Strategies for Teaching, Assessment & Retention (STAR) Grant Program

The UTSA Academy of Distinguished Teaching Scholars (ADTS) and Academic Innovation sponsor the Strategies for Teaching, Assessment & Retention (STAR) grants program. The program advances projects that develop and implement innovative, creative, and/or eDective pedagogy, digital literacy, experiential learning, evidence-based research and practices, or the use of technology to enhance accessibility and undergraduate student success. Below, you'll find abstracts from past grant recipients.

Learn more about STAR Grants and apply on the UTSA Instructor Incentives website.

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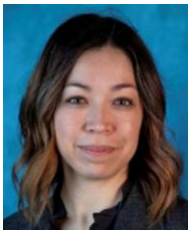
Academic Year 2025-2026

Team Teach Rowdy!



Tiffany Farias-Sokoloski, Ph.D.
Associate Professor of Instruction
UTSA College of Education and Human Development (COEHD)
Department of Interdisciplinary Learning and Teaching

***Abstract*:** Teacher shortage is a problem facing schools across the state of Texas and beyond which has prompted us to rethink, strengthen, and leverage our partnerships with local school districts to create a teacher residency pathway experience that provides quality, authentic experiences that support and retain teacher candidates. This project expands on this idea by considering the following question: How can we ensure that teacher candidates are provided with ongoing support and feedback that is consistent, aligned, and actionable? The project will focus on programmatic elements for one teacher residency cohort that include weekly teacher residency seminars, quarterly residency professional development (PD), quarterly co-teacher progress reflections and reports, and quarterly instructional rounds where a cohort of teacher residents will observe each other and analyze collected data, identify trends, and develop a goal. These four programmatic elements work together to amplify teacher residents' voices, foster a shared sense of ownership in their professional development over time, and build capacity so that their learnings and practices can be shared with other teacher residents program-wide.

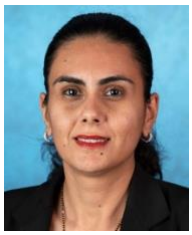
C.A.M.I.N.O.: Community-Embedded AI Media to Inspire New Outcomes in Bilingual/ESL Teacher Education

Kathryn Henderson, Ph.D.
Associate Professor
UTSA College of Education and Human Development (COEHD)
Department of Bicultural-Bilingual Studies

***Abstract*:** C.A.M.I.N.O. is an instructional innovation designed to transform bilingual and ESL teacher education by integrating community-rooted pedagogical knowledge with AI-supported media creation. The project addresses the need to bridge theory and research-based models with authentic classroom practice by developing a series of short instructional videos featuring expert bilingual/ESL teachers from UTSA's local partner schools, particularly SAISD 1882 campuses. These educators will model high-impact dual language and biliteracy strategies aligned with state standards and course objectives. In addition to observing these videos, teacher candidates will engage in hands-on digital literacy development using accessible tools such as Adobe Premiere

Pro, Adobe Express, and Descript. They will then create their own short instructional videos to synthesize learning, reflect on effective practices, and contribute to a peer-based professional learning archive. C.A.M.I.N.O. will directly impact over 180 students annually across BBL 4073 and ESL 3023, enhancing pedagogical skill, fostering reflective practice, and preparing candidates to lead innovation in linguistically diverse classrooms.

Building a Collaborative Learning Culture: Implementing Peer-Led Team Learning (PLTL) in Chemistry



Akanksha Matta, Ph.D.
Assistant Professor of Instruction
UTSA College of Sciences (COS)
Department of Chemistry

Abstract**:** General, Organic, and Biochemistry (GOB) courses like CHE 1004 are essential for students in allied health fields but are often associated with high DFW rates due to the challenging nature of the material and students' limited prior exposure to college-level chemistry. To address this, the proposed project integrates Peer-Led Team Learning (PLTL) into CHE 1004 starting Fall 2025. PLTL is an evidence-based, collaborative instructional strategy that supports active learning through peer-facilitated problem-solving sessions. Trained peer leaders will conduct, small-group sessions designed to reinforce key concepts, foster critical thinking, and build community among students. The goals are to enhance student comprehension, engagement, and retention while reducing DFW rates. Evaluation will involve comparing student performance and feedback from pre- and post-implementation semesters, as well as assessing the impact of participation on learning outcomes. Peer leader reflections and faculty observations will also inform ongoing improvements. The project will be disseminated through university workshops, STEM education conferences, and academic reports, with the aim of promoting broader adoption of PLTL across disciplines. This initiative aligns with UTSA's mission to enhance student success, equitable learning, and support for underprepared students in foundational STEM courses.

A Just-In-Time Chatbot for First-Year Composition

Christina Frasier, M.A.
Professor of Practice
UTSA University College
The Writing Program

***Abstract*:** This proposal aims to introduce a just-in-time chatbot for WRC 1013 courses at UTSA to enhance student engagement and improve writing skills through real-time, personalized feedback. Designed to assist with grammar, punctuation, style, and diction, the chatbot will support students during their revision process by providing immediate corrections and explanations. The primary goal is to foster just-in-time learning, helping students apply improvements as they work through drafts, reinforcing their understanding of key writing concepts and allowing for independent practice outside of class. The chatbot will be piloted in select WRC 1013 sections, with plans for future scalability to WRC 1023 courses and potentially other first-year composition courses at UTSA. Key features of the project include promoting accountability through chat record submissions, encouraging students to reflect on feedback and apply revisions meaningfully. The effectiveness of the chatbot will be evaluated using a combination of pre- and post-assessment surveys, writing performance data, and chatbot usage metrics. Throughout the project, privacy will be a key consideration, ensuring that all student data is handled securely and in compliance with relevant policies. The anticipated outcomes include improved writing performance, higher student engagement, and increased retention. The findings will be shared with the broader UTSA community, contributing to innovative, accessible writing instruction across disciplines.

Academic Year 2024-2025

Enhancing Visual Data Literacy through Generative AI in Technical Writing

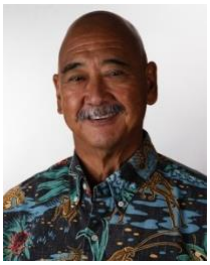
Sue Hum, Ph.D.
Professor
UTSA College of Liberal and Fine Arts (COLFA)
Department of English

Abstract: Recognizing the fundamental value of quantitative reasoning for undergraduates, Technical Writing (TW, ENG 2413) has taught quantitative literacy and writing since 2014. To further enhance the TW curriculum, I propose a new pedagogical unit that leverages generative artificial intelligence (GenAI) to strengthen students' visual data literacy. This project seeks to emphasize visual displays that illustrate the data and show valuable relationships, an essential element in students' quantitative literacy and communication toolkit. This intervention is designed to merge high-impact practices in visual design with the latest GenAI prompting techniques, with the goal of achieving three outcomes:

1. *Critical engagement with data:* Students will develop a critical comprehension of quantitative data, including the ability to interpret, analyze, and evaluate information, thus laying the groundwork for informed visual data display creation.
2. *Rhetorical design of visual data displays:* Students learn to distinguish among the rhetorical functions of diverse visual data displays, thus enabling them to make eDective design choices.
3. *Ethical data visualization:* Students learn to create eDective, accurate, and ethical visual data displays.

In brief, this project proposes to transform students' understanding of and ability to produce visual data displays, thus enriching their critical thinking, analytical, and communication skills, thereby contributing to their academic and professional preparedness.

Experiential Learning and Evidence-Based Research and Practice in Chemistry



Blain Mamiya, Ph.D.
Assistant Professor of Instruction
UTSA College of Sciences
Department of Chemistry

Abstract: Experiential Learning Theory (ELT) is developed from the work of those scholars that focused on experience holding the central role in the theories of learning and cognitive development. These scholars include John Dewey, William James, Jean Piaget, Kurt Lewin, Lev Vygotsky, Carl Rogers, Paulo Freire, Carl Jung, and Mary Parker Follet. Experiential Learning Theory is the basis for many of the recent pedagogical developments such as student-centered learning, inquiry-based learning, project-based learning, and active learning. The works of Jean Piaget and Lev Vygotsky led to the Constructivist Theory of Learning, which is the fundamental basis for experiential learning.

The Constructivism Theory of Learning is based on some well-defined principles developed in the early work of Piaget and Vygotsky. The paradigm for teaching and learning are:

- Human learning is constructed, learning is built on prior knowledge.
- Human learning is an active process, not a passive process.
- Human learners build their own understanding.
- Human learning is facilitated during social interaction.

Based on these paradigms for teaching and learning, the keys are the activities or learning experiences prepared by the faculty and meaningful assessment of each activity. Success is dependent on the student's completion of the learning experiences, and their interaction with fellow students (depending on the classroom setting). Each learning experience will range from a creative use of multiple chemistry concepts to create their own chemical periodic table, to the full-body experience of a scavenger hunt. Creating a periodic table or using unique measurements focuses on building concepts, not only on obtaining the correct answer. The assessments to evaluate the success of each learning experience will be developed by analyzing both qualitative (interview questions) and quantitative (pre- and post- assessment) data.

Engaging ENT 3123 (Innovation and Entrepreneurship) Course Modules

Andrea Marquez, Ph.D.
Assistant Professor
UTSA Alvarez College of Business
Department of Management

Abstract: Based on my own experiences as a first-generation college student, I have a passion for improving the accessibility of course materials and content. For my STARsponsored project, I will modify my ENT 3123 (Innovation & Entrepreneurship) course to drive a high-quality educational experience for my undergraduate students.

- First, I will integrate open educational resources (OER) into course modules to lower (or potentially eliminate) material costs.
- Second, I will create online modules using SoftChalk to support student accountability for asynchronous content.
- Finally, I will incorporate lecture videos into each online module, where I review main topics for a particular lesson in short, snappy videos to foster student engagement.

Modifying the asynchronous component of this course will not only drive student engagement with online content but also increase my bandwidth during in-person classes to embrace a flipped classroom. With asynchronous content that suDiciently prepares students for in-person sessions, I can use class time to facilitate experiential learning, including guest speakers, case discussions, and hands-on activities. As such, this project enables the improvement of asynchronous AND synchronous aspects of my students' educational experience. I aim to share project results as broadly as possible, including through internal and external conference participation, blog posts, and video testimonials.

AI in Biostatistics: a Project-based Approach

Kim Massaro, M.S.
Assistant Professor of Practice
Alvarez College of Business
Department of Management Science & Statistics

Abstract: Through the STAR Grant, students will experience real-world applications of data analysis in Biology through a project-based approach using technologies: AI, The R Program, and Adobe Portfolio. Students will be guided to use free AI tools to generate biological research questions, generate random data or collect a sample of data, and analyze the data using techniques and methods taught in class.

With the help of AI tools, students will learn to ask ChatGPT how to code their analysis using the (free) R Program and present their results through projects by creating a website using Adobe Portfolio. There will be measurable learning outcomes for the projects at the end of the semester and opportunities for formative feedback on each project as "check points" throughout so students can gain a better understanding of the process. A survey

will be designed to gather student feedback about the project-based approach to make further enhancements in future semesters.

Fall 2023

CS-CURE: Adapting and Scaling the Course-based Undergraduate Research Experience (CURE) Model for Computer Science at UTSA

Amanda Fernandez, Ph.D.
Assistant Professor College of Sciences
Department of Computer Science

Abstract: The proposed project is CS-CURE, a computer science course-based undergraduate research experience, implemented as a new CS course in the Spring 2024 semester. Aligned with UTSA's Strategic Plan for Classroom to Career (C2C), this course will focus on experiential learning, engaging undergraduate Computer Science majors in research while introducing the fundamentals of scientific research methods.

The goal of the project is to encourage lifelong learning & curiosity in our undergraduate students, and establish a mindset of extending topics beyond their coursework to their own interests. Whereas existing CUREs are designed for the class to collectively investigate a single research topic, the CS-CURE will focus on research fundamentals and empower students to research a subfield of interest, such as AI, cybersecurity, education, software engineering, data science, and other areas of computer science. With the support of their instructor and a graduate peer mentor, students will form "special interest groups" (SIGs), reflective of the ACM professional society's collaborative groups for technical communities. The course will be open to all CS majors, creating a pipeline for these nearly 2000 students into further research experiences and graduate study.

Developing a New Undergraduate Course: Artificial Intelligence & Society

Abraham Gibson, Ph.D.
Associate Professor, Assistant Chair
UTSA College of Liberal and Fine Arts
Department of History

Abstract: I will develop an undergraduate course, tentatively titled "Artificial Intelligence & Society," which will examine artificial intelligence from social, cultural, historical, ethical, legal,

and other humanistic perspectives. This course will appeal to students from every corner of campus. Students with an interest in data science, computer engineering, and artificial intelligence will receive humanistic training that will help them build a better future, while students interested in social justice, civic responsibility, and the creative arts will learn to engage with the digital tools that have transformed our world.

This course will provide up-to-the-minute updates on all the latest developments in artificial intelligence, helping students contextualize the technologies that are transforming modern life. I will oEer “Artificial Intelligence & Society” as an online, asynchronous, and modular course that can be scaled to accommodate growth. This course would ideally count toward several extant majors, including History and Medical Humanities, as well as a new major, Data and the Digital Humanities, which will start being oEered by the Interdisciplinary School for Engagement in the College of Liberal and Fine Arts in Fall 2024.

Spring 2023

B-Global - Inclusive and Engaging Writing Course

Manjit Kaur
Associate Professor of Practice
UTSA University College, The Writing Program

Abstract: B-Global: Inclusive and Engaging Writing Course is a proposal to add a topicaligned B-Global Freshman Writing Composition – I (WRC 1013) asynchronous course to the writing courses oDered at UTSA. The alarming fact is that our students know little to nothing about the diverse cultures, challenges, and opportunities surrounding the world.

This course will bring global awareness, social responsibilities, and cultural knowledge to the students. It will help them understand the connection and interdependency of the global community while developing an appreciation for diversity and unique diDerences. Our students will be left behind if they are not globally knowledgeable, and the WRC 1013 Freshman course is an excellent place to start. Each major project in this course will expose students to a diDerent approach to global events and cultures.

Students will use statistical measurements and research to understand behavior and the influence of global threats and opportunities. This course will teach students to manage personal biases and learn about global issues or cultures with a mind to understand, not judge.

Student Engagement Through Interactive Technology

Cynthia Roberts, M.S., and Matthew Schurmann, M.S.
UTSA College of Sciences
Department of Mathematics

Abstract: The overall goal of this project is to enhance student learning and the sense of belonging in their course. Students that are engaged with the material and feel connected with the content learn better and perform higher. We plan to enhance our courses using technology that incorporates active learning, peer interactions, and inclusive practices allowing students to navigate their journey through higher education while building

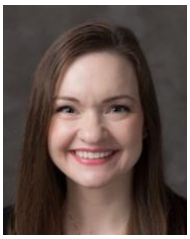
selfawareness and learning to advocate for their needs in the classroom and in the career field.

We will collaborate and identify the level of engagement based on the course materials. We will compare the results of College Algebra for STEM majors and Calculus for the Biosciences.

We will have students participate in surveys throughout the course to identify their understanding of the course content after completing lecture notes and guided reading. We will then implement a technology-based activity and survey the students' understanding of the course content. This will allow us to measure the effectiveness of active learning and engagement with the content. The surveys will include definition and conceptual questions. The goal is to see an increased understanding in the conceptual questions after a student directly interacts with the material.

Fall 2022

Experimental Learning through Digital Storytelling of Westside Community Families in the Title Search project



Jennifer Becker, Ph.D.
Associate Professor
UTSA College of Liberal and Fine Arts
Department of Communication

Abstract: If "home is where the heart is," then it is also the heart of the family or *el corazón de la familia*. Dr. Jennifer Becker's Spring 2023 COM 4813 *Theory and Practice of Social Interaction* capstone course will explore how relational communication concepts such as *familia* and *home* are especially meaningful to the Mexican-Americans who live in the Westside of San Antonio. Using inclusive pedagogy and experiential learning techniques, Dr. Becker will guide her students as they give voice to the stories of Westside families who have participated in the UTSA Title Search project. Students will interview Westside families who have had successful results in obtaining a clear title for their home about the memories, traditions, everyday activities, placemaking practices, and sense of familial and communal identity constructed within their homes. Students will use digital storytelling technologies to capture families' stories and range of emotions in the interviews, then create a public-facing website of edited video clips and written excerpts illustrating the overarching narratives from families' stories. As a token of gratitude, students will create photo memory books for the families they interview. The photo memory books will contain the transcribed interview, an image of the title of their home, photos taken during the interview process, and any photos of the family and home that each family would like included.

Course Development for ANT 3573: Digital Archaeology

Rebecca Bria
Assistant Professor,
UTSA College of Liberal and Fine Arts
Department of Anthropology

Abstract: STAR funding will provide support for Dr. Rebecca Bria (Anthropology) to enhance her new course "Digital Archaeology," where students will learn a suite of cutting-edge

digital and geospatial techniques for documenting, analyzing, and visualizing the material world and explore how to responsibly manage digital heritage. Funds will be used to enhance the course in three ways: 1) to develop course labs that integrate 3D editing skills (Blender) and virtual and augmented reality (VR/AR) into the digital workflows for archaeological research and publication that are already part of the class, such as digital mapping, GIS analysis, database creation and management, digital illustration, and 3D modeling; 2) to create class activities in which students develop and revise an ethics code for collaborating in digital heritage scholarship; and 3) to support the publication of the course's pedagogical approach and student experiences. The enhanced curriculum will teach UTSA students how to eDectively and ethically problem solve real-world and research problems by choosing the appropriate digital tool(s) from a broader and always growing digital toolbox. Moreover, the coursework will provide students with sophisticated skills in digital data creation and public engagement that employers and graduate school programs look for in applicants, both within and beyond the profession of archaeology.

Spring 2022

Collaborative Ethnographic Research Lab

Patrick Gallagher, Ph.D.
Assistant Professor
UTSA College of Liberal and Fine Arts
Department of Anthropology

Abstract: This project aims to enrich the Introduction to Cultural Anthropology course (ANT 2053) by implementing a Collaborative Auto-Ethnographic Research Lab. The course is a part of the University General Education (Core) Curriculum in the Social and Behavioral Sciences. The lab provides students with opportunities to engage in community-based research projects, fostering immersive learning experiences and enhancing professional preparedness. Through small group dynamics, students will develop individual research projects while benefiting from collective idea generation and knowledge sharing. By bridging theoretical knowledge with practical application, the lab cultivates essential skills in ethnographic research, writing, and communication, with broad relevance across professional fields. This pedagogical approach will promote inclusivity, foster a sense of community, and empower students to explore diverse cultural contexts and societal dynamics.

Early Intervention for Experiential Learning through an Exposure Research Experience

Judy Haschenburger, Ph.D.
Professor
UTSA College of Sciences
Deparment of Earth & Planetary Sciences

Abstract: The goal of this project is to develop a course-based research experience that targets incoming first year students and community college transfer students majoring in geosciences. Through the project, a common curriculum that probes the nature of geosciences research, its execution, dissemination, and ethics will be created with special attention to the challenges of a mix of students' preparedness to engage in research and the opportunities for peer learning. Additionally, an intentional recruitment plan to raise awareness with all eligible students will be developed as well as a research opportunity

map that matches level of coursework preparation to possible projects in faculty research labs. Over the grant period, key impacts on students include increased awareness of experiential learning opportunities and an invitation to join the geoscience community through the recruitment process, but longer term, it is expected to increase retention in the major and motivate more in-depth experiential learning for geosciences majors. The evaluation plan involves a formal review of the portfolio of course materials and surveys to access students' perceptions of a research experience to improve the course. Products will be disseminated on the departmental website and announced as resources through ADTS and AI.

Contact:

- Dr. Aaron Cassill, STAR Grant Co-Chair
- Dr. David Han, STAR Grant Co-Chairs

Learn More:

UTSA Academic Innovation: Academic Innovation at UTSA brings together experts in teaching, technology, and virtual learning to champion innovative and transformational practices that enhance the academic experience of our students and faculty.
https://provost.utsa.edu/academicinnovation/

UTSA Academy of Distinguished Teaching Scholars: The Academy of Distinguished Teaching Scholars was established in 2012 to honor and reward a select group of outstanding faculty who exemplify excellence in teaching; to foster a culture of exceptional teaching and learning practices at UTSA; and to create a collective of faculty advocates for teaching excellence who can serve as resources to their colleagues.
https://provost.utsa.edu/adts/

STAR Grants website:
https://provost.utsa.edu/academicinnovation/resources/stargrant.html.