REACH OUT > ENGAGE > TRANSFORM

2020/21

ANNUAL REPORT

TEXAS TECH UNIVERSITY
University Outreach
& Engagement™

TABLE OF CONTENTS

INTRODUCTION — 2

2020/2021 UO&E EVENTS & ACTIVITIES — 3

2021 TTU PRESIDENT'S ENGAGED SCHOLARSHIP AWARDS — 5

COVID-19 RESPONSE — 9

WATER, LAND, AND AGRICULTURE — 13

HEALTH, WELL-BEING, AND QUALITY OF LIFE — 15

CREATIVE INQUIRY ACROSS THE ARTS, HUMANITIES, & SCIENCES — 17

PRE-K TO 12 ENGAGEMENT — 19

INTERNATIONAL ENGAGEMENT — 23

CALENDAR YEAR 2020 BY THE NUMBERS — 27

We wish to thank Texas Tech's Office of Communications and Marketing and the Office of the Vice President for Research and Innovation for the courtesy of using stories and other material from their news archives for this publication.

WELCOME

Dear TTU Community,

Outreach and Engagement crosses all three University missions – Teaching and Learning, Research/Creative Activities, and Service. It ties to the work of faculty, staff, and students. It involves members of the university and the community working together to address a community need or pressing societal issue by leveraging university expertise and resources with the knowledge and experiences of community partners in mutually beneficial ways.

While history has shown that our faculty, staff, and students are strongly committed to engaging with communities for the public good, this commitment has never manifested itself more than during the past 18 months when the COVID-19 pandemic upended the lives of citizens of all ages here on the South Plains, across the country, and around the world.

In March of 2020, when COVID-19 first emerged in the Lubbock region, TTU faculty, staff, and students stepped up instantly to help, contributing their time and resources to the community's fight against the COVID-19 crisis. They engaged with colleagues across the university and the Texas Tech Health Sciences Center; they partnered with local businesses, health care organizations, non-profit agencies, K-12 schools, and others to help those affected by the crisis.

With this publication, we would like to highlight some of our faculty, staff, and students' outreach and engagement work that took place during the past year. While the stories do not nearly account for all the activities that took place, they provide insight into ways that Texas Tech's faculty, staff, and students are engaging with communities to contribute their academic knowledge and expertise to improve the social, mental, and economic well-being of communities in the South Plains and beyond.

We hope that you will enjoy this retrospective of the various facets of Texas Tech's outreach and engagement work during 2020/21 and continue to be inspired to reach out, engage, and transform!

Sincerely,

John Opperman, Ph.D.
Associate Vice Provost
University Outreach and Engagement

Birgit Green, Ph.D.
Assistant Vice Provost
University Outreach and Engagement

THE OFFICE OF UNIVERSITY OUTREACH AND ENGAGEMENT ACADEMIC YEAR 2020/2021 IN REVIEW

Background and Mission

University Outreach and Engagement (UO&E) was established in fall 2018 under Texas Tech's Office of the Provost to provide innovative, collaborative, and strategic leadership and support for the university's strategic priority to "transform lives and communities through strategic outreach and engaged scholarship." (Texas Tech University Strategic Plan: A Foundation for the Next Century). University Outreach and Engagement strengthens Texas Tech's ability to achieve excellence in outreach and engaged scholarship by serving as a Catalyst, Collaborator, and Connector.

2020/2021 UO&E EVENTS & ACTIVITIES

WEBINARS FEATURING PRESIDENT'S ENGAGED SCHOLARSHIP AWARD WINNERS

University Outreach and Engagement hosted two webinars in Fall 2020 to highlight the recipients of the 2020 President's Engaged Scholarship Awards, an annual awards program that recognizes Texas Tech faculty from all disciplines for a project or activity that demonstrates exemplary and sustained commitment to mutually beneficial engagement with external communities for the purpose of finding solutions to important social, economic or environmental issues.

The award-winning teams, including faculty leaders, students, and community partners, provided an overview of their projects and shared best practices, challenges, and lessons learned. They also highlighted the impacts that their engagement has had on student teaching and learning, research and innovation, as well as scholarship. Recognized projects in the President's Excellence in Engaged Scholarship Awards category included "*The Texas Liberator Project*," led by **Dr. Aliza Wong**, Interim Dean of the Honors College; and "*Literacy Champions*," led by **Drs. Mellinee Lesley** and **Julie Smith**, faculty members in the College of Education's Department of Curriculum and Instruction. The recipient in the Emerging Engaged Scholarship Awards category was "*Promoting Child Development, Inclusion, and Health Through Natural Learning*," a multidisciplinary collaboration between **Drs. Kristi Gaines** and **Malinda Colwell**, faculty members in Human Development and Family Studies, and **Drs. Charles Klein** and **Muntazar Mosur**, faculty members in the Department of Landscape Architecture. The Exemplary Engaged Scholarship Award went to the "*CASNR Matador Institute of Leadership Engagement*" Program led by **Dr. Lindsay Kennedy**, Assistant Professor, and **Dr. Cindy Akers**, Interim Dean, College of Agricultural Sciences and National Resources.

In total, close to 60 Texas Tech faculty, staff, students, and members of the community (not counting presenters) participated in the webinars.

INAUGURAL RESIDENCY HOSTED BY TERRY AND JO HARVEY ALLEN CENTER FOR CREATIVE STUDIES

In 2018, TTU acquired the Terry and Jo Harvey Allen Collection, a wide variety of materials that include 150 of Terry Allen's art and music journals, a substantial number of audio and visual recordings, many scripts written by both Allens, an additional 40 boxes of Jo Harvey Allen's daily journals, along with other correspondence and business records. These materials document the lives and works of the Allens and particularly their creative processes making them useful to a wide variety of scholars and researchers.

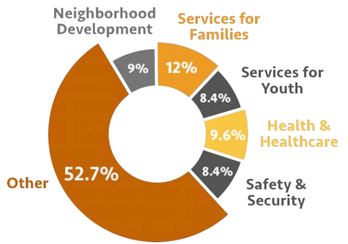
Integral to the acquisition of the Collection was the establishment of the **Terry and Jo Harvey Allen Center for Creative Studies**, a platform for the Allens to participate in the University's scholarly study and teaching of the creative process. The Center — housed in the Office of UO&E, a division of the Office of the Provost — had scheduled its first residency program for the spring of 2020. The Allens — along with sons Bukka and Bale — were set to present a traditional week of in-person seminars to Texas Tech students and faculty. However, COVID-19 forced a change of plans. The in-person seminars were replaced with virtual webinars in fall 2020. All were free and open to the public and consisted of a prerecorded overview and interview with the Allens followed by a live-stream question and answer session.

Monday, November 9th, consisted of the whole family. Tuesday, the 10th, featured Jo Harvey, "Stage and Film, A Personal History," Bale on Wednesday,the 11th, with "The Artist as Gallerist," Thursday, the 12th, with Bukka discussing "Recording and Producing Music in the Time of COVID," and ending on Friday, November 13th with Terry in "Stories, Pictures, and Songs."

NON-PROFIT NEEDS ASSESSMENT

In Spring 2021, UO&E conducted a needs assessment among 72 nonprofit agencies in the Lubbock area to identify their organizational needs in light of acute issues associated with the emergence of the Pandemic as well as their general, ongoing support needs. Based on 44 responses received, the agencies' greatest challenges were funding, facilities, outreach/community awareness, and staffing. The chart to the right reflects their greatest areas of concern for Lubbock.

UO&E has been using the results from the survey to connect several nonprofit agencies with Texas Tech faculty, staff, and students who will help address their needs either via service learning, research, or other forms of outreach and engagement.



DISCOVERIES TO IMPACT 2021

On March 29 through 31, 2021, the Discoveries to Impact (DTI) Conference brought together faculty, staff, students, and community leaders to showcase Texas Tech's research, engagement, innovation and business startups; compete for prize money for the best innovations and startup ideas; and hear from numerous thought leaders, intriguing panelists and dynamic innovators. For the second time, it did so virtually and with overwhelming success.

Day 3 of DTI featured presentations by the recipients of the 2021 President's Engaged Scholarship Awards (see pages 5-8). The conference was hosted in partnership with the Innovation Hub at Research Park, the Center for Transformative Undergraduate Experiences (TrUE), and the Center for the Integration of STEM Education and Research CISER). More than 800 people attended.

2021 PRESIDENT'S ENGAGED SCHOLARSHIP AWARDS

Despite the pandemic, University Outreach and Engagement was able to recognize the winners of the 2021 President's Engaged Scholarship Awards, albeit virtually. The award-winning teams were featured during the 2021 Engaged Scholarship Symposium, which took place virtually on March 31, 2021 as part of Texas Tech's annual Discoveries to Impact Conference. The following features an overview of each of the winning projects.

PRESIDENT'S EXCELLENCE IN ENGAGED SCHOLARSHIP AWARD

The President's Excellence in Engaged Scholarship Award recognizes TTU faculty for a longer-term project or initiative that demonstrates a significant and sustained commitment to addressing a community need or larger social issue through active collaboration with community partners. It carries a monetary prize of $2,500 and recognizes up to two faculty-led engaged scholarship projects or initiatives.

TEXAS TECH UNIVERSITY PRINCIPAL FELLOWS RESIDENCY PROGRAM

A University-to-District Partnership in Leadership Preparation

Historically, community schools have struggled to effectively serve the changing demographic, including Latinx and Black student populations. To address systemic issues voiced by local school districts, the TTU Principal Fellows Residency Program began as a partnership between Lubbock ISD and the College of Education Leadership Faculty. The partnership was designed to impact an equity and social-justice-driven principal preparation pipeline in education and produce a diverse pool of aspiring leaders that would mirror the growing Latinx and Black demographics of Lubbock ISD.

The Principal Fellows Residency Program has grown into a university-to-district alliance between the Texas Tech Educational Leadership Program faculty and numerous school district leaders and partners. Faculty have worked diligently with local, state, and state-border districts to build partnerships that improve educational equity and student outcomes. The eight-year collaboration has graduated 80 Principals in Residence and continues to grow strong, building the next generation of instructional leaders who impact the knowledge, skills, and mindset of teachers and students in Texas.

PROJECT LEADERS

Dr. Fernando Valle, Professor, Interim Special Education Department Chair, Department of Educational Psychology, Leadership, & Counseling, College of Education
Dr. Irma Almager, Assistant Professor, Department of Educational Psychology & Leadership, College of Education
Dr. Vanessa de Leon, Assistant Professor, Department of Educational Psychology & Leadership, College of Education
Dr. Dusty Palmer, Assistant Professor, Department of Educational Psychology & Leadership, College of Education
Dr. Selenda Cumby, Instructor, Department of Educational Psychology & Leadership, College of Education

WEST TEXAS 3D COVID-19 CONSORTIUM

Community Engagement to Combat a Global Pandemic

Faculty, staff, and students from Texas Tech University and Texas Tech University Health Science Center (TTUHSC) formed the West Texas 3D COVID Relief Consortium (WT3D) to develop a supply chain to design, manufacture, assemble, and deliver personal protective equipment (PPE) and medical devices to frontline workers across West Texas. Partnerships with surrounding hospitals, referral centers, nursing facilities, state hospitals, and other frontline facilities were formed to determine needs. In addition, partnerships with local manufacturing companies were formed to meet these needs, and a partnership with Angel Flight enabled the delivery of much-needed medical materials.

The WT3D provided the West Texas community with over 16,000 face shields, 250 intubation chambers, and 10,000 ear savers/guards with 76 hospitals receiving the equipment and devices. Other facilities with medical needs, including 25 referral centers, 50 nursing facilities, and 3 state hospitals also received PPE. Deliveries of PPE were made to first responders, the Navajo Nation in New Mexico and Arizona, VA Healthcare Centers, and clinics in Amarillo, Lubbock, and Big Spring. Surrounding Dental and Vision Centers, and 27 area correctional centers also received equipment. Approximately 5,000 face shields were used for Texas Tech faculty and staff.

The assembly of much of the PPE was done by student volunteers. While providing this valuable service, students became educated in manufacturing processes, project management, and process planning. They were also given ownership of the assembly process and optimized production while maintaining safety in operations. These students became real-world problem solvers. Furthermore, the research arm of WT3D generated and exchanged knowledge with network partners regarding item sterilization and reuse, face mask material effectiveness, and respirator fitting, which has also been shared with the community.

Over seven separate colleges and schools within TTU and TTUHSC were involved and collaborated in this work. Other entities, such as Athletics, Outreach and Engagement, and Research and Innovation, also contributed. These collaborations have impacted the strength and togetherness of the TTU community in a desperate time and have led to practical solutions to abate the coronavirus while advancing engaged scholarship. See related stories under "**Texas Tech's COVID-19 Response**."

TTU PROJECT LEADERS

John Carrell, Honors College
Aliza Wong, Honors College
Al Sacco, Whitacre College of Engineering (WCOE)
Bryan Norman, WCOE
Jnev Biros, WCOE
Chanaka Senanayake, WCOE
Nurcan Bac, WCOE
Joseph Dannemiller, WCOE
George Tan, WCOE
Changxue Xu, WCOE
Weilong Cong, WCOE
Paul Egan, WCOE
Roy Mullins, WCOE
Chase George, WCOE
Jeff Hanson, WCOE
Burak Aksak, WCOE
Siva Parameswaran, WCOE
Gordon Christopher, WCOE
Rumeysa Tekin, WCOE
Juliusz Warzywoda, WCOE
Richard Gale, WCOE
Derek Johnston, WCOE
Turgut Baturalp, WCOE
Ronda Ingle, WCOE
Rumeysa Tekin, WCOE
Juliusz Warzywoda, WCOE
Richard Gale, WCOE
Derek Johnston, WCOE
Turgut Baturalp, WCOE
Ronda Ingle, WCOE
Ersela Kripa, College of Architecture (CoA)
Catherine Soderberg, CoA
Brendan Shea, CoA
Noemi Despland-Lichtert, CoA
Jeremy Wahlberg, CoA
Victoria McReynolds, CoA
Sarah Aziz, CoA
Jeff Hoover, CoA
Jim Williamson, CoA
Stephen Mueller, CoA
Peggy Jones, Office of the Chief Information Officer (CIO)
Eric Gillette, Office of the CIO
Rebecca Massey, Office of the CIO
Ryan Cassidy, University Libraries
Sean Scully, University Libraries
Louisa Hope-Weeks, College of Arts & Sciences
Jon Thompson, Arts & Sciences
Bryson Seekins, Arts & Sciences
Robert Duncan, Arts & Sciences
Trevor Dardik, Arts & Sciences
Karin Ardon-Dryer, Arts & Sciences
Sharran Parkinson, College of Human Sciences
Su Hwang, Human Sciences
Mark Charney, J.T. and Margaret Talkington College of Visual and Performing Arts (TCVPA)
Mallory Prucha, TCVPA
Katherine Davis, TCVPA
Matt Roe, Environmental Health and Safety
Kevin Fehr, TTU Innovation Hub
Joseph Heppert, Office of Research and Innovation (ORI)
David Dorsett, ORI

PRESIDENT'S EMERGING ENGAGED SCHOLARSHIP AWARD

The President's Emerging Engaged Scholarship Award recognizes TTU faculty for a relatively new project or initiative that demonstrates high potential for the advancement of engaged scholarship. The winning project or initiative shows outstanding promise for having a significant impact on communities and the university. It carries a monetary prize of $1,500 and recognizes one faculty-led project or initiative.

EVALUATION OF A CRISIS INTERVENTION TRAINING PROGRAM

PROJECT LEADERS

Dr. Sean Mitchell, Assistant Professor, Department of Psychological Sciences, College of Arts & Sciences
Dr. Megan Thoen, Adjunct Assistant Professor, Director of Psychology Clinic, Department of Psychological Sciences, College of Arts & Sciences

Responding to mental health and suicide crises in the community often falls to first responders, including police officers. Crisis Intervention Training (CIT) among police officers is a first step toward suicide prevention as well as matching those in crisis with the appropriate services. Texas requires Police officers to complete a 40-hour CIT, which includes psychoeducation, de-escalation techniques, and mental health and suicide crisis training. However, CIT has not been rigorously evaluated to determine its positive outcomes, barriers to the implementation of CIT skills and its effectiveness in managing suicide risk.

A team of TTU faculty, including **Drs. Sean Mitchell** and **Megan Thoen** of the Department of Psychological Sciences, are working together with the Lubbock Police Department (LPD) to evaluate its local CIT program. Their research involves conducting assessments of officers' knowledge, attitudes, skills, and behaviors related to mental illness/substance use/suicide risk, and managing mental health and suicide crises before and after they complete the CIT program. The faculty members also evaluate officers' characteristics as well as experiences that may impact the effectiveness of the CIT program, and then follow up with officers after training to evaluate program material retention and longitudinal benefits.

The impact of this project is twofold: the research informs ways to improve CIT and supplemental training that benefits people in crisis and officer safety, while also providing an opportunity for TTU scholarship and community involvement. This project is truly a partnership with scholarship and community impact at the forefront.

PRESIDENT'S EXEMPLARY PROGRAM AWARD

The President's Exemplary Program Award recognizes TTU faculty for projects that demonstrate outstanding academic engagement and commitment to addressing a community need or larger social issue. The award recognizes the program's impacts on both the community and the university (faculty, staff, or students).

PROJECT LEADERS

Dr. Lindsay Kennedy, Assistant Professor of Practice, Department of Agricultural Education and Communication, College of Agricultural Sciences and Natural Resources (CASNR)
Dr. Courtney Meyers, Professor & Graduate Studies Coordinator, Department of Agricultural Education and Communication, CASNR
Dr. Courtney Gibson, Assistant Professor, Department of Agricultural Education and Communication, CASNR
Dr. Erica Irlbeck, Professor, Department of Agricultural Education and Communication, CASNR

THE ACOM BLOCK: AN INNOVATIVE COURSE STRUCTURE TO ENGAGE STUDENTS WITH INDUSTRY

In 2015, a study evaluating Agricultural Education & Communications (ACOM) programs nationwide ranked TTU as the number one ACOM program in the country. To remain at the top and stay relevant with industry trends, the TTU ACOM faculty developed an innovative block course format designed to give students a comprehensive, capstone learning experience. Implemented in 2017, the Block program allows students to develop and apply the skills necessary to thrive in the agricultural communications industry while engaging in service-learning projects with community partners and industry representatives. This combination of hard and soft skills includes writing, visual communication, sales, web development, and campaign development, as well as critical thinking, problem-solving, strategic communication, and creativity. The ultimate learning outcomes from the ACOM Block include students publishing *The Agriculturist* magazine.

In the first three years of the ACOM Block's publication production course, which creates *The Agriculturist* magazine, students have published 384 pages of content, sold $101,610 in advertising (all of which is used to print and circulate the Agriculturist), and won national-level writing, photography, and design awards for their work on the magazine, including the National Agricultural Communicators of Tomorrow's Excellence in Writing and First-Place Online Magazine awards, and the National Agricultural Alumni Development Association's First-Place Student-Produced Magazine Award. The collaboration between courses in the block has also created a unique approach to curriculum development, especially among capstone-level learning experiences.

TEXAS TECH'S COVID-19 RESPONSE

The following stories highlight and recognize the outreach and engagement work that our Texas Tech community undertook to assist children and families, health care providers, employers, and other individuals and groups in the community in light of the COVID-19 pandemic and its aftermath. While the stories do not account for all the activities that took place during the pandemic, they provide insights into ways that Texas Tech's faculty, staff, and students stepped up - drawing upon their knowledge and resources to help address the various needs and issues that arose from the pandemic. Much of the work continues to this day as individuals in Lubbock and surrounding communities are still struggling to recover from the impacts that the pandemic has had on their education, work, and family life, as well as their physical and mental health.

WEST TEXAS 3D COVID-19 RELIEF CONSORTIUM: FIGHTING THE PANDEMIC

Collaboration was Key

Al Sacco Jr., Dean of the Whitacre College of Engineering (WCOE), was in a unique position to assist in COVID-19 relief. Sensing a need for continuing collaboration with the medical community long before the pandemic started, **Jnev Biros** was brought in as a research associate whose medical experience would facilitate cooperation with the Texas Tech University Health Sciences Center (TTUHSC).

"We hired her specifically to try to integrate with the medical school," said Sacco. "Little did we know it would be in this kind of direction."

In late March 2020, the West Texas 3D (WT3D) COVID-19 Relief Consortium was formed from many regional stakeholders that included Sacco, Biros, and Simon Williams, Associate Dean for Academic Affairs at TTUHSC, as well as UT Permian Basin, the Junior League of Lubbock, and Angel Flights. They cast a wide net to see what community health providers needed in order to combat the pandemic.

"Most of us had to work and think out of our comfort zones, out of our predetermined expertise... We learned how to learn from other disciplines. And we had to do things, like run experiments in ways we haven't done before."

Jenev Biros
Research Associate, WCOE

WEST TEXAS 3D COVID-19 RELIEF CONSORTIUM (continued)

Ensuring Mask Effectiveness

While the CDC recommended wearing a mask, it became apparent to Texas Tech researchers that not all masks were equally effective. **Karin Ardon-Dryer**, an assistant professor from the Department of Geosciences in the College of Arts & Sciences, had expertise in atmospheric aerosol research. She served on a team testing mask materials, and her knowledge was a vital part of determining which masks work better than others.

Rapid COVID-19 Testing

Gerardine Botte is a professor and Whitacre Department Chair in Department of Chemical Engineering in WCOE. She led a team including doctoral student **Ashwin Ramanujam** and **Sharilyn Almodovar**, an assistant professor in the TTUHSC School of Medicine, to create a rapid COVID-19 test that is as accurate as the gold standard for current testing and faster than present rapid tests. Botte's test is small enough to be hooked to a smart phone, requires only a drop of saliva, and delivers results in a matter of seconds. Botte is founder and chief technology officer of a new startup working to take the product to the marketplace.

Engineers Designing, Building Ventilators to Aid in the Fight Against COVID-19

A group of engineering faculty, staff, and students, led by **Nurcan Bac**, Senior Associate Academic Dean in WCOE, and in partnership with regional high school students and high school engineering programs, supplied emergency respirators to health care workers on the South Plains. Formed at the behest of Dean Al Sacco Jr., the group designed and built new ventilators to meet the needs of the COVID-19 pandemic. A total of four designs were developed and two quickly moved into the prototype and testing phase.

All four designs were created to repurpose a bag valve mask (BVM), more commonly known as an artificial manual breathing unit (AMBU) bag into an automated ventilator. The first design used a single arm to compress an AMBU bag designed by **Mazen Nachawati** and a team of mechanical engineering senior design students under the direction of mechanical engineering instructor Jeff Hanson.

Members of the Consortium included: **Randy** and **Kristi Teirnart**, **Dwayne Bandy**, **Justin Lewis**, **Chris Jackson**, **Jeremy Osborne**, **Samuel Jackson**, **Jeremy Moriearty**, **Larry Ludlum**, **Dr. Ron Banister**, **Scott Clark**, **James Holloway** (Frenship High School), **Scott Huey** (Monterey High School), **Sam Black** (Lubbock High School), **De'Lila Holder, Thomas Reynolds**, Llano Estacado Roboraiders and FRC Team 1817, **Kevin** and **Barbara Roche**, and **Todd Smith**.

HUB CITY SMALL BUSINESS TRIAGE HOTLINE

Rawls College Partners with TTU Community to Create Resource for Local Small Businesses

The Jerry S. Rawls College of Business, in partnership with TTU Northwest Texas Small Business Development Center, the Texas Tech Innovation Hub at Research Park and the City of Lubbock, launched the Hub City Small Business Triage Hotline to aid local small businesses by addressing questions related to the various disaster-relief programs introduced by the Federal Government in response to COVID-19. The hotline served small businesses in 16 counties: Bailey, Cochran, Cottle, Crosby, Dickens, Floyd, Garza, Hale, Hockley, King, Lamb, Lubbock, Lynn, Motley, Terry and Yoakum.

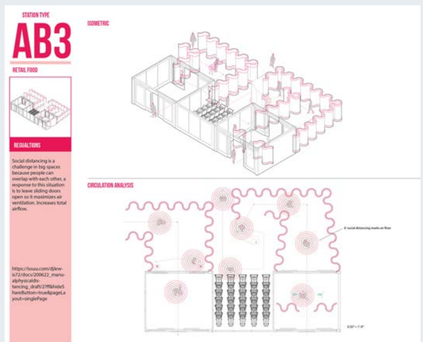
Rawls College faculty experts and select students provided support by answering questions via phone calls and emails to the hotline, with experts providing personal recommendations based on each business's eligibility and needs. "I appreciate the students, staff and faculty who have jumped in to assist with this collaboration," said Rawls College Dean **Margaret L. Williams**. "We all feel the need to share our expertise to help the local business community, and students do not often have the opportunity to learn on the front lines as they will here."

STUDENTS DEVELOP GUIDELINE BOOK TO HELP SMALL BUSINESSES FOLLOW CDC GUIDELINES DURING COVID-19 PANDEMIC

When states began reopening after the initial shutdown in March, the Centers for Disease Control and Prevention (CDC) set forth new rules and guidelines that businesses needed to follow in order to safely open. Unfortunately, many small businesses struggled to follow these new guidelines, either due to financial strain or space limitations. In a partnership with a nonprofit community organization called Project Viva, 10 students from the TTU at El Paso's College of Architecture (CoA) offered design renovation services to help small, local businesses that were at risk of shutting down because of the updated CDC requirements.

Local, small businesses applied online, and the students reviewed the requests and photos submitted of the spaces that needed design updates. Local architecture firm Prestidge Smith Razloznik Barajas Bustamante Architects Inc. (PSRBB Inc.) then took the students' recommendations and implemented them into the businesses. Ultimately, the students designed a comprehensive, 130-page book to help small businesses update their spaces so they could follow the new CDC guidelines and reopen and operate again safely during the COVID-19 pandemic.

Participating students include **Angel Arellano**, **Jerod Booth**, **Evelyn Campos**, **Juan Cardenas**, **Sofia Dominguez-Rojo**, **Leslie Jaqueline Duarte**, **Luis Martinez**, **Angel Arellano**, **Maria Martinez**, **Manuel Martinez**, and **Emilio Olivas**.



A page from the students' designs.

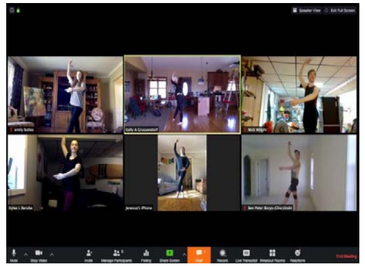
LIVE-STREAM THEATRE

Fine Arts Doctoral Student Provides Lifeline for Educators During Pandemic

When **Eric Eidson**, a TTU fine arts doctoral student, began researching online theater in higher education, he had no idea how important that research would become during the COVID-19 outbreak. "I began researching online theater and, though it exists, online theater is not available as a degree at the undergraduate level," said Eidson. "I wanted to develop an online theater degree."

As universities across the country began announcing transitions to virtual and distance learning in March, Eidson received messages from nearly 120 theater educators across the country, seeking help transitioning classes online or asking to use scenes and plays he developed for online performance. To help, Eidson has created a website, Live-Stream Theatre, as a resource for theater students and educators. The website includes information on live-streaming performances with actors and audiences in separate locations, free scene study scripts and production script samples and a guide for teachers who are transitioning from traditional classrooms to online learning.

Eidson said as unfortunate as the global pandemic is, it has made educators approach their curriculum in new ways. That may have been the push many needed to seriously consider the feasibility and merit of online theater in education. "Before COVID-19, I was one of few people actively developing online theater material," said Eidson. "Now, the entire field of theater is creatively addressing ways to parallel traditional theater classrooms through online learning."



STEM & LEAF CORPS

Honors College Students Begin After-School Tutoring Online For K-12 Students

Members of the STEM & Leaf Corps student organization didn't let campus closing stop them from doing what they love – assisting other students.

The STEM & Leaf Corps began informally in 2016 when seven students from the Honors College decided to volunteer at Lubbock High School and O.L. Slaton Middle School, offering general and UIL- and STAAR-specific tutoring. Once the STEM & Leaf Corps became a success at those two schools, other schools around the Lubbock area took notice. Programs have since been started at Estacado High School, Hutchinson Middle School, Bayless Elementary School, Guadalupe-Sommerville Center, Parkway-Sommerville Center and Southcrest Christian School.

Just because the COVID-19 pandemic shut down on-campus activities and in-class lectures for the remainder of the semester didn't mean the need vanished. When TTU and local K-12 school campuses began closing, STEM & Leaf Corps members looked for ways to continue to help students in the region. They began to compile a list of tutors from different organizations, including the Texas Tech chapter of the American Medical Student Association and the Raider Medical Screening Society. Texas Tech students began to add their information to help undergraduate students and K-12 students alike, sending the list across TTU, 70 different school districts, and even other universities including University of Texas at Austin and Austin Community College. To date, STEM & Leaf Corps has served more than 2,300 students at Texas Tech and across the Lubbock area.

WATER, LAND, AND AGRICULTURE

Research like this helps us plan for the future.

Veronica Acosta-Martinez
Soil Scientist and Microbiologist, USDA-ARS

HARNESSING SOIL HEALTH TO MITIGATE GREENHOUSE GAS EMISSIONS IN SEMI-ARID ECOSYSTEMS

Improving Production and Sustainability for Regional Farmers and Ranchers

The semi-arid climate and scarcity of water in West Texas presents a great challenge to farmers, ranchers, and other agricultural producers throughout the region; a slight deviation one way or the other often determines how profitable a growing season or herd can be. **Dr. Lindsey Slaughter**, Assistant Professor of Soil Microbial Ecology and Biochemistry in the Department of Plant and Soil Science (PSS), is collaborating with **Charles West**, former PSS Thornton Distinguished Chair, **Sanjit Deb**, Assistant Professor of Soil Physics, and **Veronica Acosta-Martinez**, a soil scientist and microbiologist with the USDA-ARS Cropping Systems Research Lab, as well as the United States Department of Agriculture (USDA) Agricultural Research Services (ARS). Her project, "Harnessing soil health to mitigate greenhouse gas emissions in semi-arid pasture ecosystems," seeks to develop new management strategies for West Texas agricultural producers, helping regional farmers and ranchers improve production and soil health while conserving natural resources and reducing environmental impact. The project is backed by a $500,000 grant from the USDA's National Institute of Food and Agriculture (NIFA) Cooperative State Research Education and Extension Service.

"The grant supports research at the crossroads of water scarcity, soil health, climate, meat production and economic viability of the Texas High Plains," West said. "It seeks to answer questions on the subtle effects of soil microbes on controlling the absorption and release of greenhouse gases from pasture soils. This is critical information because it shapes economic decisions on how a living soil can be used as pasture to support beef production with low water input and reduced environmental impact."

Slaughter said her goal for this project is to discover how soil microorganisms in these pastures can be managed to help offset some of the methane emissions from grazing cattle.

"It is exciting to add another piece of the puzzle in understanding how to manage these ecosystems to be more productive and have healthy soils under expected climate variability in this region, which also relies on mitigating greenhouse gases," Acosta-Martinez said. "Most of the farmers I've talked to are concerned about the next drought and how they can build their soil microbiome and resilience to cope with this and stay profitable long-term. Research like this helps us plan for the future."

"For me, it's more than service; it's a way of generating knowledge and solving problems that changes the power dynamic between the community and an academic institution. And the main thing about it, in my way of thinking, is that it needs to be a really meaningful partnership."

Bryan Giemza
Associate Professor of Humanities and Literature, Honors College

COMMUNITY ENGAGEMENT AND APPLES

Researcher Engages Community in Search for Lost Apple Varieties, Archival Projects & More

Comparing apples to apples isn't as easy as it seems, especially when the varieties you're trying to compare have been lost. Through a search for lost varieties of Texas apples, as well as several acts of community-engaged scholarship, **Bryan Giemza**, an associate professor of humanities and literature in the Honors College, is showing what can be accomplished when a community is engaged and participating in research. While working on an oral history project, Giemza spoke to an expert on heirloom apple varieties, many of which went away in the 1920s and 1930s with the advent of refrigeration and supermarkets. The man mentioned that he was never able to canvas Texas for heirloom apples, so Giemza built a course around uncovering some of the state's lost varieties.

As students searched for forgotten Texas apples, they also began to engage with the community. Students explored farmers markets and interviewed grocery story produce managers. They created documentaries and chased down leads. The hard work paid off, and students were able to bring one of those lost apple varieties back. "It's not something that we're just going to appreciate in Texas Tech, this is something good in the world that's for the entire community," Giemza said.

The class is a great example of the importance of actively including the community in research that may involve or affect them, and it's a common theme across all of Giemza's projects. Research that takes place on a university campus is generally in the hands of the primary researcher, even if members of the community or others outside the university participate. Giemza's approach gives preference to the community first.

HEALTH, WELL-BEING, AND QUALITY OF LIFE

CHILDREN'S BEHAVIORAL HEALTH CLINIC

The Children's Behavioral Health Clinic (CBHC) is a collaboration between the TTU Department of Community, Family, and Addiction Sciences and the Department of Psychological Sciences with TTUHSC and University Medical Center (UMC) to address the critical shortage of mental health resources in Texas for children and families.

The collaboration between UMC and the Couple, Marriage, and Family Therapy (CMFT) graduate programs and the Clinical Psychology program allows graduate students from the involved clinical programs to work with pediatric trauma patients in the hospital, providing free clinical assessment and therapeutic support to patients and families admitted to the UMC Pediatric Intensive Care Unit, the Burn Unit, and the Pediatric Ward. In addition, the clinic provides low-cost community mental health services to children and families from the greater West Texas region. The clinic is equipped with tele-therapy capabilities, which has allowed for its continued functioning during the pandemic and enables therapists to reach underserved populations and those living outside the Lubbock area.

The project provides a unique training opportunity for graduate students to practice in a hospital and hospital clinic setting, work with medical professionals, and develop clinical skills specific to collaborative healthcare environments. The interventions facilitated by the CBHC improves recovery from pediatric trauma, increases adaptation to challenges often created by medical trauma, supports children and families in the community, and provides additional mental health resources in critically underserved regions of Texas.

Despite the challenges of COVID, graduate students working in UMC provided mental health support to 160 pediatric trauma patients and their families in 2020. The CBHC provided almost 600 hours of free or low-cost therapy to children and their families for a variety of presenting problems, including depression, behavioral problems, trauma, family violence, and substance abuse. The CBHC also offered free mental health support to medical providers, staff, and their families as they coped with the stressors of patient care during the pandemic.

LATINX MENTAL HEALTH & RESILIENCY YOUTH AMBASSADOR PROGRAM

Empowering Lubbock Latinx Adolescents By Assessing Their Mental Health Needs Through Youth Participatory Action Research

Under the direction of **Dr. Brandy Piña-Watson**, Assistant Professor of Counseling, the Latinx Mental Health and Resiliency Lab has partnered with Tomorrow's Leaders, a grassroots youth empowerment leadership organization in the community, to develop and launch the Latinx Mental Health & Resiliency Youth Ambassador Program in Lubbock. The program aims to empower Latinx youth by equipping them with the skills and knowledge needed to critically examine their environment, conduct research on the needs of their community, and come up with recommendations for solutions to the issues they have identified.

Ten Youth Ambassadors, ranging from ages 14-18, will learn the skills and knowledge needed to critically examine their environment to identify the needs of their community and come up with recommendations for actionable solutions.

"We're going to help them learn the research skills, and they're going to carry out this research project with Instructional Review Board (IRB) approval at TTU," Piña-Watson said. "Then, we're going to help them analyze what they find and turn it into a presentation they can give to their families and community leaders."

This project also offers unique and impactful experience in research and community outreach for TTU students. Eight graduate and ten undergraduate TTU students were involved in this project from all aspects of the IRB application, recruitment of and continued work with Youth Ambassadors, and analyzing data.

YPAR aims to form a pathway for both schools and communities to benefit from youth's expertise and bring about social change at more systemic level by evaluating policies and institutions that affect adolescents. The Latinx Mental Health and Resiliency Lab plans follow up on recommendations made by the youth. This will result in grant applications and other forms of community partnerships to ensure the needs of Latinx youth and families are met.

TEXAS TECH MENTAL HEALTH INITIATIVE

Improving Care Throughout West Texas Partnerships

Six years ago, leaders from TTU and TTUHSC began assessing the mental health-related activities at each institution, envisioning a collaborative approach to mental health in which the universities of the TTU System contribute their expertise to solve problems in their communities and model solutions for the rest of the state and nation. So began the Texas Tech Mental Health Initiative (TTMHI).

The TTMHI is comprised of university and community partnerships in a dozen areas dealing with mental health. TTU and TTUHSC partners include the Burkhart Center for Autism Education & Research and the Center for Adolescent Resiliency and the Family Therapy Clinic, the Campus Alliance for Telehealth Resources, and the F. Marie Hall Institute for Rural and Community Health. TTU partnerships have grown to the College of Media & Communication, Athletics, and the School of Law, as well as on TTUHSC campuses in Amarillo, Abilene and the Permian Basin. Community partners include representatives from the City of Lubbock, Lubbock County, UMC, Covenant Health System, and StarCare Specialty Health System.

The TTMHI is intended to coordinate mental health efforts to avoid duplication and encourage collaboration, serve as a repository of systemwide knowledge on mental health, look for ways to apply research findings in clinical practice, and advocate for integrating best practices into public policy. "When the work to improve the mental health care system in West Texas is completed, we will have a coordinated continuum of care that includes all levels of care from prevention, early interventions, intensive outpatient care and inpatient care," said director **Nancy Trevino**.

...it's not Texas Tech fixing the Community. It's Texas Tech truly partnering and collaborating with our community agencies and entities so the programs, initiatives and projects we put in place are sustainable and live beyond us.

Nancy Trevino
Director, TTMHI

CAPROCK REGIONAL PUBLIC DEFENDER OFFICE AND CLINIC

The Caprock Regional Public Defender Office and Clinic (CRPDO), a full time- public defender office housed in the TTU School of Law, serves the community by representing defendants in criminal cases who would otherwise be unable to afford their own legal representation. The program is the first of its kind in Texas and is the prototype for representation of indigent clients.

Over the past 10 years, CRPDO and its student attorneys have represented defendants on almost 1500 cases in the counties served within the program. The benefits to the communities are almost immeasurable when one considers the financial impact to the individuals as well as the communities.

CRPDO historically carries a 60% to 70% dismissal rate. This results in fewer days in jail at county expense and more options available to the defendant.

CRPDO has trained 77 students in the area of criminal defense. This training is not solely in a classroom, it is training with actual clients in real courtrooms. Upon graduation and licensing, CRPDO students are more prepared for the everyday practice of law, not just criminal defense, than most other law students in the same position.

The Caprock Regional Public Defender Office serves the counties of Lubbock, Dickens, Kent, Stonewall, Castro, Swisher, Motley, Briscoe, Floyd, Hockley, Cochran, and Terry.

COLLABORATIVE EFFORTS WITH LUBBOCK IMPACT

Forty-two percent of Lubbock's population live in poverty, 23% of families live with incomes above the Federal Poverty Level, but not high enough to afford basic household necessities, and 18% of them are without health insurance. To assist and narrow the gaps in services, faculty and students from the College of Arts and Sciences Social Work Program have partnered with the TTUHSC Department of Internal Medicine to provide free services to low-income adults at the TTUHSC Medical Clinic at Lubbock Impact, a non-profit organization that aims to transform lives by administering material services such as food and clothing as well as spiritual support.

Undergraduate social work students hear first-hand accounts from the working poor about the challenges of living in poverty, who represent people with diverse characteristics and life experience. This helps them confront their own assumptions and biases, reflect more deeply on issues of social injustice, and evaluate the outcomes of social policy. Studies indicate that when a person is dealing with chronic health issues, mental health problems such as depression, and anxiety also occur.

This collaboration of medical and mental health practitioners effectively addresses the social work concept of "person-in-environment", understanding the individual from an environmental context, and gives service users a more "whole-health" experience. Students also practice engagement and interview skills, while learning about community resources, ways of assessing them, as well as unmet needs.

With Lubbock Impact's request that the project be expanded, the Social Work Program plans to continue working closely with the TTUHSC medical team and Lubbock Impact to provide the best standard of practice to their clients. The department is increasing master level student integration to enhance professionalism and continuity of social work care. Undergraduate social work students will be available to provide professional social work services to the service side of Lubbock Impact. The program is currently seeking grant funding to provide a wrap around service approach to help service users manage health problems affecting their daily lives.

CREATIVE INQUIRY AND EXPRESSION ACROSS THE ARTS, HUMANITIES, AND SCIENCES

TECH TERRACE MURAL PROJECT

At a Tech Terrace Neighborhood Association (TTNA) meeting in January of 2019, a resident discussed the unseemly sight of the wall surrounding the McCullough Substation on Elgin Avenue. He asked if there was something that could be done to make it more attractive. After reaching out to city council representative Jeff Griffith and Matt Rose, the Public Affairs and Government Relations Manager for Lubbock Power and Light (LP&L), Grant Gerlich with TTU Outreach and Engagement, met with TTNA for further discussion. It was decided that murals could be painted on the wall.

Over the next year, through the efforts of the TTNA, TTU, and the City of Lubbock, the mural project was set in motion. **Professor Andrew Martin** of the TTU School of Art committed his senior painting class to work on the project with students from Hutchinson Middle School. They collaborated on design and scope of the project with the neighborhood association agreeing to pay for the paint and supplies. The City of Lubbock and LP&L gave the green light for the project to begin. This is a mutually beneficial project where students get hands-on experience, the community gains an attractive work of art, and the city has an opportunity to promote the arts.

TTU STRING PROJECT

In 2001, faculty and staff of the J.T. Margaret Talkington College of Visual & Performing Arts (TCVPA), School of Music founded the Texas Tech University String Project (TTUSP) with the purpose of providing low cost beginning string instruction in the Lubbock community while, at the same time, offering an intensive guided teaching experience for undergraduate music students planning to make string teaching a part of their careers. The project began as a catalyst to provide string instrument instruction to elementary children interested in playing one of the five orchestral string instruments: violins, violas, cellos, double bass, and harp.

Throughout its twenty years of serving the Lubbock area, the TTUSP have supplemented the musical education of hundreds of students, many going on to participate in their school orchestras, other school music programs, and in community ensembles. The project has expanded its activities over the years, offering classroom instruction at Lubbock ISD elementary schools and adult instruction.

Through combined efforts with several other regional music organizations, TTUSP helped establish a new orchestra program in Lubbock-Cooper ISD in Fall 2019. **Dr. Blair Williams**, Assistant Professor of Music Education at the TTU School of Music, provided guidance and resources to help the district plan for the hiring of an orchestra teacher, proposed scheduling, and insights on other aspects of starting the new program.

Currently, TTUSP's biggest challenge is navigating online teaching and learning. In Spring 2020, the decision was made to pivot to virtual asynchronous teaching to help students and families. TTUSP also launched a new promotional video, paired with with staff instrument demonstration videos. The faculty, staff, and students of TTUSP will continue conversations with the community to enhance and provide access to string music education to additional school campuses throughout Lubbock.

CRACKING THE CODE, INFLUENCING MILLENNIAL SCIENCE ENGAGEMENT

Understanding scientific journals can prove difficult for even the most experienced communicators. Receiving facts without a scientific background and then being asked to change the format into that of a journalistic, understandable to the average reader style can be a daunting task. **Dr. Asheley Landrum**, an Assistant Professor at the College of Media & Communication, Department of Advertising at Texas Tech University, has partnered with KQED-TV, a PBS television affiliate in San Francisco, to research the role of human behavior in informal science learning and, ultimately, advance Millennial engagement with science. Her project, *Cracking the Code, Influencing Millennial Science Engagement*, seeks to increase collaboration between researchers, science communication professionals, and media practitioners. The project also provides research opportunities for undergraduate and graduate TTU students in the College of Media & Communication.

Four groups at KQED-TV - digital video, science news, audience engagement, and infographics - will use Dr. Landrum's research to create media content aimed toward improving Millennial informal science learning. Each group will work for two four-month periods with Dr. Landrum and her team.

As the project is already halfway through its expected timeline of three years, impacts have already been seen. These impacts result from potential reach of media content produced by KQED, as well as the potential for this knowledge to be broadly adopted by science communicators and media professionals. The online distribution of these products yields a global audience much greater than a specific geographic region or audience. The project has also shown several benefits to the university. Public recognition, sponsored research, and the potential for future partnerships are just some of the few benefits that *Cracking the Code, Influencing Millennial Science Engagement* has graced the university with so far. The project expects to continue to benefit TTU and the surrounding community, as well as achieve its goal of better understanding human behavior, scientific communication, and how it relates to informal science learning.

LUBBOCK CHILDREN'S LITERATURE AND FILM FESTIVAL

The Lubbock Children's Literature and Film Festival (LCLFF) is a community-oriented celebration of children's literature and film that intends to contribute to local and regional youth-based arts programming and raise awareness of reading and viewing as family-centered events. The project is led by **Dr. Wyatt Phillips**, an Assistant Professor of Film and Media Studies in the Department of English in collaboration with **Dr. Heather Warren-Crow** from the College of Visual and Performing Arts and **Dr. Katie Cortese** of the Department of English. Its goal is to bring families from Lubbock and across the South Plains together to promote children's literature and film as opportunities for learning, building family bonds, and forging community ties.

The inaugural annual festival was held on November 2, 2019, initiated via a small, one-time funding opportunity through the Department of English. It allowed project leaders to bring children's author and pop-up book "paper engineer" Bruce Foster to Lubbock. Foster shared a selection of his work and held a workshop for children on the math and magic of pop-up art. The event took place in the downtown campus of Louise Hopkins Underwood Center for the Arts (LHUCA), with LHUCA serving as a community partner for the event and was host to over 150 attendees over the course of the day.

The event concluded with the screening of three children's films aimed at younger children and facilitated through a relationship with KTTZ, the local PBS Public Media affiliate.

Project leaders intend to make the festival a yearly event that promotes Lubbock as a hub for youth art programming, family-centered learning, and entertainment on par with other such events in Texas and the region.However, in the face of the pandemic, they had to adjust this timeline and expect to begin again in early 2022. Future festivals plan to expand the use of visiting authors, illustrators, and filmmakers to reach a larger portion of the community. The hope is to leverage the power of literature and cinema to foster the imagination and build groups of shared interest.

PRE-K TO 12 SOCIAL AND ACADEMIC ENGAGEMENT

CISER'S VIRTUAL STEM CLUB

Adapting STEM Opportunities For The Web

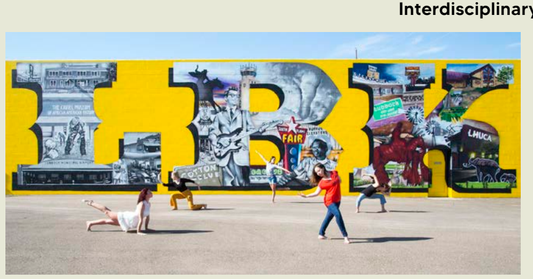
The Center for the Integration of STEM Education and Research (CISER) at Texas Tech's College of Education works with local and surrounding area schools to host after school STEM clubs. These clubs are intended to increase student exposure to the STEM disciplines by providing opportunities to participate in hands-on, engaging activities that spark student interest in STEM topics. Due to COVID-19, CISER adapted its STEM Club into a virtual format so that students and club leaders could have a meaningful experience while remaining safe during the pandemic. Alderson Elementary was eager to provide its students with this weekly virtual STEM Club opportunity.

In the program, Texas Tech undergraduate club leaders planned each week's activity and packed Ziploc bags with necessary supplies and instructions that were sent home with students. Students were also provided a video in which club leaders demonstrate the week's activity. Additionally, a PowerPoint made available through Google Drive allowed students to further explore STEM topics relating to the weekly activities. Once students had completed their project, they took a picture of the finished product and posted it on the STEM Club PowerPoint. Each student who made a post was eligible to win that week's prize.

The goal of the Alderson virtual STEM Club was to keep students actively engaged in STEM in a safe and meaningful way. A total of 45 Alderson students participated each week. That made the first ever virtual STEM Club the largest (virtual or in person) club that CISER has ever hosted, according to CISER's STEM Education Director, **Jill White**.

EVOLUTION OF GAIA

Interdisciplinary Arts Education Workshops for Lubbock School Children



A TTU dance faculty member, along with dance and music specialists from Flatlands Dance Theatre, a local non-profit, are developing interdisciplinary workshops for K-12 students in the Lubbock and Frenship Independent School Districts. The project, titled *Evolution of Gaia*, unites original choreography, music, and film in a production that aims to appeal to diverse audiences. A major component of this project involves developing and facilitating educational engagement for underserved children in the Lubbock community. *Evolution of Gaia* incorporates elements of dance, music techniques, improvisation, and literary analysis.

"We target our educational activities to K-12 students, expanding on elements of the creative process, a critical component of arts education that is underexplored in Texas state standards and in existing Lubbock programming," said **Dr. Ali Duffy**, Associate Professor of Dance at TTU and Co-Founder/Artistic Director of Flatlands Dance Theatre.

These early experiences can be life changing and may lead to lifelong learning and investment in the arts.

Ali Duffy
Associate Professor of Dance

While the project is still in its early stages, the collaborators have begun to develop creative approaches to educational engagement that incorporate elements of critical and transformational pedagogy with an emphasis on socially engaged classrooms. The workshops will be hosted at the Charles Adams Studio Project in the heart of the Lubbock Cultural District and will serve students from Ervin, Wester, and Roscoe Wilson Elementary; Hutchinson Middle; and Estacado, Lubbock, and Frenship High.

DIA DE LOS NINOS/DIA DE LOS LIBROS

School-Wide Community Read-Aloud and Book Giveaway

Starting in 2015, *Dia de los ninos/Dia de los libros*, more commonly known as *Dia*, has been an exciting event for Bean Elementary in Lubbock, Texas. Principal Tom Thomas has collaborated with TTU College of Education's **Rene Saldana** and **Ana Torres** yearly to conduct this event. A book is chosen which represents the school and student population's cultural background. Members of the local community are then invited to read aloud to the young students. All Pre-K through 5th grade students are read the same picture book by community volunteers. After reading to the class, volunteers often have a discussion with the students about their ideal careers, backgrounds, and experiences and the importance of being successful readers and students. At the end of the day, each student receives a copy of the chosen book, written in both English and Spanish, to begin their home library.

This event was started by the school as part of Thomas's initiative to reverse the statistic of Hispanic students historically underperforming academically. Thomas, Saldana, and Torres all believe in Luis Moll's Funds of Knowledge approach which states that, "when a child's home and cultural literacies are invited into the classroom they are thereby validated, and a child's chances at authentic learning increase considerably and measurably."

Saldana and Torres were awarded a grant by the Nora Robinson Foundation for this project. They plan to also reapply to the Family Literacy Day project, which will include partnerships with local writers/storytellers and artists who will teach students how to co-construct family stories alongside their family members and then adapt these narratives into a variety of art forms for public display.

2020 TTU OUTREACH AND ENGAGED SCHOLARSHIP K-12 ACTIVITIES

148	projects with K-12 participants
103,094	K-12 student and teacher participants

INTERNATIONAL ENGAGEMENT

A MULTI-YEAR ENGAGED SCHOLARSHIP BETWEEN TTU AND INDIA

Over the past decade, **Dr. Nora Griffin-Shirley**, Professor of Special Education and Director of Virginia Murray Sowell Center for Research and Education in Sensory Disabilities, and **Dr. Devender Banda**, Professor of Special Education and Coordinator of the Applied Behavior Analysis Program, have established an extensive international community partnership with India. Their collaboration aims to identify the personnel needs in the area of autism and disabilities, and subsequent development and implementation of training programs to prepare personnel to teach children with disabilities.

Initial contact was made with the Rehabilitation Council of India by Dr. Griffin-Shirley as a result of her Fulbright Scholarship. Community partners include Action of Autism – India, Inclusion Central, National Institute for Empowering Persons with Multiple Disabilities, National Institute for the Visually Handicapped, India Association of Rehabilitation Professionals, Special Olympics India, and faculty members Drs. Shri Ram Mittal, JP Singh, Yogendra Pandey, Hem Lata, and Amitav Mishra from universities across India, Banaras Hindu University, Amity University, Indira Gandhi National Open University, and Sri Venkateshwara University.

In partnership with Indian organizations, the TTU faculty identified a need for incorporating evidence-based practices (EBPs) to personnel preparation programs for teachers of children with visual impairments, special education teachers in autism and multiple disabilities, parents of children with autism spectrum disorder, and early childhood educators, to impact individuals with disabilities to improve their quality of life. To date, over 1000 teachers, professionals, faculty, and parents have benefited from the training, involving workshops, media presentations, and other scholarly activities.

COMMUNITY ENGAGEMENT THROUGH CORAL REEF RESEARCH

Coral reefs are vital to healthy marine ecosystems but are in serious decline due to pollution, global warming, and other threats. The decline of coral reefs has serious ecological consequences, as many local communities rely on tourism to coral reefs as a central source of income. With up to 80% of coral loss in the Caribbean, the ecological and economic effects are already being felt.

To address this threat, **Dr. John Zak**, Department of Biological Sciences at TTU Lubbock and **Dr. Stephanie Lockwood**, Department of Biological Sciences at TTU at Waco have begun a multinational, study abroad undergraduate research program to engage students in coral reef research. In partnership with McLennan Community College (MCC) and several Honduran organizations including the Roatán Institute for Marine Science (RIMS) and Roatán Marine Park (RMP), this initiative allows students to take an active hand in research and conservation, connecting the ocean to the classroom. Under the guidance of TTU, MCC, and RIMS personnel, students develop research projects that help to conserve the coral reefs in Honduras, specifically the island Roatán. Research findings are shared with RIMS to help conserve and restore the reefs onsite, and funds are raised to help purchase coral trees to aid restoration efforts across the island.

This initiative aims to promote safe and sustainable means to preserve and rehabilitate the coral reefs in Honduras, as well as to help enrich the lives of the island youth. The program partners with the School of Life International Foundation (SOL), a local non-profit that promotes education, arts, and athletics for local youth on the island. This partnership allows students to gain unique insights into conservation efforts, such as how to use glass trash to build retaining walls to minimize coastal erosion. The program has raised over $2,500 to purchase coral trees and supplies for the RIMS nursery program, which "farms" coral to help rehabilitate coral reefs decimated by rising temperatures, coral disease, and pollution.

Several students have presented their research at various local, state, and regional conferences, winning awards at the Texas Academy of Science and Texas Tech Annual Biological Symposium. Undergraduate student **Erin Castillo**, was invited to present her research at the Senate Hart Building in Washington, D.C.

SAVING LIVES: INDIA'S TECHNICAL TEXTILE REVOLUTION PAVED WAY FOR COVID-19 RESPONSE

As COVID-19 surged through the U.S. last spring and summer, the country found itself facing an alarming shortage of the personal protective equipment (PPE) frontline health care workers desperately needed to battle the pandemic. On the other side of the globe, India was embroiled in the same struggle, except for one key thing. Until mid-2020, the U.S. relied on China to produce most of the PPE it used. In contrast, India has been self-reliant – it was able to produce its own PPE because of its widespread support for and adoption of the technical textiles industry. Technical textiles such as nonwoven fabrics are important components of face masks, medical gowns and PPE. It wasn't always this way, but the work of one Texas Tech University professor over the last two-plus decades has played a vital role in preparing India for the very fight it's in now.

After completing his doctorate in materials, textiles, and fiber science in 1998, **Seshadri Ramkumar** joined Texas Tech. In 1999, with a major investment from the U.S. Department of Defense, he began researching nonwoven materials for defensive applications, such as chemical and environmental decontamination. The Indian government had begun its own work in the nonwovens sector, but it was nascent. To help the field grow, Ramkumar – now a professor of advanced materials at Texas Tech's Institute of Environmental and Human Health (TIEHH)– has partnered with the Indian government and technical textiles organizations around the world to host conferences in India since the early 2000s. The "International Conferences on Advances in Fibrous Materials", Nonwoven and Technical Textiles have been co-sponsored by notable industry groups including the American Association of Textile Chemists and Colorists (AATCC), the Association of the Nonwoven Fabrics Industry (INDA), and the Industrial Fabrics Association International (IFAI).

Professor A. Venkatachalam, former department chair at PSG College of Technology and former dean of textile technology at the Bannari Amman Institute of Technology, explains that the conferences and collaborations Dr. Ramkumar initiated across India have given the country significant expertise in nonwovens – and that has well positioned the country to deal with the pandemic.

PROMOTION OF BREASTFEEDING IN SOUTH AFRICA

TTU's Department of Nutritional Science Professor and Graduate Advisor **Dr. Wilna Oldewage-Theron**, and Department of Human Development and Family Services Professor and Program Director **Dr. Shera Thomas-Jackson**, have initiated a study to improve the exclusive breastfeeding (EBF) rates in South Africa.

The World Health Organization encourages EBF for the first 6 months of life. This presents a problem for the mothers of South Africa where, due to malnutrition and food deprivation, breastmilk often does not include all the nutrients required for a healthy child. The study aims to determine the barriers to breastfeeding, identify the determinants of breastmilk quality, and develop educational materials regarding the benefits of EBF for mothers and midwives.

The project involves undergraduate, graduate, and Ph.D. students alike and has provided them with overwhelming opportunities to engage in the research. Undergraduate students from Nutrition Sciences and Human Development and Family Studies are trained in data collection, management, and analysis while master's students earn international research experience and Ph.D. qualification for their role in the study. The researchers will visit South Africa and, in turn, will increase their international network and experience. Outside of the university, the study will impact international science through various collaborative scientific journal publications and national and international conference papers.

Researchers will monitor the outcomes in South Africa and then identify if the community requires another intervention or a follow-up project. The research ascertained will be translated into educational materials for the mothers in South Africa which allows the midwives/lactation specialists in the area to educate pregnant women in the community on the importance of nutrition in relation to breastfeeding. Within the food and nutrition field, the outcomes may also be of use in other parts of South Africa to help individuals and communities make informed food choices and improve household food security, malnutrition, and EBF rates.

DEFENSE POW/MIA HUB AND SPOKE PROGRAM

Finding and Identifying 77,000 MIAs from WWII, Korea, and Vietnam

The Defense POW/MIA Accounting Agency (DPAA) selected Texas Tech's Institute for Peace & Conflict (IPAC) and its Vietnam Center & Sam Johnson Vietnam Archive (VNCA) as a partner in the "Hub and Spoke" program to support research that will help locate and identify individuals listed as MIA from World War II, the Korean War, and the Vietnam War. The TTU Vietnam Center and VNCA's mission is to collect and preserve the history of the Vietnam War and to support research and education regarding those experiences.

After purchasing a copy of the 950-reel microfilm collection of more than 2.7 million pages of North Vietnamese and Viet Cong documents from the Combined Document Exploitation Center (CDEC), TTU, VNCA, and the DPAA collaborated to make the historical collection completely accessible using modern digital technologies. By using declassified intelligence code and subject term manuals that were used to create the microfilm, the VNCA was able to digitize the collection and convert the coded intelligence data into useful research metadata, making all 2.7 million pages available and searchable through the Virtual Vietnam Archive. As the database and Texas Tech's reputation as the place to conduct research on the Vietnam War grew so did the History Department's role in Vietnam War scholarship thus making TTU a perfect candidate for the Hub and Spoke program.

The DPAA/IPAC/VNCA collaboration has had a positive impact on students, faculty, staff, and archivists. Historians at the beginning of each MIA project conduct interviews, receive After Action Reports, unit histories, and act as a liaison to the individual's family during the excavation and remains return processes. Archivists are instrumental during the process by providing information about helicopter crashes, battles, ambush patrols, or other incidents that may have resulted in MIAs.

With Texas Tech being one of only a few universities chosen for the "Hub and Spoke" project there is an increase in the number of students choosing to remain at Tech to continue their graduate study and participate in the program. With that has come the need to create new interdisciplinary graduate courses under IPAC designation that expose students to forensic archeology, historical research methods, geographical modeling, crash dynamics, ordinance removal, and other topics which are necessary in the recovery of remains.

"We are honored to have been selected as one of a few universities to conduct research to help bring closure to the families who have lost loved ones."

Ron Milam
Executive Director, IPAC

CALENDAR YEAR 2020 BY THE NUMBERS

Each year, Texas Tech gathers data about its outreach and engagement activities. The results help the institution establish progress towards its strategic goal of outreach and engaged scholarship. Faculty and staff were invited to submit information about any outreach and engagement projects and activities they conducted between January 1, 2020, and December 31, 2020.

In spite of COVID-19 having had a significant impact on the university's day-to-day operations, research, and instructional activities, the Calendar Year 2020 assessment results reflected a continued commitment by faculty, staff, and students to engage with communities. The following provides highlights of the results from the 2020 assessment. Data was compiled from voluntary submissions received via the Raiders Engaged online survey, Digital Measures, as well as INDICO (TTU's non-credit activities database).

542
projects, programs, classes, and events provided for the community

$43.9M
raised in external funding

347,240
non-TTU attendees and participants in TTU outreach and engagement activities

708
external community partnerships

including non-profit or government agencies, business and industry, Pre-K and K-12 schools, other two or four - year colleges, community organizations, and civic groups

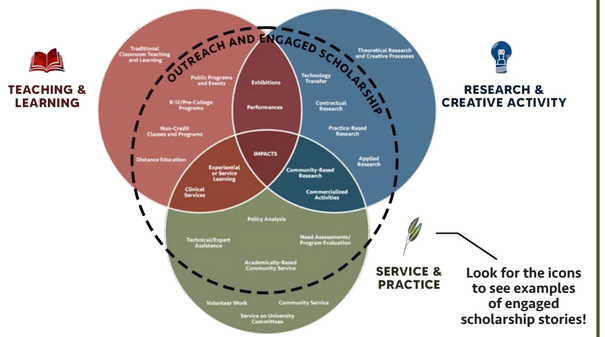
863
TTU faculty and staff involved in projects and activities

457
publications, presentations, performances, and other peer-reviewed scholarly products identified as outreach and engagement

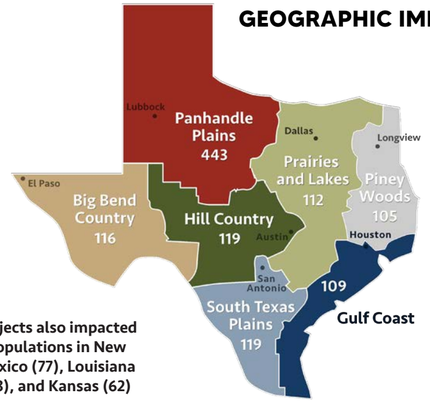
48
faculty receiving awards for excellence in outreach and engagement

11,497
TTU students participating in High Impact Practices

TYPES OF OUTREACH & ENGAGED SCHOLARSHIP



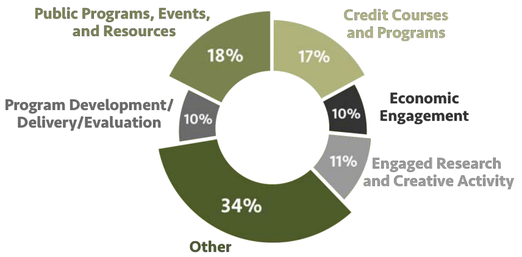
GEOGRAPHIC IMPACT



Projects also impacted populations in New Mexico (77), Louisiana (63), and Kansas (62)

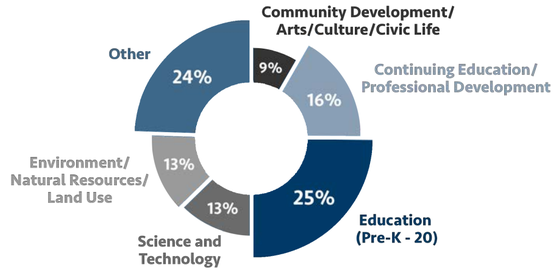
PROJECTS BY:

FORMS OF ENGAGEMENT



The highest number of projects addressed Pre-K-12 Education (18.9%), followed by Community Development/Arts/Culture/Civic Life (11%), Science and Technology (11%), and Health and Health Care (10.4%).

AREAS OF IMPACT



DISCOVERIES TO IMPACT

DISCOVERIES TO IMPACT 2022

Discoveries to Impact brings together faculty, staff, students, and the community for a showcase of research, engagement, innovation, and business startups. Scheduled events are comprised of the annual Engaged Scholarship Symposium, Undergraduate Research Conference, and the TTU Accelerator Competition.

Texas Tech's Center for Transformative Undergraduate Experiences (TrUE), the Innovation Hub at Research Park, the Center for Integration of STEM Education and Research (CISER), and the Office of University Outreach and Engagement are proudly hosting the 2022 Discoveries to Impact Week March 28 – April 1, 2022.

For further details regarding the 2022 schedule, keynote speakers, and activities, or to learn how to get involved, visit the Discoveries to Impact 2022 website.

Engage at TECH CENTRAL

In early 2020, UOE launched Engage at Tech Central, an online engagement hub designed to spread awareness of Texas Tech sponsored outreach events and community resources, as well as to inspire and foster university partnerships, faculty-led research projects, and high impact, community-based learning experiences for students.

University Outreach and Engagement
Drane Hall, 3rd Floor, Box 41047 Lubbock, Tx 79409
universityoutreachandengagement@ttu.edu
www.outreachandengagement.ttu.edu
806-742-2392