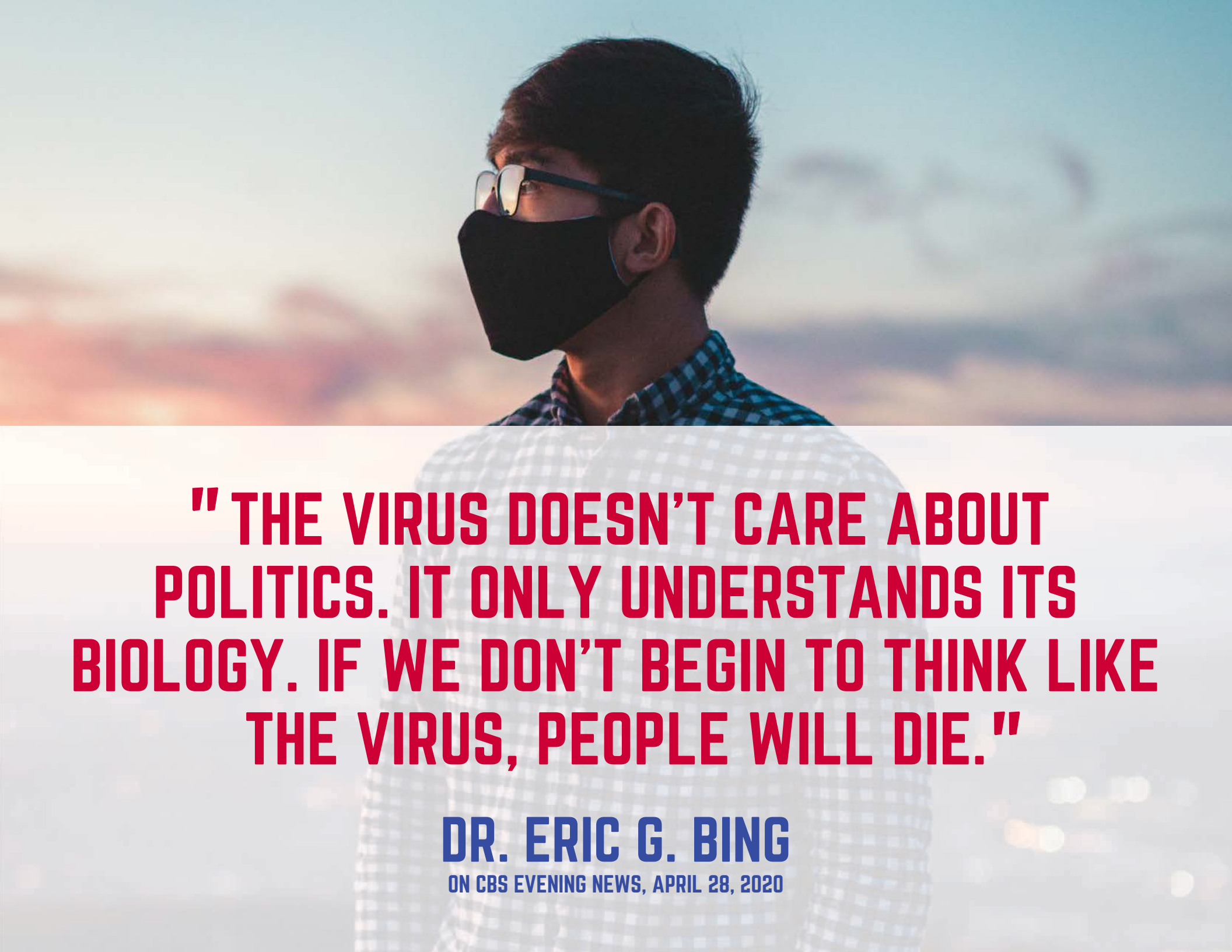




A NATIONAL PLATFORM

In 2020, Dr. Bing has made a series of national television appearances and given other media interviews related to the coronavirus pandemic; his interviews promote a message of following the science where it leads, ramping up testing, reducing political polarization, and donning masks. Watch his interviews [here](#).

Dr. Bing discusses the coronavirus pandemic on CBS national news, 2020



**"THE VIRUS DOESN'T CARE ABOUT
POLITICS. IT ONLY UNDERSTANDS ITS
BIOLOGY. IF WE DON'T BEGIN TO THINK LIKE
THE VIRUS, PEOPLE WILL DIE."**

DR. ERIC G. BING

ON CBS EVENING NEWS, APRIL 28, 2020

COMPETING TO FLATTEN THE CURVE

Every spring since 2015, Dr. Bing has taught *Creating Impact in Global & Public Health*, a combined undergraduate/graduate course in the science and logistics of public health. The immersive course always features a consultation with a real-world organization to solve a public health issue or issues; students present their ideas at the Battle to Save Lives case competition at the end of the semester. Watch a video about the course [here](#).

After SMU went online in March, Dr. Bing [restructured the course](#) to focus exclusively on COVID-19. In April, students competed in a [virtual Battle to Save Lives](#), with the object of creating COVID-19 suppression strategies that could be implemented on campuses.

140+

**SMU STUDENTS TRAINED IN
CREATING IMPACT IN GLOBAL
& PUBLIC HEALTH SINCE 2015**

Students in Dr. Bing's *Creating Impact in Global & Public Health* course participate in a class debate prior to the end of in-person classes, 2020





COMBATING COVID-19 ON CAMPUS

THE SIXTH ANNUAL BATTLE TO SAVE LIVES

HOSTED BY



SMU

CENTER FOR GLOBAL
HEALTH IMPACT



SMU

INSTITUTE FOR
LEADERSHIP IMPACT

5 UTD, SMU projects win RevTech
grants to help keep campuses safe

By Kevin Cummings - May 15, 2020

With an audience of hundreds, the sixth Battle to Save Lives was the best-attended case competition hosted by the Center and the Institute to date. Two teams of students who presented at the case competition submitted their projects for \$5,000 implementation grants offered by RevTech Ventures, and both teams were awarded grants. Watch the winning presentations [here](#) and [here](#).



CONSULTING FOR PUBLIC HEALTH IMPACT

A team of public health leaders affiliated with the Center and the Institute are working with local institutions and organizations to develop plans for a safe reopening. Dr. Bing served on the SMU President's Task Force For a Healthy Opening Fall 2020 and consults with multiple community organizations; he is assisted by SMU student Justin Wilkey, recent SMU graduate Khris Beeson, and other former students.

USING MEDITATION TO RELIEVE PANDEMIC STRESS

Meditation is a relaxation technique that has been shown to reduce stress and improve well-being if practiced regularly. College students experience high levels of stress, which is likely to be heightened during the coronavirus pandemic and related economic recession. While these students stand to benefit significantly from adopting meditation practices, an obstacle they face is the difficulty of developing and maintaining meditative practices over time.

As part of an Engaged Learning project, Kaitlyn Contreras-Castro (SMU '20), mentored by Dr. Eric G. Bing and supported by Applied Physiology doctoral student Claire Trotter, conducted research on meditation as a stress reduction technique in the context of COVID-19. The purpose of this ongoing research in the Center is to improve the effectiveness of low-cost technology to improve well-being and learning among young adults.





**EMPOWERING LEADERS
IN EDUCATION**



FOSTERING GROWTH IN RURAL SCHOOL DISTRICTS

The third cohort of SMU's District Leadership Fellows program met during the 2019-2020 academic year. The District Leadership Fellows program is a strengths-based program that brings school leaders together to build their leadership skills, network with other individuals in similar positions, and collaborate to solve problems in new and innovative ways.

The coronavirus pandemic forced the program to go online halfway through the spring semester, and the schedule was changed to enhance the program's capacity as a forum for leaders to collaborate on ways to solve unexpected logistical challenges and more effectively serve students and families during the pandemic. Learn more about the program updates [here](#), and read some reflections from 2019-2020 Fellows [here](#).



“District Leadership Fellows gave me the gift of time. Pulling me off campus and really letting me sit down and listen to what other superintendents in districts demographically similar to mine have done has been impactful.

KERMIT WARD
SUPERINTENDENT, CLARKSVILLE ISD

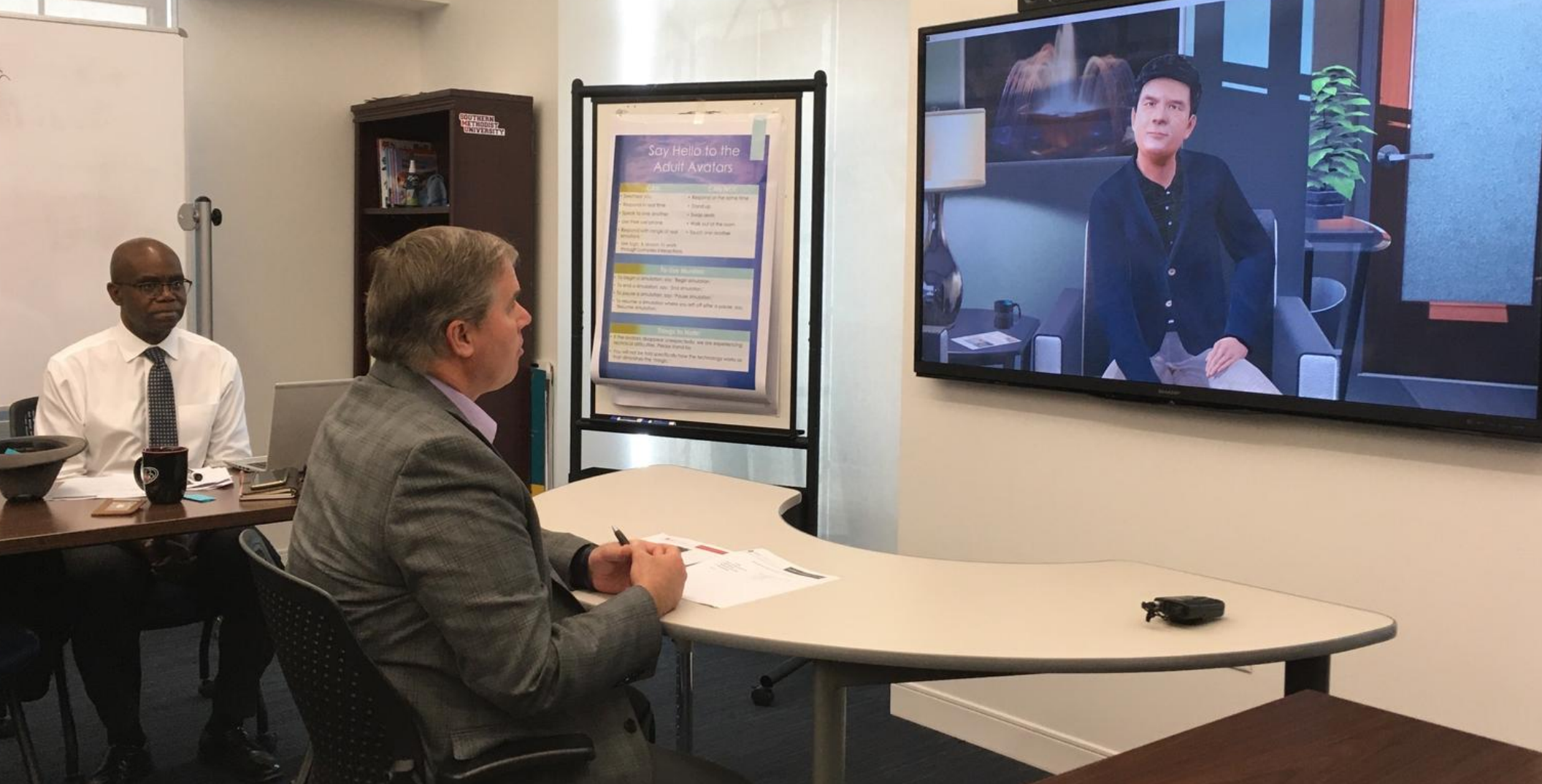
“The District Leadership Fellows program has nurtured the leader within me, especially in times like today, when we need to lead in the midst of crisis and uncertainty.

DR. JOSIE HERNANDEZ-GUTIERREZ
ASSISTANT SUPERINTENDENT, WACO ISD | PROGRAM FACILITATOR

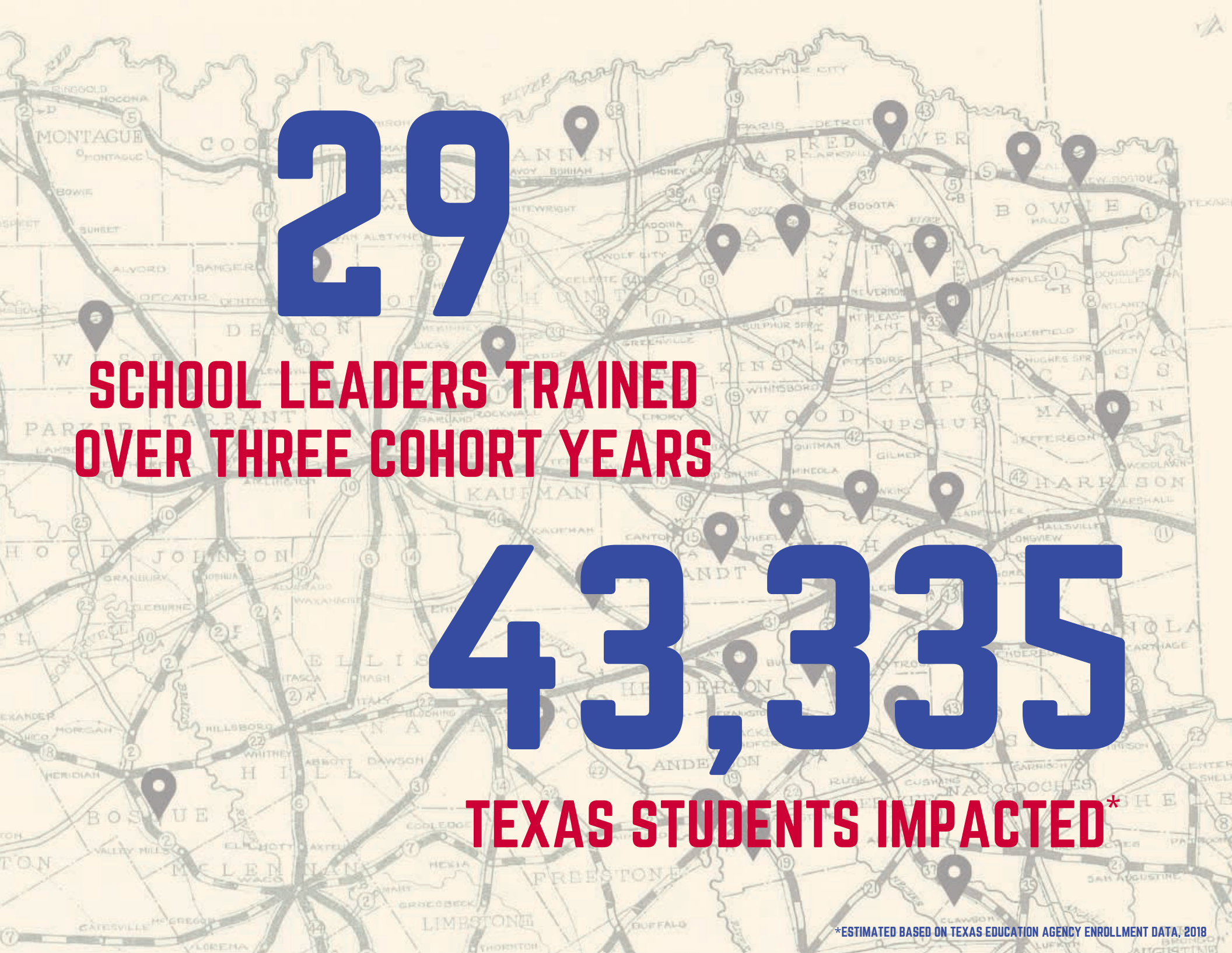


“I’m so thankful that my impact project is focused on community leadership. That has been so monumental during the pandemic. Our district ended up taking the lead for the entire county based on the structure developed in my project.

DR. DARIN JOLLY
SUPERINTENDENT, NORTH HOPKINS ISD



The 2019-2020 District Leadership Fellows had the opportunity to build their dispute resolution and behavioral counseling skills through situations that were simulated with Mursion mixed reality training software. Mursion simulates difficult conversations in real time with the help of interactive avatars.

A map of Texas with various counties labeled and numerous location pins placed across the state, indicating the reach of the program.

29

**SCHOOL LEADERS TRAINED
OVER THREE COHORT YEARS**

43,335

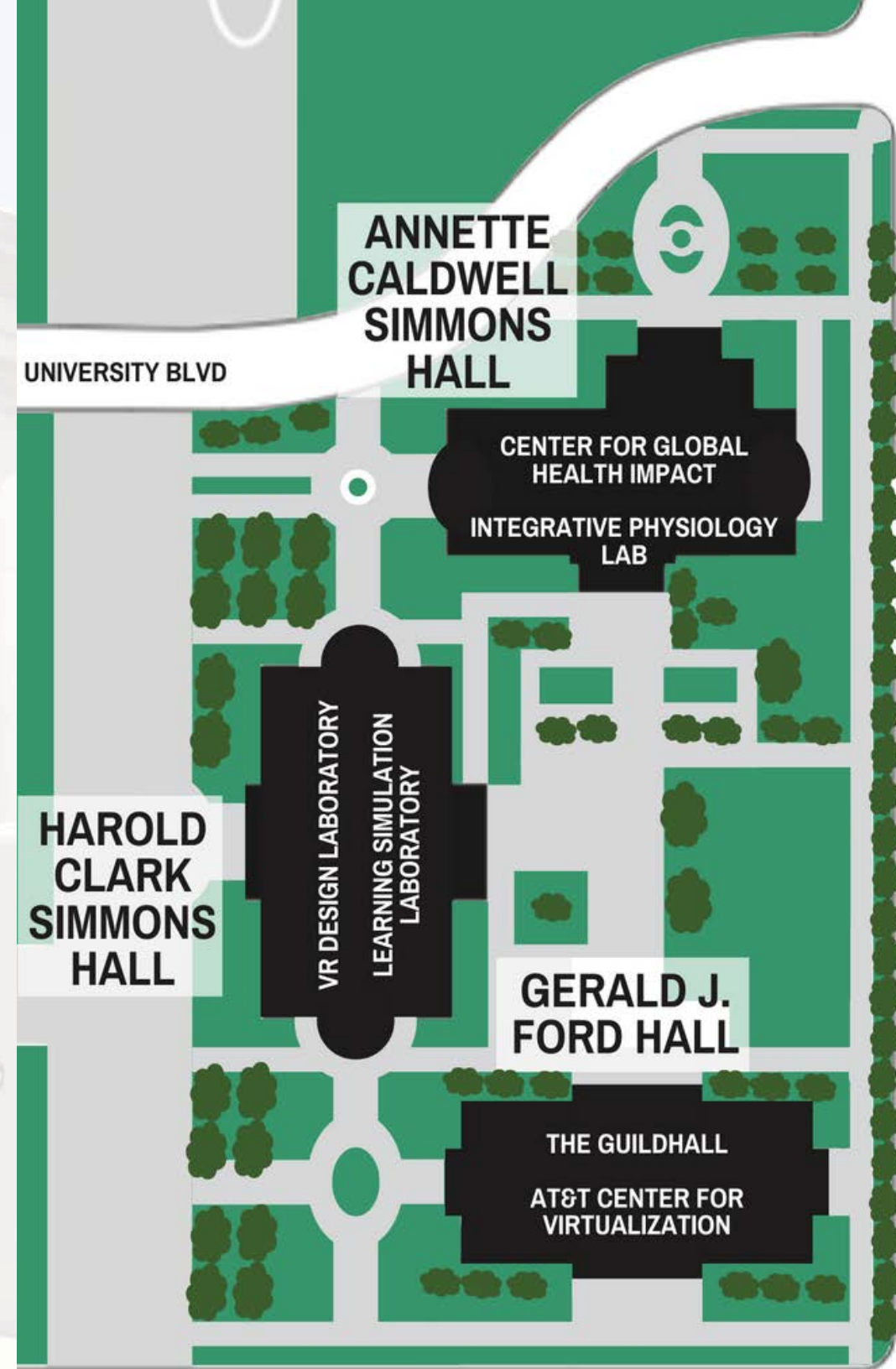
TEXAS STUDENTS IMPACTED*

*ESTIMATED BASED ON TEXAS EDUCATION AGENCY ENROLLMENT DATA, 2018

ROOM TO GROW

The Center and the Institute are headquartered in Annette Caldwell Simmons Hall, part of a rapidly growing epicenter of innovation on the SMU campus. With the construction of the Gerald J. Ford Hall for Research & Innovation, key institutional collaborators including SMU Guildhall will now be located in the same campus region, enabling greater collaboration on SMU virtual reality initiatives for leaders in health and other fields.

Additionally, the founding of the Moody School of Graduate and Advanced Studies offers potential for greater interdisciplinary collaboration in the Simmons region. Moody Hall, the new school's headquarters, is slated to be constructed in an area adjacent to the Simmons region.



LOOKING AHEAD

BUILDING UPON RESEARCH IN HEALTH TECHNOLOGY & LEARNING

As the PPH surgery simulator and online training materials move forward, the team is looking ahead to new potential applications of the virtual reality surgery simulator technology and different settings in which to test it. Several applications for grants to accomplish this are currently in development.

SPEARHEADING COLLABORATIONS

With a history of bringing experts from different fields together to collaborate and innovate, the Center and the Institute are spearheading several unique grant proposals related to COVID-19, gaming in educational settings, and more.

BUILDING A NEW MODEL TO TRAIN EDUCATION LEADERS

The 2020-2021 cohort of SMU's District Leadership Fellows program is now accepting applicants. The program, which will be held exclusively online in light of COVID-19, is now open to multiple kinds of school leaders from the entire United States. [Click here](#) to learn more and apply.

TRAINING IN PUBLIC HEALTH

In Spring 2021, Dr. Bing will launch *Pandemics!: The Science of Disease Spread, Prevention and Control*. This course will be an interactive and participatory overview of global and public health through the study of the science of infectious and social epidemics and pandemics.

LEADERSHIP

ERIC G. BING

is the Founder and Director of the Center for Global Health Impact and the Institute for Leadership Impact. He is a professor of global health in the Department of Applied Physiology and Wellness in the Simmons School of Education and Human Development and the Department of Anthropology in Dedman College of Humanities and Sciences at SMU. Dr. Bing was the senior fellow and founding director of global health at the George W. Bush Institute from 2011 to 2016, where he spearheaded worldwide health initiatives including serving as co-leader of the institute's Pink Ribbon Red Ribbon partnership, an \$85 million public-private program designed to combat cervical and breast cancer in Africa and Latin America.



Prior to joining the Bush Institute, Dr. Bing was an endowed professor of global health for nearly 20 years at the Charles Drew University of Medicine and Science in Los Angeles. He has developed and managed global health programs in Africa, Central America and the Caribbean.

Dr. Bing has published more than 90 articles and abstracts. He received a medical degree from Harvard Medical School, a Master's of Public Health and a PhD in Epidemiology from UCLA, and an MBA from the Fuqua School of Business at Duke University. In 2013, his book *Pharmacy on a Bicycle: Innovative Solutions in Global Health and Poverty* was released, and he was a *Dallas Morning News* finalist for Texan of the Year.



CHRISTINE FERGUSON

has served as Program Specialist since she joined the Center for Global Health Impact and the Institute for Leadership Impact in September 2019. In this capacity, Christine coordinates programs, key projects, and day-to-day operations at the Center and the Institute. She previously worked in the SMU Geothermal Laboratory, Fondren Library, and the Caruth Institute for Engineering Education.

STAFF AND SCHOLARS





KHRIS BEESON is a Global Health Intern at the Center for Global Health Impact and Institute for Leadership Impact. She graduated from SMU in 2020 with degrees in Dance Performance and Health & Society, and hopes to pursue a Master's in Public Health. In her spare time, Khris enjoys going on walks with her dog, reading, and listening to music.



MEGAN BROWN joined the team as a Data Analyst in Summer 2020. She is a doctoral candidate in sociocultural anthropology, with a concentration in medical anthropology. Megan is a recipient of a 2019 Fulbright Award to Costa Rica to conduct her dissertation research. She graduated from the University of South Carolina in 2013 with a Bachelor of Science in Public Health, and she received her Master of Science in Global Health Policy from the London School of Hygiene and Tropical Medicine in 2016. She has conducted anthropological research in Peru, Ghana, and Costa Rica.



KAITLYN CONTRERAS-CASTRO joined the team as a Research Assistant in Summer 2018. She graduated from SMU in May 2020 with a B.S in Health & Society and minors in Human Rights and Spanish. Kaitlyn is passionate about mitigating health inequalities and will be attending medical school in the fall of 2021.



JORGE MARTINEZ joined the team as a Visiting Scholar in Spring 2020. He is a physician with a master's degree in International Cooperation and Humanitarian Aid. With experience working in global and public health in countries like Ecuador, Peru, and Mexico, Dr. Martinez has been part of the UNAIDS team and has worked with several nonprofit organizations mostly focused on HIV/AIDS prevention. In the past three years, he worked at Tecnológico de Monterrey, Campus Guadalajara; he also serves as an independent consultant for Partners in Health in Chiapas, Mexico.



PRICE MORGAN joined the team as Communications & Research Specialist in Spring 2018. He graduated from SMU with dual degrees in economics and public policy in 2019; prior to his arrival at SMU, he graduated from Los Angeles Harbor College. Outside of his academic career, Price has worked as a documentarian and actor, most recently appearing as a supporting character in Warner Bros.' *The Gallows* (2015). He also works as a debate coach. In his spare time, Price enjoys studying economics and urban planning, creating new vegan recipes, and playing his ukulele.



LAUREN SHOOK joined the team as Associate Director in Fall 2017 and later transitioned to the role of District Leadership Fellows Specialist from Fall 2019 until Summer 2020. She began her career serving students in district roles and in educational nonprofits, where she managed college access programs in rural Texas. Lauren brings experience in project management, grant writing, strategic planning, coaching, and program evaluation. She received her master's in Education Policy & Leadership from Stanford University, where her research focused on system improvements for nontraditional college students. She also earned a graduate certificate in nonprofit management from the Bush School of Public Service and holds a bachelor's degree from Texas A&M University. She is now an Education Policy Ph.D student at the University of Texas at Austin, focusing on how educational systems provide access and preserve advantage for students differently based on race, gender, and socioeconomic status.



CLAIRE TROTTER is a third year Ph.D student in the Department of Applied Physiology and Wellness. Claire received a B.S. in Applied Physiology and Health Management and a B.A. in Psychology from Southern Methodist University in 2016 and a M.Sc. in Biology from University of Colorado-Colorado Springs in 2018. She is currently advised by Dr. Scott L. Davis in the Integrative Physiology Laboratory, where she is learning to master advanced techniques that allow for the monitoring and analysis of activity in the central nervous system in humans. Claire is collaborating with the Center and the Institute on an ongoing basis, with the goal of expanding the scope of her research and understanding by garnering an interdisciplinary perspective.



ANDREAS TSOUMPARIOTIS served as a Data Analyst in Spring 2020. He is a master's student in Applied Statistics and Data Analytics at SMU. Prior to moving to Texas, he attended Stony Brook University and obtained a Bachelor of Science degree in Applied Mathematics & Statistics. Andreas aspires to pursue a data science career within the technological and financial service industries.



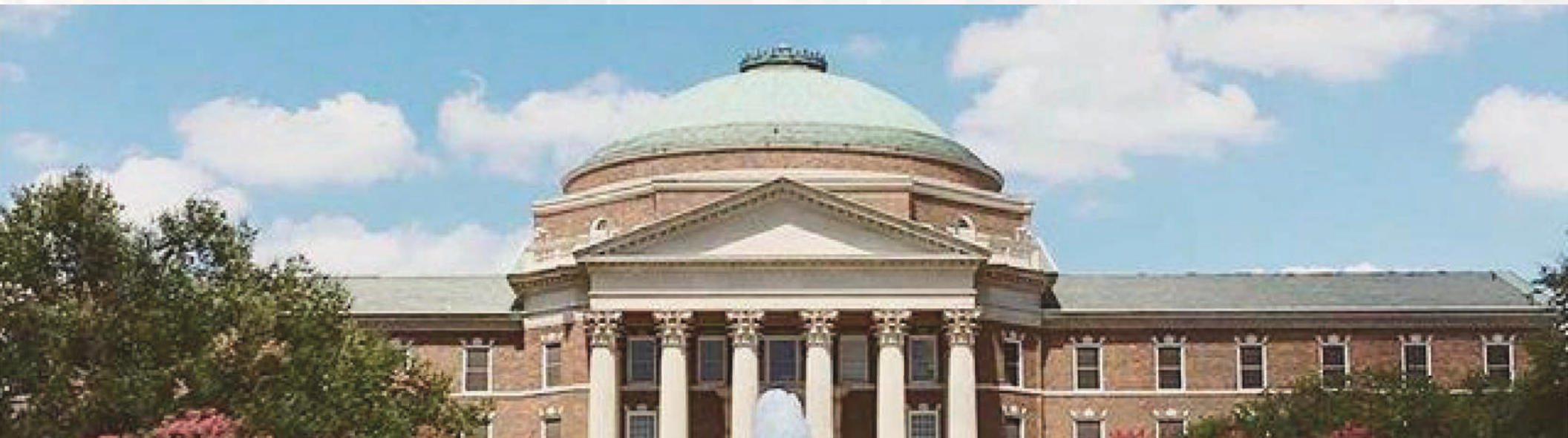
JUSTIN WILKEY, a rising junior studying Biological Sciences and Psychology, is interested in pursuing a career in medicine. As a Global Health Intern, he has researched measures to ensure the SMU community's safe return to campus. Justin is also involved with the development of materials for Dr. Bing's global health courses. Justin has enjoyed his time interning with Dr. Bing, and believes that this experience has given him a unique and valuable perspective on the impact that effective healthcare strategies can have on entire communities.

(L to R) Dr. Bing, Lauren Shook, Christine Ferguson, Dr. Josie Hernandez-Gutierrez (Assistant Superintendent, Waco ISD) and Price Morgan, 2020. Dr. Hernandez-Gutierrez served as a Program Facilitator for the 2019-2020 cohort of the District Leadership Fellows program.



SOURCES

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4. Haeri, S., Dildy III, G.A., [*Maternal Mortality From Hemorrhage*](#). Seminars in Perinatology, 2012, 36(1):48–55. DOI: 10.1053/j.semperi.2011.09.010



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Furthermore, we would like to recognize our partners and supporters at King's College London, UT Southwestern Medical Center, UNC Chapel Hill, the University of Zambia, Friends of Africa, Inc., Istation, and the Voss Law Firm, P.C. We also recognize the support of our Texas school district partners: Aubrey ISD, Canton ISD, Clarksville ISD, Community ISD, Dodd City ISD, Elkhart ISD, Mildred ISD, Mineral Wells ISD, North Hopkins ISD, Paradise ISD, Throckmorton Collegiate ISD, Union Grove ISD, and Whitehouse ISD, the Region 7 Education Service Center, the Region 8 Education Service Center, the Region 10 Education Service Center, and the Region 11 Education Service Center.

Finally, we would like to thank the Dedman College Interdisciplinary Institute for their support, as well as the many SMU faculty, students, and staff who have helped us support effective leaders and create impact in global health.



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