

Kristen E Brown, PhD

Assistant Professor

Division of Civil and Environmental Engineering
School of Civil and Environmental Engineering and Construction Management
Klesse College of Engineering and Integrated Design
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Educational Background

Institution	Date	Degree	Field of Study
University of Colorado at Boulder	2016	PhD	Environmental Engineering
University of Colorado at Boulder	2013	MS	Mechanical Engineering
University of California at Berkeley	2010	BA	Physics

Dissertation: The Benefits of Internalizing Air Quality and Greenhouse Gas Externalities in the US Energy System

Employment History

Institution	Dates	Position
University of Texas at San Antonio	2020-Present	Assistant Professor
Georgia Institute of Technology	Summer 2024	Energy Faculty Fellow
FTI Consulting	2023-2023	Independent Consultant
US Environmental Protection Agency	2016-2020	Environmental Engineer
University of Colorado at Boulder	2010-2016	Graduate Research Assistant
Space Sciences Laboratory	2008-2010	Research Assistant
Lawrence Berkeley National Laboratory	Summer 2005	Research Intern

Awards and Honors

Award	Institution	Date
Outstanding Young Faculty	GSW Section of ASEE	2025
Finalist for Women in Science Incentive Prize	The Story Exchange	2022
Honorable Mention for Scientific and Technological Achievement Award (STAA)	US EPA	2019

Award Continued		Institution	Date
Participant (Competitive) at Advancing Careers in Academics with Diversity Education and Mentorship in Engineering (ACADEME)		NSF	2019
Superior Performance Award		US EPA	2019
Participant (Competitive) at National Science Communication Conference		ComSciCon	2015
Best Air Quality Talk at the Graduate Engineering Research Symposium		CU Boulder	2013
First Place Energy Policy Poster		Energy Frontiers Conference	2011
Recognition for Students			
Award	Student	Institution	Date
Best Presentation	Dom Dorsa	SURE program	2024
DDETFP Fellowship (\$8,500)	Christina Kastely	US DOT FHWA	2024
DDETFP Fellowship (\$4,000)	Divanhy “Nani” Salazar	US DOT FHWA	2024
DDETFP Fellowship (\$2,500)	Katie Whatley	US DOT FHWA	2024
Klesse UG Research Program (\$1,000)	Jennifer Dominguez	KCEID (UTSA)	2024
Outstanding Research Presentation	Dominic Dorsa	Georgia Tech	2024
Eisenhower Fellowship (\$10,000 award)	Christina Kastely	US DOT FHWA	2023
Undergraduate research \$1,000	Stanley Ngo	KCEID (UTSA)	2022
Travel Award	Alyssa Arcos	SACNAS	2022

Research Activities

Publications

Students for which KEB is primary supervisor in *bold+italics*, * denotes corresponding author

Peer Reviewed Journal Articles

Date	Authors	Journal	Title	Impact [†]	pp.	DOI
2024	Brown, K.* , Sharma, B.	Progress in Energy	A SEAT at the Energy Table	CB: 1 JIF: 11.5	0430 06	10.1088/2516-1083/ad828f
2025	<i>Ngo, S.</i> , Murphy, B., Nolte, C., Brown, K.*	Environmental Modelling and Software	Bridging existing energy and chemical transport models to enhance air quality policy assessment	CB: 1 JIF: 4.8	1062 18	10.1016/j.envsoft.2024.106218
2024	Lopez Ochoa, E., Brown,	Urban Climate	Quantifying the spatial aggregation bias of urban heat data	CB: 0 JIF: 6.4	1019 45	10.1016/j.uclim.2024.101945

Date	Authors	Journal	Title	Impact†	pp.	DOI
	K.E.* , Lee, R.J., Zhai, W.					
2020	Brown, K.* , Henze, D. K., & Milford, J. B	Air Quality, Atmosphere & Health	Comparing health benefit calculations for alternative energy futures	CB: 5 JIF: 5.8 AM: 9	773-787	10.1007 / s11869-020-00840-8
2019	Brown, K.* , Dodder, R.	Transportation Research Part D: Transport and Environment	Energy and emissions implications of automated vehicles in the US energy system	CB: 50 JIF: 7.0 AM: 10	132-147	10.1016 / j.trd.2019.09.003
2019	Brown, K.* , Loughlin, D.H.	Clean Technologies and Environmental Policy	Market sensitivity of solar–fossil hybrid electricity generation to price, efficiency, policy, and fuel projections	CB: 2 JIF: 4.7 AM: 1	591-604	10.1007 / s10098-018-1659-3
2018	Brown, K.* , Hottle, T.A., Bandyopadhyay, R., Babaee, S., Dodder, R.S., Kaplan, P.O., Lenox, C.S., Loughlin, D.H.	Environmental Science & Technology	Evolution of the United States Energy System and Related Emissions under Varying Social and Technological Development Paradigms: Plausible Scenarios for Use in Robust Decision Making	CB: 20 JIF: 11.4 AM: 13	8027 - 8038	10.1021 / acs.est.8b00575
2017	Brown, K.* , Henze, D.K., Milford, J.B.	Energy Policy	How accounting for climate and health impacts of emissions could change the US energy system	CB: 41 JIF: 7.6 AM: 1	396-405	10.1016 / j.enpol.2016.12.052
2013	Brown, K.* , Henze, D.K., Milford, J.B.	Environmental Science & Technology	Accounting for Climate and Air Quality Damages in Future U.S. Electricity Generation Scenarios	CB: 47 JIF: 11.4 AM: 2	396-405	10.1021 / es304281g

†Cited by (according to Google Scholar) (CB); Journal Impact Factor (JIF); Altmetric (AM)

Reports – Not Peer-Reviewed

Brown, K.E., Lopez Ochoa, E., Lee, R.J., Zhai, W.; An Assessment of Urban Heat Vulnerability in San Antonio, TX. 2023. SanAntonio.gov

Popular Media Contributions – Not Peer-Reviewed

August 23, 2024 Interviewed on camera for Kens5, the local CBS affiliate, for a story about heat-related mortality

August 12, 2024 Cited in Dallas Morning News article on cool pavement

May 11, 2024 Cited in San Antonio Report article on San Antonio’s cool neighborhood pilot program

Peer Reviewed K-12 Curriculum

Brown, K., Hippel, B., Perez-Suarez, S.D., Straten, M., Zarske, M.S., Yowell, J., Samson, C., 2012. Oil on the Ocean, TeachEngineering.org.

Brown, K., Forbes, M., 2012. Hi Ho, Hi Ho, it’s to the Mine We Go, TeachEngineering.org.

Brown, K., 2012. What Kind of Footprint? Carbon Footprint, TeachEngineering.org.

Conference Proceedings - Not Peer-Reviewed

Brown, K., 2015. Internalizing Air Quality and Greenhouse Gas Externalities in the US Energy System, CU STEMinar Journal, Volume 1, Edition 1.

Brown, K., Henze, D., Milford, J., 2014. The Effect of Criteria Pollutant and Greenhouse Gas Damage Based Fees on Emissions from the US Energy System, Community Modeling and Analysis System (CMAS) conference proceedings

Brown, K., Henze, D., Milford, J., 2014. Internalizing Life Cycle Externalities in the US Energy System, Proceedings of LCA XIV.

Submitted Manuscripts and Pre-Prints

Ellis, F., Johnson, D.W.*, **Brown, K.E.**, Giacomoni, M., Kapoor, V., “Assessment of Media Replacement Costs and Pollutant Removal Efficiencies in Low Impact Development Sand Filters” **Submitted to Journal of Environmental Management March 31, 2025**

Manuscripts in Preparation

Brown, K.E., Garcia Menendez, F., Nwadiaru, O.V., Application of a Simplified Framework for Energy Justice in the Global South. **(Target submission spring 2025)**

Zuniga Herrera*, A., **Brown, K.E.**, Santiago, I., The Effect of Electric Vehicles on the Power System **(Analysis has been completed; draft is being completed by graduate student AZH at UTEP)**

Brown, K.E.*, Lopez Ochoa, E., Lee, R.J., Zhai, W., “Developing a Multifaceted Characterization of Intra-urban Heat Vulnerability using a Case Study of San Antonio, TX”

Dorsa, D., Ramshankar, A., Brown, K.E., Turner, M., White, J., Bozeman, J., “Investigation of Obstacles to Achieving Equity in Electric Vehicle Adoption” **(Draft in progress)**

Williams, N., Mendoza, S., Lopez Ochoa, E., **Brown, K.E.**, “Grid Effects of Intentional Charging Behavior” **(Draft in progress for submission May 2025)**

Mendoza, S.A., Lopez Ochoa, E., **Brown, K.E.**, “Determining Accessible Locations for EVCS in Bexar County, TX” **(Draft in progress for submission May 2025)**

Luhurs, A., Tennant, M., Halvaksz, J., **Brown, K.E.**, “Measured and Perceived Environmental Quality in a Heat Stressed Urban Municipality” **(Data analysis is being finalized, a draft has been started)**

Scholarly Presentations

Invited Oral Presentations - Not Peer-Reviewed

Date	Venue*	Location	Title
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Jan 2025	Clean Air Force of Central Texas	Austin, TX	Atmospheric Air Quality Variability in San Antonio
Oct 2024	CIVIC Innovation Challenge Community of Practice	Washington, DC	Measuring Atmospheric Variability to Manage Intra-Urban Heat and Air Quality
Sept 2024	Energy Justice Workshop & Policy Dialogue	Washington, DC	A Seat at the Energy Table
May 2024	Climate Change, Aging, and Health across the Life Course Workshop	Madison, WI	Prioritizing Mitigation Measures Based on Varying Health and Social Vulnerabilities
Apr 2024	State Energy Conservation Office & Alamo Area Council of Governments	San Antonio, TX	Energy Efficient Roofing Workshop
Apr 2024	Heat Island Research Workshop: Austin and San Antonio, Texas	San Antonio, TX	Prioritizing Mitigation Efforts for Urban Heat Vulnerability
Feb 2024	Civil & Environmental Graduate Seminar UTSA	Zoom	Variability and Justice in the Urban Environment
Feb 2024	Texas A&M Kingsville Environmental Engineering Graduate Seminar	Zoom	Variability and Justice in the Urban Environment
Jan 2024	American Petroleum Institute (API) Mechanical Integrity Summit	San Antonio, TX	Panel: Impacts on Operators Due to Methane Emissions are Real and Rapidly Escalating
Oct 2023	Energy Justice in the Energy Transition Pre-Publication Workshop	Dallas, TX	Advancing Equity in Energy through a Simplified Framework
Oct 2023	SmartSA	San Antonio, TX	Researching the Urban Environment in a Smart City
Sept 2023	Urban Sustainability Directors Network	Online	Urban Heat Priority Assessment
Oct 2022	USAEE	Houston, TX	How Emissions Reductions from the Energy System Affect Future Air Quality
Mar 2021	Geological Sciences & CEE Seminar Series, UTSA	San Antonio, TX (via Zoom)	Evolution of the United States Energy System and Related Emissions under Varying Social and Technological Development Paradigms
Mar 2021	Civil, Construction, and Environmental Engineering Seminar, UNM	Albuquerque, NM (via Zoom)	Evolution of the US energy system under varying paradigms

Sept 2020	Environmental Science Seminar, UTSA	San Antonio, TX (via Zoom)	Evolution of the US energy system under varying paradigms
Feb 2020	CEE Seminar, UTSA	San Antonio, TX	Emissions Projections of Possible Energy System Futures
Feb 2020	Gillings School of Public Health, UNC	Chapel Hill, NC	Health Effects Associated with Vehicle Automation
Jan 2020	CEE Seminar, OSU	Stillwater, OK	Energy and Emissions Implications of Vehicle Automation
Dec 2019	Science Technology and Public Policy seminar at RIT	Rochester, NY	How technological development affects the implementation of Renewable Portfolio Standards
Jan 2019	Center for Energy Studies at LSU	Baton Rouge, LA	Accounting for Health Impacts of Energy Related Emissions
May 2018	Information Exchange with DOT, DOE, EPA	Webinar	Information Exchange on Connected, Autonomous, Shared, Electric Vehicles
April 2018	General Education Seminar for Cal Alumni Club of North Carolina	Durham, NC	How Air Quality Affects your Health
April 2018	EPA Office of Transportation and Air Quality	Research Triangle Park, NC	Potential regional impacts of automated vehicles.
Feb 2018	EPA Office of Transportation and Air Quality	Webinar	Potential emission impacts of automated vehicles
April 2017	EPA Office of Air Quality Planning and Standards	Research Triangle Park, NC	Impact of various energy pathways on future emissions
Sept 2016	Environmental Water Resources, and Coastal Engineering, seminar, NC State	Raleigh, NC	Internalizing Externalities of the US Energy System
June 2015	Harvard TH Chan School of Public Health	Boston, MA	Calculating the health effects of a policy to internalize health-based damages in the US Energy System
Oct 2014	LCA XIV Conference	San Francisco, CA	Internalizing Life Cycle Externalities in the US Energy System

Oral Presentations - Not Peer-Reviewed

Date	Venue*	Location	Presenter	Title
July 2024	SURE program	Atlanta, GA	Dom Dorsa	Identifying Barriers and Opportunities for Equity in Green Accessibility
Oct 2023	Association of Collegiate Schools of Planning	Miami, FL	RJ Lee	Planning for walkable communities through the lens of equity: The relationship between walkable environment and heat exposure in San Antonio, Texas
Apr 2023	Urban Affairs Association Conference	Nashville, TN	W. Zhai	Walkable but not walkable? A geospatial relationship between urban environment and heat exposure through the lens of equity in San Antonio, Texas
Mar 2023	Council of Educators in Landscape Architecture	San Antonio, TX	RJ Lee	A spatial analysis of the heat island effect and green infrastructure: a case study of San Antonio, Texas
Jan 2020	TRB	Washington, DC	K. Brown	Monetized Health Benefits of Regional Emissions Changes Due to Scenarios of Vehicle Automation
Oct 2019	USAEE	Denver, CO	K. Brown	How External Factors Influence Policy Goals using the Example of Renewable Energy Standards
Oct 2019	CMAS	Chapel Hill, NC	K. Brown	Comparing Projected and Modeled Health Benefits of Alternative Energy Futures
June 2019	Energy and Society in Transition	Tempe, AZ	K. Brown	Plausible Energy Scenarios for use in robust decision making
Jan 2019	TRB	Washington, DC	K. Brown	Energy and Emissions Implications of Automated Vehicles in the US Energy System
				(Research was selected for presentation, but due to a partial government shutdown was not presented.)
Oct 2017	CMAS	Chapel Hill, NC	K. Brown	Plausible Energy Scenarios for use in robust decision making
Oct 2015	USAEE	Houston, TX	K. Brown	Sensitivity of Solar Fossil Hybrid Electricity Technology Penetration to Price and Efficiency Projections

Date	Venue*	Location	Presenter	Title	Oral, Continued
Oct 2015	CMAS	Chapel Hill, NC	K. Brown	Air Quality Impacts of Damage Based Emissions Fees	
Oct 2014	CMAS	Chapel Hill, NC	K. Brown	The Effect of Criteria Pollutant and Greenhouse Gas Damage Based Fees on Emissions from the US Energy System	
June 2014	GEIA Conference	Boulder, CO	K. Brown	The Effect of Damage Based Emissions Fees on Future US Emissions	
May 2012	World Renewable Energy Forum	Denver, CO	K. Brown	Incorporating Climate and Air Quality Externalities in the US Electricity System	
Mar 2011	American Chemical Society	Denver, CO	K. Brown	The Effect of Incorporating Air Quality and Climate Externalities in Future US Electricity Scenarios	
Nov 2006	American Physical Society	Dallas, TX	K. Brown	Characterizing Deuteron Breakup on Thin Targets at 20 MeV	

Poster Presentations - Not Peer-Reviewed

Date	Venue*	Location	Presenter	Title
Mar 2025	ASEE-GSW	Arlington, TX	J. Dominguez	Bexar Air: Quality Assurance Plan
Jan 2025	TRB	Washington, DC	S. Mendoza	Determining Equitable Locations for EV Charging Stations in Bexar County, TX
Jan 2024	TRB	Washington, DC	F. Ellis	Best Management Practices Maintenance Requirements to Ensure Protection of Edwards Aquifer Water Quality
Sept 2023	ASPIRE research center	Boulder, CO	A. Zuniga Herrera	Technologies Needed for CO ₂ Reductions based on Least Cost Optimization using TIMES modeling
Jun 2023	AEESP	Boston, MA	F. Ellis	Maintenance of Structural BMPs and Water Quality
Jan 2023	TRB	Washington, DC	C. Kastely	Implementing a sensor network to capture current and changing concentrations of PM _{2.5} as the Bexar County transportation system evolves
Oct 2022	SACNAS NDiSTEM	San Juan, PR	A. Arcos	Quantifying Inequitable Exposure to Air Pollution in Bexar County, TX

Date	Venue*	Location	Presenter	Title	Poster, continued
Oct 2022	ASPIRE research center	Logan, UT	A. Zuniga Herrera	Emissions Outlook of Different Degrees of Adoption of Light Duty Electric Vehicles Using Energy Information Administration's Priorities	
Aug 2022	CIMA LSAMP	San Antonio, TX	A. Arcos	Quantifying Inequitable Exposure to Air Pollution in Bexar County, TX	
Dec 2019	AGU	San Francisco, CA	K. Brown	Increasing the Use of Near-zero Emission Energy Technologies Depends on Social, Technological, and Policy Factors	
May 2019	Climate Change and Resilience Symposium	Chapel Hill, NC	K. Brown	Energy and Emissions Implications of Automated Vehicles	
April 2013	Energy Frontiers Conference	Boulder, CO	K. Brown	The Effect of Damage Based Fees on Future US Electricity Generation	
April 2011	Energy Frontiers Conference	Boulder, CO	K. Brown	The Effect of Accounting for Costs of Air Quality and Climate Impacts on the Future US Electricity Mix. Awarded 1st Place Energy Policy poster	
Dec 2008	AGU	San Francisco, CA	K. Brown	Dispersive Ion Injection Signatures Observed at FAST Altitudes during Times of Northward IMF: Characteristics and Origins	

*Abbreviations for conferences

- AEESP: American Academy of Environmental Engineers and Scientists
- AGU: American Geophysical Union
- ASEE: American Society of Engineering Education
- CMAS: Community Modeling and Analysis System
- SACNAS NDiSTEM: Society for Advancement of Chicanos/Hispanics & Native Americans in Science National Diversity in STEM conference
- TRB: Transportation Research Board
- USAEE: United States Association of Energy Economics

Granting Activities

Agency	Submit date	Title	Project dates	Role Effort	*	Request Amount	Award
Funded							
NSF	5/1/2024	Civic-PG Track A: Measuring and Managing Intra-urban heat islands	10/1/2024-3/31/2025	PI 20%	R	\$75k	\$75k

Agency	Submit date	Title	Project dates	Role Effort	*	Request Amount	Award
MSRDC MSI STEM Research & Development Consortium	11/28/ 2023	Hispanic Alliance for Clean Energy Education and Research (HACEER)	10/01/2024 to 01/31/2027	Co-I 5%	I	\$650k	\$520k
City of San Antonio	09/26/ 2023	Enabling Informed Site Selection for Heat Mitigation	12/21/2023 to 12/31/2024	PI 20%	R	\$50k	\$50k
CPS Energy	06/30/ 2023	Optimize EV Charging Infrastructure for Grid Management	09/01/2023 to 08/31/2025	PI 50%	R	\$500k	\$250k
City of San Antonio	12/7/ 2022	How Can We Direct City Resources Toward the Areas Most Impacted by Extreme Heat?	03/01/2023 To 12/31/2023	PI 25%	R	\$25k	\$35k
UTSA VPR University of Texas San Antonio	3/24/ 2021	Changing Environment in the Glacial Watershed of the Cordillera Blanca, Peru under the Warming Climate: Understanding the shifting local dynamics of water availability, agriculture, and energy product	10/01/2021 To 07/31/2022	Co-I 33%	R	\$20k	\$20k
SARA San Antonio River Authority	11/23/ 2020	Best Management Practice (BMP) Maintenance Requirements to Ensure Protection of Edwards Aquifer Water Quality	5/1/2021 To 4/30/2024	Co-I 10%	R	\$619k	\$619k
Pending							
TxDOT	3/25/2 025	PS 26-100: The Effects of Road Types and Construction Activities on Particulate Matter and Development of Best Practices for PM2.5 Reduction		PI 30%	R	\$455k	
NSF	3/3/20 25	Civic-FA Track A: Measuring Atmospheric Variability to Manage Intra- urban Heat and Air Quality	10/1/2025 to 09/30/2026	PI 30%	R	\$1M	

Agency	Submit date	Title	Project dates	Role Effort	*	Request Amount	Award
NSF	1/16/2025	NSF R2I2: Community-Driven Climate Resilience Solutions in the Southern Great Plains: Addressing Rising Temperatures from Averages to Extremes		Co-I 30%	R	\$132k	
City of San Antonio	7/26/2024	Sensor Air Temperature and Air Quality Evaluation related to Urban Heat Island Mitigation Measure Implementation		Co-I 10%	R	\$46k	
Unfunded							
US EPA Environmental Protection Agency	06/25/2024	Integration and assessment of a community driven air sensing system to promote environmental justice		PI 25%	R	\$1.25 M	
NASA National Aeronautics & Space Admin	05/03/2024	From space to community action: Remote Sensing and Digital Twins for empowering communities towards heat and air quality resilience and advocacy.		Co-I 10%	R	\$875k	
National Academies of Science and Engineering	4/10/2024	Our City Our Future, Place-Based Education Program Empowering Youth to Construct a Sustainable Future	09/03/2024 to 08/31/2026	Co-I 15%	I	\$485k	
NSF National Science Foundation	11/17/2023	DISES: The Local Dynamics of Climate Change, Food Production, and Water Management in a Tropical Glacier System: a 6,000-year perspective on Andean human-environment relationships	08/01/2024 to 07/31/2028	Co-I 27%	R	\$1.8M	
UTSA VPR University of Texas San Antonio	03/06/2024	Techno-Ecological Synergy for Solar Photovoltaic Integration	10/07/2024 to 04/30/2026	PI, 50%	R	\$20k	

Agency	Submit date	Title	Project dates	Role Effort	*	Request Amount	Award
US EPA Environmental Protection Agency	08/30/2023	Cumulative Environmental Health Impact as a Function of Community Resilience and Presence of Threats	07/01/2024 to 06/30/2027	PI 40%	R	\$2M	
US Dept of Housing & Urban Development	06/01/2023	Housing Research Center for Advancement of Sustainability & Affordability	07/03/2023 to 07/03/2026	Co-I 10%	R	\$2.5M	
National Academies of Sciences Engineering and Medicine	05/03/2023	Environmental Protection in the Gulf	09/01/2023 to 08/31/2025	PI 100%	R	\$76k	
UTSA VPR University of Texas San Antonio	04/19/2023	Heat exposure during non-motorized travel: Implications for transportation policy of San Antonio	09/01/2023 to 08/31/2024	Co-I 25%	R	\$25k	
UTSA VPR University of Texas San Antonio	03/22/2023	Unifying climatological measurements across spatial and temporal scales and heights	09/01/2023 to 08/31/2024	PI 40%	R	\$50k	
US Dept of Agriculture	12/14/2022	Cultivating Future Workforce for Agriculture 4.0 through Informing, Engaging, and Incentivizing STEM Students	08/01/2023 To 07/31/2027	Co-I 20%	I	\$4.9M	
NASA (via SwRI)	11/22/2022	Urban heat island modeling and socioeconomic outcome modeling: The case of San Antonio, TX	03/01/2023 To 03/03/2025	Co-I 15%	R	\$645k	
US DOT Department of Transportation	8/25/2022	C-CLEAN IT – Center for CLimate and Environmental Abatement kNowledge for Infrastructure and Transportation	11/15/2022 To 11/14/2023	Co-I 20%	R	\$3M	
NSF National Science Foundation	7/26/2022	CAREER: Planning for a Sustainable, Healthy, Energy Rich Future	9/1/2022 To 8/31/2027	PI 100%	R	\$780k	

Agency	Submit date	Title	Project dates	Role Effort	*	Request Amount	Award
US DOE Department of Energy	6/16/ 2022	Urban Integrated Field Laboratory for Climate Research and Environmental Justice in the South Central US	09/01/2022 To 08/31/2027	Co-I 12.5 %	R	\$12.4 M	
NSF National Science Foundation	5/5/ 2022	Civic-PG Track A: Equitable measures to improve heat wave resilience in San Antonio TX	10/10/2022 To 3/31/2023	Co-I 14%	R	\$50k	
CPS Energy	11/22/ 2021	Interaction Between Vehicle Electrification, Emissions, and Capacity Expansion	1/1/2022 To 1/31/2023	PI 100%	R	\$288k	
TX DOT Texas Dept of Transportation	3/10/ 2021	Quantify the Real Impact of Transportation Activity on Regional Ozone and Near-Road PM Concentrations	09/01/2021 To 08/31/2023	PI 70%	R	\$384k	
NSF (via SMU) National Science Foundation	1/7/ 2021	SRS RN: Next-Generation Regional Transportation Systems: Sustainability-Driven Framework for Infrastructure Engineering and Social Welfare Optimization	06/01/2021 To 05/31/2022	PI 100%	R	\$4k	

*R = Research, I = Instructional, S = Public service

Teaching Activities

Courses Taught

Course Number	Semester(s) Taught	Course Title	Instructor Rating	Enrollment
CE 1301	Spring 2024	Intro to Civil Engineering	4.43/5	57 undergraduates
	Fall 2023		4.22/5	93 undergraduates
CE 2633	Spring 2025	Environmental Engineering	IP	50 undergraduates
	Fall 2024		3.91/5	61 undergraduates
	Spring 2024		3.19/5	56 undergraduates
	Spring 2023		4.20/5	56 undergraduates
	Spring 2022		4.11/5	49 undergraduates
CE 4633	Spring 2023	Water & Wastewater Treatment	3.35/5	44 undergraduates

CE 5613/	Fall 2024		Environmental	4.6/5	9 graduate students 3 undergraduates
CE 4613	Fall 2022		Chemistry	3.75/5	8 graduate students
	Spring 2021	▪		5/5	7 graduate students
CE 5733	Fall 2023		Air Pollution Control	4.17/5	10 graduate students
	Fall 2021	*		5/5	6 graduate students
CE 6953	Summer 2022	*	Life Cycle Analysis	NA	Independent Study
CE 5991					4 graduate students
CE 6991	Spring 2024		Graduate Seminar	4.76/5	7 graduate students
ES 5981/ CE6621					20 graduate students

*Newly developed course, not previously taught at UTSA

▪New preparation of course previously taught by another instructor

■Peer observation report available

x co-taught course

Students mentored

Student	Dates	
Students Advised Directly		
Graduate Research Assistants		Program
Somtochukwu Onuegbu	Aug 2024-present	CE PhD
Tristan Arias	Aug 2024-present	ESE PhD
Christina Kastely	Jan 2022-February 2025	ESE PhD
Bradley W. Abbott	Jan 2024-Mar 2024	MS Urban and Regional Planning
Abhishek Tiwari	Oct 2023-Dec 2023	MS Computer Science
Fariha Afnan	Jan 2021-May 2021	ESE PhD
Graduate Teaching Assistants		Course
Somtochukwu Onuegbu	Aug 2024 – May 2025	CE 2633 Environmental Engineering
Sina Vedadi Moghadam	Mar 2023-May 2023	CE 4633 Water and Wastewater Treatment
Arash Jafarzadeh	Jan 2023-May 2023	CE 2633 Environmental Engineering
Arash Jafarzadeh	Jan 2022-May 2022	CE 2633 Environmental Engineering
Undergraduate Research Assistants		Affiliation
Dom Dorsa	May 2024-present	BS Civil Engineering UTSA
Jennifer Dominguez	May 2024-present	BS Civil Engineering UTSA
Divanhy Salazar	May 2024-present	BS Civil Engineering UTSA
Katie Whatley	Apr 2024-present	BS Civil Engineering UTSA
Nicolas Williams	Jan 2024-present	BS Chemical Engineering UTSA
Natalie Martinez	May 2024-Aug 2024	BS Civil Engineering UTSA

Alyssa Arcos	June 2022-August 2023	CIMA-LSAMP, BS Civil UTSA	
Stanley Ngo	Jan 2021-May 2023	BS Mechanical Engineering UTSA	
Grader		Course	
Alvin Jose James	Jan 2024-present	CE 2633 Environmental Engineering	
Committee Member			
Examinations		Exam	Degree
Haoming Qin	Sept 2024	Qualifying Exam	CE PhD
Aimee Steinbrecher	April 2023	Qualifying Exam	ESE PhD
Christina Kastely	Dec 2022	Qualifying Exam	ESE PhD
Felicia Ellis	April 2022	Qualifying Exam	ESE PhD
Arash Jafarzadeh	Sept 2021	Qualifying Exam	CE PhD
Sandra Montalbo	Mar 2021	Qualifying Exam	CE PhD
Thesis Committee		Title	Degree
Chinedu Okonkwo	Nov 2024	Data Privacy and Security in the Adoption of Wearable Internet of Things for Construction Safety and Health Monitoring	CE MS
Felicia Ellis	Apr 2024-present	Best Management Practice Maintenance Effect on Water Quality and Particle Size Removal Efficiency	ESE PhD
Sahar Koohfar	Mar 2024-Aug 2024	Leveraging Probe-Based Data to Enhance Long-Term Planning Models	CE PhD
Karmann Kessler	Jan 2024-present	Bioenergetic Modeling of Fish Species	ESE PhD
Aimee Steinbrecher	Jan 2024-present	Anthropogenic Impact on Stream Health	ESE PhD
Hazem Mahmoud	April 2022-present	Integrating Historical Declassified Imagery, National Aerial Photos and Modern Archive Data for Improving Andean Geodetic Glacier Mass Balance Computation Since the Mid-20th Century	ESE PhD
Fahmida Akter	Fall 2021	Ambient Air Quality Data Analysis for the City of San Antonio	MS CE
Arash Jafarzadeh	Fall 2022-Summer 2024	Evaluation of Stormwater Detention Basins and Swales in Edwards Aquifer Recharge Zone for the Removal of Micropollutants including Heavy Metals, PAHs, and Oil & Grease	CE PhD
Sandra Montalbo	Feb 2021-present	A Comprehensive Framework to Model, Assess and Enhance Operable Window Integration	CE PhD
Academic Advising			
Who	Date	Program	Hours

14 CE Undergraduates	Jan 2021 – present	CIVITAS advising	12
3 Incoming CE undergraduates	Aug 2022	Summer Bridge Program	3

*ESE = Environmental Science and Engineering; CE = Civil Engineering

Professional Development

Activity	Description	Dates	Hours
ADVANCE Women in Writing	Women in STEM Scholarly Writing Retreat and accountability groups that meet monthly and spent 48 hours in dedicated writing time	August 2024- May 2025	72
Faculty Success Alumni Program	Weekly accountability group meetings, daily writing progress check ins	August 2023- present	5
Faculty Success Program	Weekly accountability group meetings, daily writing progress check ins, weekly development activities	May -August 2023	36
Tenure Track Networking Club	Quarterly meetings via Teams with tips from tenured faculty at UTSA	Aug 2020 - present	10
New Faculty Workshops	Attended a series of webinars from Academic Innovation regarding available resources	Aug 2020 – May 2021	15
ACADEME workshop	Met with new engineering faculty from around the country in Alexandria, VA to exchange ideas and make connections	May 17-18, 2022	15
New Faculty Peer Mentor Group	Met weekly with other new faculty via Zoom to discuss insights and challenges of the new position	Aug 2020- May 2021	15

Professional Affiliations

Organization		Member Since
ASEE	American Society for Engineering Education	2025
AEESP	Association of Environmental Engineering and Science Professors	2022
ESWN	Earth Science Women’s Network	2015
TRB	Transportation Research Board	2019
United Way	United Way Emerging Leaders and Women United	2023
USAEE	US Association of Energy Economics	2017

Service Activities

Activity	Role	Dates	Hours
Department School of Civil and Environmental Engineering and Construction Management			
Recommendation Letters	Writer	Spring 2023-present	8
Mentorship Committee	Member	Spring 2022-Spring 2023	6
Summer Bridge Program	Lunch with Students	August 2023	1
Department Environmental Science and Engineering Program			
Committee of Graduate Studies (COGS) for the ESE PhD program	COGS member	Spring 2023-present	10
College Klesse College of Engineering and Integrated Design			
Awards committee	Member	Fall 2024 - present	20
Women of Klesse College Panel & Reception	Panelist	Mar 21, 2024	2
College Diversity and Inclusivity Committee	Member	Fall 2022-Spring 2023	5
New Faculty Academy	Panelist	Aug 10, 2022	2
Proposal review for Incorporating In-Demand Technical and Professional Skills into CEID's Curriculum	Peer Reviewer	2021	15
College Laptop Requirement Task Force	Departmental Liaison	Spring 2021	10
Lunch with prospective students	Faculty Representative	June 15, 2022	2
Engineering BBQ Cookoff	Judge	Oct 29, 2022	3
University University of Texas San Antonio			
New Faculty Academy	Panelist	Summer 2023	2
Commencement	Attendee	Spring 2023	4
Seed grant reviewer	Reviewer	Spring 2023	2
Commencement	Banner Marshall	Fall 2022	6
Commencement	Attendee	Fall 2021	4
INTRA seed grant reviewer for REDKE	Reviewer	Spring 2022	8
Professional			
Peer review of journal articles	Peer Reviewer	2020-present	54
Powerhouse Texas	Information Share	2023-present	2
Postdoctoral Program Improvement	Interviewee	August 2, 2021	1

Activity	Service Continued	Role	Dates	Hours
Air Quality, Climate and Energy session at the CMAS conference		Session Co-chair	Oct 2018	--