



TEXAS A&M UNIVERSITY
Division of Research

TEXAS A&M UNIVERSITY RESEARCH COUNCIL

2023 Research Enterprise Highlights



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The University Research Council (URC) is an advisory body that provides advice and assistance to the Vice President for Research, on the development of research, research planning and research policy.

The URC representatives from across the campus have shared research highlights for 2022 – 2023. While much of their data precedes the newly released Texas A&M Research Enterprise Strategic Plan (May 2023), to assist in the data collection process we've framed much of their data into the foundational categories in the strategic plan, with the expectation that future annual snapshots using the same broad categories will help provide consistency in reporting. The categories are:

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

Environment for Innovation: Emphasis on Service

Environment for Innovation: Research Infrastructure

Dynamic Community: Strategic Research Themes, Other Themes

Communications Visibility

This sharing serves several purposes including cross-pollination of ideas and opportunities for best practices, as well as springboards for future planning.

We hope you will review and provide your feedback. Many thanks to the URC Deans for their continued efforts in advancing the Texas A&M research enterprise.

Cheers,

Jack Baldauf
Vice President for Research

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

- Have the oldest (if not the only) University (non-system) Research Development office (Research Enterprise and Outreach - formerly CERD). We also have a nationally recognized outreach office to promote collaboration among investigators and school districts.
- Have 4 mechanisms for internal funding to promote young faculty in research.
- Have established research interest groups and chalk talks, designed to bring interdisciplinary researchers at different academic levels together to explore research topics. (The newly founded Early Childhood Development Institute was born out of a Research Interest group,)
- We work closely with our MarCom director to promote outreach - podcasts, informational videos, etc. We also have a research newsletter on our REO website to highlight SEHD research news.
- We have the STAR mentoring program, which is designed to mentor young faculty as they matriculate towards tenure.
- We work with the Division of Research to coordinate trainings with young faculty and offer complementary trainings for specific needs within SEHD.
- The REO office has former research compliance officers serving as research development officer.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

- Research interest groups.
- Chalk Talks
- Routinely have leadership team meetings involving research, clinical and teaching faculty and SEHD and Central staff to keep everyone apprised of SEHD matters.

Environment for Innovation: Emphasis on Service

- Offer distinguished service awards for both faculty and staff.
- Hold MINT trainings for all research-interested faculty, not only within SEHD, but for other Colleges/Schools of Education across the TAMU system.

Environment for Innovation: Research Infrastructure

- School-based Research Enterprise and Outreach office. One outreach officer and 3 research development officers. This office also has a full time Administrative Assistant.

- Four distinct internal funding opportunities (competitive and peer-reviewed) to promote research and scholarship with an emphasis on junior faculty.
- Outreach has connections across the state of Texas to align research interests with stakeholders.

Dynamic Community: Strategic Research Themes, Other Themes

- Early literacy development and intelligent tutoring systems - US News and World Report states that the intelligent tutoring system for the text structure strategy (ITSS) technology invented at TAMU is the only reading program with research support in clinical efficacy trials.
- Bilingual and multicultural education addressing educational disparities - Research and interventions that seek to close the achievement gap between English learners and native English-language speaking classmates in Texas schools.
- Educational, leadership, policy and research and interventions - Massive Open Online Professional Informal Individual Learning (Project MOOPIL) supports micro-credentials via online learning for teachers, administrators, parents, and paraprofessionals.
- Human clinical research - Our faculty are at the forefront for human physiologic/metabolic clinical research at Texas A&M University. Both applied and basic, KNSM faculty are actively engaged in funded human research involving exercise and disuse, nutrition, cognition and learning, aging, cancer, and metabolic disease.
- Tactical Human Performance - devoted to the understanding of improving/maintaining human performance under challenging environmental/work conditions. Tactical human performance is designed to assist law enforcement agents, firefighters, military personnel, construction workers, etc. who face difficult environmental and/or stressful challenges.
- Although loosely aligned, the SEHD has a critical mass of expertise to assess the intellectual, physical, and emotional well-being of individuals across the lifespan, from the early childhood development stages (Institute for Early Childhood Development) to advanced aging (Center for Translational Research on Aging and Longevity), and everything in between. SEHD is poised to make this a high priority.

Communications Visibility

- SEHD research newsletter.
- Voices of Impact annual presentations
- Podcasts, webinars, and various Marcom spotlight features.

Texas Center for the Advancement of Literacy & Learning (TCALL)

Stakeholders regularly evaluate the performance of over 36 statewide AEL grantees, not including statewide community-based organizations, using metrics from Texas Workforce Commission's TEAMS databases to generate internal and statewide reports and recommendations based on over 1,538 face-to-face training responses and 601 virtual training responses within the last year alone.

Stakeholders meet with state partners every 2 weeks to review and understand state-wide content standards for implementation and evaluation.

Stakeholders organized 2 statewide conferences, were organizing partners for 3 statewide conferences, and had an organizational presence for 6 state or national level conferences resulting in over 14 conference presentations in the last year alone.

Goal: Stakeholders seek to 1) continue the evaluation of face-to-face and virtual trainings for all AEL grantees in Texas, 2) continue the biweekly meeting cadence with state partners, and 3) attend and deliver the same or more conferences and presentations

Mentorship

Stakeholders develop opportunities for Graduate Student Researchers to increase research skills related to study development, IRB submission, instrument development, conducting study elements, drafting reports and articles, and presentations, resulting in 2 IRB-approved studies and 3 statewide conference presentations in the last year alone.

Stakeholders support the development and delivery of the year-long statewide Leadership Excellence Academy to build capacity in future AEL program leaders and instructional professionals.

Goal: Stakeholders seek to continue to provide research mentorship via publication and presentation opportunities for Graduate Student Researchers.

Compliance

Stakeholders adhere to data protection guidance at system, state, and federal levels from data protections, CITI certifications, FERPA training, and state-mandated cyber-security training.

Stakeholders regularly attend a variety of regulatory trainings, from Human Subjects training to updates in the HURON system.

Goal: Stakeholders seek to improve research training compliance by increasing training and data storage protocols aligned with TAMU IT changes which are forthcoming.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

Organization

Stakeholders follow HROE hiring guidance to attract talent nationally and internationally, leading to additional talent in research and instructional development roles.

Goal: Stakeholders will continue to use an ethos of excellence, plurality, and wellbeing in supporting talent to increase innovation and retention.

Processes

Stakeholders use streamlined administrative processes such as LaserFiche to improve strategic planning processes across a host of system-wide stakeholders.

Wellness

Stakeholders are encouraged to participate in staff development days, including options for PD, wellness time, health activities, and community events.

Environment for Innovation: Emphasis on Service

Stakeholders enhanced efficient delivery of services towards the pursuit of research through the creation of streamlined SOPs for research processes, data collection, and report creation for internal and state partners.

Stakeholders have developed over 63 standard operating procedures (SOPS) for process improvement and efficiency across the system.

Stakeholders improved delivery of service in the pursuit of research through the adoption of digital evaluation methodology via new software.

Organization structure aligned to meet institutional and societal goals.

Environment for Innovation: Research Infrastructure

Stakeholders regularly identify opportunities to improve research infrastructure and delivery, leading to the internal investment in more robust data collection platforms such as Class Climate to evaluate over 36 AEL grantees resulting in over 1,538 face-to-face training responses and 601 virtual training responses within the last year alone.

Stakeholders identify and are approved to pursue learning of new software to improve research methodology and analysis.

Goal: Stakeholders seek to increase the usage of more robust evaluation platforms such as Class Climate by completing a full transition within the next year.

Dynamic Community: Strategic Research Themes, Other Themes

Community and Economic Resilience – Workforce and Future of Work

Stakeholders consistently author and deliver quarterly and annual reports to state-level partners in the Texas Workforce Commission on the theme of "Community, Culture, and Economic Resilience" with a focus on "Workforce and Future of Work" by frequently aligning reports to Texas state priorities outlined in the TWC & TWC AEL Strategic Plans, including overlaps with the TWIC System Strategic Plan resulting in over \$25 million in grant funding for TCALL since 2014.

Stakeholders lead, author, and present on statewide research on Texas A&M's interest area of "Community, Culture, and Economic Resilience" with a focus on "Workforce and Future of Work", with the most recent studies focusing on IRB-approved topics related to "Family Literacy and Civics Content Standard Implementation" and "Digital Literacy for 21st Century Skills Development". Stakeholders provided statewide professional development on topics related to adult education, workforce development, and instructional excellence aligned with state-level partner requirements for over 36 AEL grantees, creating and delivering over 104 face-to-face trainings and over 140 virtual/webinar trainings in the last year alone.

Goal: Stakeholders seek to continue to be at the forefront of legislative, policy, and strategic recommendations at the state and regional level on topics related to workforce development, adult education, lifelong learning, and the future of work.

Communications Visibility

Stakeholders regularly support the delivery of research and data in sub-themes related to "Workforce and Future of Work" at state, regional, and national conferences, including TALAE, COABE, AAACE, DLTI, Fall Institute, Literacy Texas, AERC, and more, resulting in over 14 conference presentations, the execution of 2 statewide conferences, and partnership opportunities for 3 statewide conferences in the past year alone.

Stakeholders regularly liaise with AEL grantees, including program leaders, PD coordinators, AEL instructors, and students, through newsletters, surveys, conferences, and business meetings, to develop baseline understanding of attitudes, beliefs, and experiences for applied research and

systemic improvements with highly positive average ratings of 4.64/5 on training environment; 4.67/5 on content; and 4.82/5 on trainers.

Stakeholders have won over \$25 million in grant funding for TCALL since 2014 from state and federal grants, with \$3.5 million being awarded in the last year alone of which \$2.5 million went to TCALL and \$1 million went to the DEPDC.

Goal: Stakeholders seek to increase conference, publication, and presentation presence with highly positive ratings and for the maintenance of our grant funding.

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

The Center for Urban School Partnerships (CUSP)

Overarching Goals:

1) Conduct Rigorous Research

All three measurable objectives were exceeded by the CUSP team. Eight large scale studies in urban schools were conducted with over 4000 teachers and 50,000 students.

2) Secure competitive external funding to support both research and outreach

12 proposals submitted, 10 funded, over 30 million dollars in grants awarded.

3) Disseminate evidence-based research results to schools and stakeholders through strategic outreach initiatives

- Annual dissemination conferences, regional locations
- MOOV 360 Online platform for school personnel
- Monthly webinars
- Teacher Tips
- Newsletters
- ACE podcasts for families

4) Establish strategic partnerships with local, regional, national, and international stakeholders

- International Dyslexia Association
- Texas Association for Literacy Educators
- Decoding Dyslexia
- International Literacy Association
- Texas Association for School Administrators
- 22 High Need School Districts (in Texas)

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

- Rigorous research on the Massively Open Online Virtual Platform (MOOV 10-million-dollar grant) delivered practice-based professional development to 5200 in-service and pre-service K-12 teachers across the world. Knowledge developed includes teacher content and pedagogical knowledge and impact on student learning outcomes for reading, writing, and science. Eight publications in prestigious journals and an International Literacy Association Shanahan Dissertation award for the knowledge reported by Hudson (2021).
- Mentorship of 28 pre-service teachers on the Clinic for Advanced Literacy Studies (CALs) tutoring over 500+ students in the Brazos County region. Over 36 master's candidates and 18 doctoral candidates supported by the MOOV grant and resources.
- Eight large scale randomized controlled research studies conducted with the support of six research compliance projects – MOOV (10 million dollars), We Write (5 million dollars), KATE (14.9 million dollars), ITSS (4 million dollars), SWELL (4 million dollars), ACE Literacy Podcast for families in English and Spanish (collaboration with the Sunrise Rotary Club).

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

- The ITSS High poverty project with the Knowledge Acquisition and Transformation (KAT) framework resulted in 100% pass rates for students at Keller Elementary School in the Brownsville Independent School District. These results have been replicated in other high poverty settings where children typically are at risk for failing to master the Texas STAAR test.
- Link for Principal Javier Garza's news story:
- <https://education.tamu.edu/text-structures-for-success-improving-test-scores-in-brownsville/>
- Link to Ms. Kim Suggs success after pandemic story:
<https://it.literacy.io/TeacherLibrary/Files/ViewPublicFile/51b25198-b14f-401e-b9b8-a0f686a3c2f8>
- The KAT framework has resulted in stellar results for special education students including those diagnosed with dyslexia, autism, and ADHD. Outstanding results include 100% pass rates for special education students in Keller and other schools.
- These results have been presented and nationally recognized by the International Dyslexia Association through four consecutive annual meetings.
- The SWELL project has resulted in outstanding results and resources extended from English to Spanish with over 4000 resources available to participating schools for literacy support for reading and writing in grades K-12.

Environment for Innovation: Emphasis on Service

- Through the SEED project we have created and sustained a massive infrastructure capable of supporting over a million concurrent users on the student software in English and Spanish. The same infrastructure supports over 6000 pre-service and in-service teachers with resources in English and Spanish for online and face-to-face instruction.
- The ACE project in collaboration with the Rotary International has produced and disseminated over 65 podcasts on every free platform to support and sustain family literacy. The podcasts are available in English and Spanish with soon to be included translation in Portuguese through a collaboration with the European Literacy Network.
- The CUSP resources are now delivered to the Boys and Girls Clubs of Brazos County and other community organizations that promote literacy.

Environment for Innovation: Research Infrastructure

- The artificial intelligence MOOV infrastructure hosts over 20 servers, a code base of resources to support 1200 subroutines, 2000 APIs, and 10 enterprise level databases, with 8000 rules engines for the student and teacher intelligent tutoring systems.
- The infrastructure also hosts the teacher resource library of 5000+ resources for classroom use in multiple platforms and K-12 grades.
- The research infrastructure hosts the newest technologies (e.g., Chat GPT) and other scoring systems for large-scale assessments and essays and student assignments.

Dynamic Community: Strategic Research Themes, Other Themes

- The design, development, testing, and refinement of artificial intelligence driven web-based intelligent tutoring systems for reading, writing, science, and social studies learning for K-12 students (e.g., monolingual, bilingual, special education) in English and Spanish.
- The application of intelligent tutoring systems for training pre- and in-service teachers for literacy, science, and social studies instruction Inclusion of families in supporting student literacy.
- Implementation science with AI driven support for changing school practices
- Evergreen support of Texas A&M University undergraduate and graduate students to engage in cutting edge research and transform the world.
- Community engagement through school-based practitioners supporting the TAMU CUSP mission as ambassadors for research and community outreach.

- Invigorating collaborations worldwide with world renowned experts in the fields and submission of over 20 grants and awarded over 30 million dollars in current grants.

Communications Visibility

- MOOV infrastructure hosts over 5000 dissemination items available to
- partnering schools.
- Literacy.io website disseminates all outreach.
- ACE Podcasts and social media outreach for all materials.

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

Department of Teaching, Learning and Culture (TLAC), Texas A&M University Education Research Center (ERC)

Research Compliance: The ERC has a designated person (Dr. Kayla Rollins) who works closely with the research compliance office to ensure that our researchers are all closely following Human Subjects Research guidelines and our research projects are developed and conducted with integrity. Dr. Rollins has an excellent relationship with our liaison in the research compliance office and meets with them on a regular basis as needed.

Research Integrity: ERC researchers hold themselves accountable for the integrity of research and evaluation projects undertaken by members of our team. In 2022-23, alone, the ERC worked with individuals from departments and entities across campus in a vast scope of content areas—including TAMU Health Science, Department of chemistry, TAMU Agrilife, and TAMU Department of Mathematics.

Early Career Mentorship: The ERC frequently includes PhD students and post- doctoral researchers in research and evaluation projects. In 2022-23, the ERC provided early career mentoring to Dr. Xuan Zou, first as a Graduate Assistant (before she graduated) and then as a Post-Doctoral Researcher.

Environment for Innovation: Emphasis on Service

Dr. Shaun Hutchins exemplifies the ERC's emphasis on service. Dr. Hutchins recently received a 3-year, elected appointment as the 2024 Program Chair/President Elect for the Southwest Educational Research Association (SERA), 2025 SERA President, and 2026 SERA Past President.

Communications Visibility

Identify processes for supporting internal delivery of impactful research stories and/or processes supporting external delivery of impactful research stories. Researchers from the ERC are frequent contributors to different organizations, such as the American Education Research Association (AERA), the Southwest Educational Research Association (SERA), the Consortium of State Organizations for Texas Teacher Education (CSOTTE), and the Carnegie Project on the Education Doctorate (CPED). Teams of ERC researchers disseminate research in high-impact journals, develop research briefs for clients and their districts, and distribute reports to external agencies.

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

Sydney and JL Huffines Institute for Sports Medicine and Human Performance

Education/Knowledge

Rebranded our podcast to "We Do the Heavy Lifting". This has been well received with over 10,000 listens. This podcast promotes knowledge of research to the public. Topics we host are relevant and current.

We began a new seminar series in conjunction with TAMU Athletics. We have hosted three scientists so far. All seminars were well attended. The seminar topics presented new and innovative research findings.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

We generated a new rubric for evaluation of our student travel grants to practice consistency in providing support for research presentation by students.

Environment for Innovation: Emphasis on Service

We have created two new steering groups this year to ensure we align with overall stakeholder/organizational goals. These steering groups are the 1) testing center steering group to support the services provided through our testing center and 2) tactical athletics, to ensure we meet organizational goals with an upcoming summit.

Dynamic Community: Strategic Research Themes, Other Themes

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Doctorate (CPED). Teams of ERC researchers disseminate research in high-impact journals, develop research briefs for clients and their districts, and distribute reports to external agencies.

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

Kinesiology & Sport Management/Center for Translational Research in Aging & Longevity

CTRAL actively produces peer-reviewed manuscripts with a variety of collaborators. CTRAL trains TAMU (under)graduate & MD students every semester. CTRAL hosted an international continuing education course on tracer methodologies sponsored by European Society for Clinical Nutrition and Metabolism (ESPEN). CTRAL has submitted a new invention discovery to TAMUS with a graduate student listed as a co-inventor. CTRAL maintains compliance with all TAMU offices responsible for oversight of human (including radiation safety), animal, and Biosafety Level 2 activities.

One of the primary goals of CTRAL is to provide hands-on, authentic, high-impact practices to training the next generation of (pre)clinical researchers during their studies at the University. All student researchers are immersed in an integrative, engaging, and interactive learning environment. Experiential learning is the model for training all students and staff in CTRAL as this is this active and stimulating learning strategy. Several of our students with clinical research data interest have presented their data at the TAMU student research week. In 2023, CTRAL undergraduate received 2nd place overall in their category. Several students indicated that the clinical and hands-on research experience at CTRAL (as part of KINE 685 and 491, or as volunteer) helped them with their acceptance into medical, dental, nursing, or physiotherapy school. Of note, one of our undergraduate students was awarded an intensive summer research fellowship in dietetics at the National Institute of Health and has since begun to pursue her PhD in Dietetics. Many of CTRAL's graduate students/scholars have obtained awards in the past years such as highest scoring international conference abstract (out of > 550 submitted abstracts), highest scoring abstract from all submissions. Out of the USA (n=2), international research scholar fellowships (n=6), conference travel grants based on conference abstract score and internal travel awards (n=4).

Education/Knowledge

CTRAL actively produces peer-reviewed manuscripts with a variety of collaborators. CTRAL trains TAMU (under)graduate & MD students every semester. CTRAL hosted an international continuing education course on tracer methodologies sponsored by European Society for Clinical Nutrition and Metabolism. CTRAL has submitted a new invention discovery to TAMUS with a graduate student listed as a co-inventor. CTRAL maintains compliance with all TAMU offices responsible for oversight of human (including radiation safety), animal, and Biosafety Level 2 activities.

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Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

CTRAL encourages collaborative and open communication and decision-making regarding science through a variety of large/small group meetings as well as dedicated one-on-one meetings. The goal of these meetings is to provide an opportunity for (under)graduate students, staff, and faculty to brainstorm and make advancements in science together. The group meetings focus on logistics regarding clinic/lab, and issues related to development of methods and statistics as we adjust our research goals, complete various analysis, and discover new knowledge within our research areas. Group meetings are also an opportunity for practice sessions for (inter)national and internal research presentations and to celebrate accomplishments such as successful completion of academic milestones and farewells at the end of internships. One-on-ones provide individualized feedback and identifying areas where additional support is needed.

CTRAL hosts visiting (inter)national students and scholars on a regular basis to provide immersive training in our techniques. Since 2019, CTRAL has hosted 15(inter)national students and scholars. Often the visitor's institution requires a professional internship for completion of terminal degrees or as sabbatical for ongoing professional development. Individuals are selected on an individual basis based on qualifications, background, and interests. Once a project is agreed upon, individuals are required to complete a variety of training prior to and immediately upon arrival like that of a University new hire. Individuals completing professional internship or sabbatical often have requirements from their home institution to participate in CTRAL research like our full-time staff.

Environment for Innovation: Research Infrastructure

CTRAL entered partnership with Primary Care and Rural Medicine to identify potential participants for clinical research through pre-screening of electronic medical records. Being housed in a shared facility, CTRAL maintains open communication and prompt reporting of issues relating to the integrity of the physical infrastructure.

Dynamic Community: Strategic Research Themes, Other Themes

During CTRAL's last evaluation, it was determined that "this Center's pivotal role in the Human Clinical Research Facility cannot be overstated; you and your hard-working research staff have made CTRAL the nexus for clinical human research on our campus, which also contributes to our university's goal of strengthening our NIH funding portfolio." Further in the evaluation, the external

evaluator was quoted as stating “CTRAL can address a central focus of NIH, by serving as the TAMU expert on moving translational animal studies to clinical trials in humans.”

CTRAL partners with faculty in Biomedical Engineering on National Institutes of Health funded research to advance emerging technologies and innovations in glucose sensing and personalized nutrition feedback.

CTRAL partners on research with Biomedical Engineering and Philips Research North America on the Department of Defense funded to optimize artificial intelligence, learning, and autonomy as related to health surveillance and combat-readiness for active-duty military. Once optimized, this technology can also be leveraged for public health and disease tracking.

CTRAL’s mission is to use techniques within our ongoing translational and clinical research on nutrition, exercise, and metabolism in relation to aging and the common diseases of our aging population.

Communications Visibility

CTRAL engages in community outreach as guest presenters at a variety of non-profit and local community-based organizations.

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

Kinesiology & Sport Management

KNSM continues to thrive in innovation. Several accomplishments in the past year illustrate this environment.

Grants with Specific Innovation focus include Advancing Discover to Market (ADM); NIH R21; DoD, NIH R01, NIH Directors’ New Innovator Award; Allen Foundation.

Environment for Innovation: Research Infrastructure

The KNSM department strongly supports an environment for innovation. This is accomplished through these main areas (above and beyond those provided from the university or school).

- Departmental internal seed grants. These grants are offered multiple times per year for up to \$50,000. They are aimed at individual researchers to seed innovative projects, and ones that will advance the mission.
- Departmental investment in new faculty. We have invested almost \$500,000/year in start-up funds for faculty.
- Constant investment in innovative equipment and facilities. For example, in Kinesiology, in addition to start-up funding, we have invested \$150,000 in grant funded new equipment in the ION lab in last 12 months, the department is investing \$25,000 in a Strex Cell system that will support multiple labs, and we are currently building an environmental chamber that will lead to innovations across the campus. In Sport management, we have made investments in labs such as The Sport Experience Management Lab, which boasts state-of-the-art biometric measurement tools, including EEG, eye-tracking, and GSR. This robust research infrastructure empowers interdisciplinary investigations into sport consumer behavior research. By providing access to advanced technologies, the lab facilitates comprehensive analyses and enhances our understanding of the complex dynamics of consumer experiences in the realm of sports.
- Constant stream of global thought leaders – seminars, lectures, visiting scholars.

Dynamic Community: Strategic Research Themes, Other Themes

KNSM supports two centers—the Center for Sport Management Research and Education, the Center for Translational Research in Aging and Longevity. KNSM supports one Institute—the Huffines Institute for Sports Medicine & Human Performance.

The KNSM graduate faculty on average publish 5.48 manuscripts/year and give an average of 5.92 invited talks per year. Over the past three years we have amassed \$15,040,894 in research funding, for an average of \$200,545 per faculty member per year.

Created coordinated plans for an environmental chamber. Developed concept for a Southern Heat Initiative to challenge standards of heat tolerance developed in Northern Climates. Beginning the establishment of a network of southern climate researchers to grow the knowledge of heat adaptability.

In partnership with the Center for Sport Management Research and Education, the Sport Experience Management Lab is actively engaged in consulting sport organizations such as the Texas A&M Athletic Department and the Texas Rangers. These collaborations extend beyond traditional academic boundaries, allowing us to contribute practical insights to enhance sport management practices. By initiating projects that incorporate data analytic methodologies, we are shaping innovative approaches to address challenges faced by the sport industry.

Developed multiple Paralympics committees including AggiesInvent-Parathlete to develop Paralympic Training Center at Texas A&M.

Developed multiple Tactical Athlete committees and programs to foster Tactical performance intellectual critical mass and develop major initiatives.

Collectively our graduate faculty hold 20 fellowships in 11 different international organizations.

Communications Visibility

We invested in a three-year contract toward a nation-wide video-podcast highlighting the research in our area, titled “On The Move”. <https://www.youtube.com/@knsmtamu12>

We invested seed funding for improvements in all our websites for the department, labs, centers, and institutes.

We have had three major research-based career awards earned in the last three years among our graduate faculty:

- Earle F. Zeigler Career Achievement Award. North American Society for Sport Management., 2019 (Dixon)
- Robert H. Hermann Memorial Award. American Society for Nutrition. 2022 (Engelen)
American Heart Association (AHA) CAREER Award, USA. 2022 (Lei)

KNSM Seed funding has contributed to development of multiple Paralympics committees including AggiesInvent-Parathlete to develop Paralympic Training Center at Texas A&M and development of multiple Tactical Athlete committees and programs to foster Tactical performance intellectual critical mass and develop major initiatives.

KSNM Seed grant funding has started a new project with the City of Richardson that will become a model for cities across Texas. Dr. Mingjung Kim’s project “Company sport as a game changer in employee performance and well-being.” (City of Richardson (The Richardson Corporate Challenge, <https://richardsoncorporatchallenge.com/>), is a 10-week Olympic style competition, 25 athletic and non-athletic events, 5 Divisions, 40+ companies & Positive Sport Organizational Behavior (PSOB) laboratory.

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

Center for Research and Development in Dual Language & Literacy (CRDLLA) and Education Leadership Research Center (ELRC)

Both centers have a strong culture of innovation and research infrastructure. CRDLLA has developed a TESOL certificated and the ELRC has developed a mentoring and coaching academy, a PD platform called Top-Class Education Professional Development, and over 1,500 CPE modules called MOOPILs for administrators, teacher leaders, para-professionals, and even parents.

The ELRC and CRDLLA are compliant in all research areas and have a robust system for record keeping and retention of documentation. Moreover, both centers have a strong history of developing graduate assistants to become post-docs, research specialists, research scientists, and program directors. Typically, when research staff leave the centers, they will move to a tenure track position at well-respected institutions in Texas.

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

Department of Educational Psychology (EPSY)

Generate high-impact research scholarship, conduct outreach and service, and cultivate community leaders addressing high-need areas in the state of Texas and in the U.S., particularly addressing the shortage of special education and bilingual education teachers and mental health professionals in schools. 2. Thrust areas include special education, bilingual education, school and counseling psychology, research methods and statistics, learning, design and technology and human development and family sciences. Center on Disability and Development (CDD); Center on Dual-Language and Literacy Acquisition (CRDLLA); Telebehavioral Care (TBC) Program; Counseling and Assessment Clinic; Neurobiological Lab for Learning and Development; Educational Research and Evaluation Laboratory (EREL); collaborations with new Early Childhood Institute. 3. Strong mar/comm presence in EPSY and SEHD.

1. Last year EPSY broke into the top 25 in the U.S. News and World report rankings of EPSY departments at #22, this year we moved up to #16, reflecting our standing in the field.
2. CRDLLA was recently awarded by the Office of English Language Acquisition (OELA), U.S. Department of Education, a new \$3 million federal grant to provide professional development for Texas PreK-12 teachers of English learner (EL) students.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

1. CDD, Texas Workforce Commission and the University of North Texas, secured a large grant from the U.S. Department of Education. The title of the grant is “Texas Beacons of Excellence”, with a total budget of \$12 million. It is a five-year project aimed to eliminate/reduce the number of people in jobs that pay subminimal wages.
2. Krystal Simmons (EPSY) is Co-PI on a 5-year \$2.57M award from the State of Texas. The team will bring a new Home Visiting program to Brazos County to serve 2-,3-,4-, & 5-year-olds for preschool readiness.
3. Hector Ramos elected President of the American Creativity Association (ACA). The mission of the ACA is to increase the awareness of the importance of creativity in society and to promote the development of personal and professional creativity in all segments of the society.

Environment for Innovation: Emphasis on Service

1. Board of Regents approves creation of Texas A&M Health Telehealth Institute, spearheaded by EPSY faculty member Carly McCord as the Executive Director of the Institute.
2. Four Office of Special Education Programs (OSEP) grants from the U.S. Department of Education were awarded to EPSY faculty, which collectively will fund 20 Ph.D. students in the department.
3. Jeffrey Liew elected to the Society for Research in Child Development’s Governing Council as a Member-at-Large.

Environment for Innovation: Research Infrastructure

1. New Counseling and Assessment Clinic launching this fall at the Stack. This will provide critical infrastructure for school and counseling psychology services to the community and research, as well as laboratory space for other EPSY entities that generate IDCs through grants and through contracts, including Dr. Zhe Wang's NSF-funded project on math anxiety.
2. Ongoing research at CRDLLA funded by the U.S. Department of Education. Provides research infrastructure for bilingual education students, faculty, and staff.
3. Texas A&M Health Telehealth Institute launching, a catalyst for mental health services for underserved Texans and related research.

Dynamic Community: Strategic Research Themes, Other Themes

1. SPED-Drs. Montague Co-PI on new grant from the Texas Council for Developmental Disabilities, promoting health equity: Establishing a comprehensive, bilingual training program for individuals with

developmental disabilities and their caregivers/parents for \$750,000/60 months. This could be moved up to another category.

2. BESL-other Lara grants
3. Dr. Wang's new NSF grant.

Communications Visibility

Dr. Ridley received the 2022 Outstanding Paper published in The Counseling Psychologist (TCP) in May, 2021 presented at the annual meeting of the American Psychological Association (APA). This was considered a Major Contribution, consisting of four articles and a rejoinder on the topic "Rethinking Multicultural Counseling Competence." Eight of Dr. Ridley's current and former students variously coauthored on the papers.

Dr. Liew elected APA Fellow and incoming editor of Early Education and Development. Leslie Simmons MarComm staff member handles all external communication of research stories throughout SEHD and on social media. Connected to college and university MarComm staff.

Dr. Gagne (Associate Department Head for Research and Faculty Development) communicates all awards and new funding to entire EPSY community via Listserv.

Research accomplishments recorded each year and communicated to EPSY and SEHD.

CRDLLA has a thriving social media page (@CRDLLATAMU) with connected TESOL page (@CRDLLATESOL).

ELRC has a thriving social media page (@ELRCTAMU) with connected mentoring and coaching page (MCATAMU). Between all ELRC and CRDLLA Facebook and Twitter pages, we have engaged with over 100,000 people in the last two years and all pages continue to grow monthly.

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

Center for Sport Management Research and Education (CSMRE)

Funding an internal project to inform the future of funding mechanisms in Sport for Development and Peace organizations. Facilitating faculty mentorship among affiliated faculty to support mid-career and tenure track faculty.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

Supported the feature of Title IX course on CSMRE website as it relates to the content of gender equity in educational sport contexts.

Environment for Innovation: Emphasis on Service

Engaging and establishing relationships with external industry partners including Euro League Basketball, Texas A&M Athletics, Shriner's Bowl Game, and International Olympic Committee, among others in various stages of cultivation.

Environment for Innovation: Research Infrastructure

Applying for NSF grants to generate databases for research purposes, supported purchase to access industry databases to leverage for research and teaching.

Dynamic Community: Strategic Research Themes, Other Themes

Major focus of research activities involves Sport for Development and Peace (2 projects), Sport and the Natural environment, and employee wellbeing.

Supported more socials among affiliated faculty within the CSMRE to facilitate better networking and potential collaborations. These socials also supported reorienting affiliated faculty with each other's research interests. Additionally, affiliated faculty in the CSMRE from sport management and turf management took part in a \$8.5 million USDA grant for crop sciences.

Communications Visibility

SEHD has assisted with highlighting research by affiliated faculty in the Center for Sport Management Research and Education. Additionally, research faculty wrote three articles highlighting their research through The Conversation.

Texas A&M Institute for Technology-Infused Learning (TITIL)

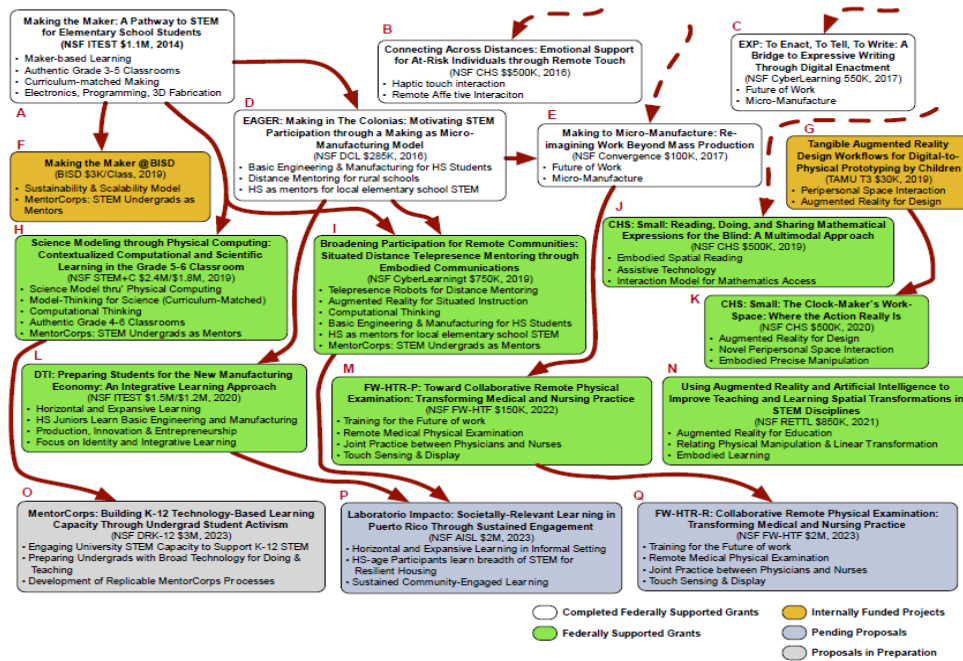


Figure 1 Granting/Research Map

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

TITIL is home to the flagship Texas A&M Embodied Interaction Laboratory (TEILab – F. Quek Director). The lab is home to research staff and students from Engineering, Education, Psychology, and Architecture. The lab operates as a ‘working apprenticeship’ that combines formal meetings with informal discussions. The weekly lab meeting is a time when the broad knowledge needed for technology, education, and learning for the projects is discussed. As problems arise, Dr. Quek would use these as teaching opportunities to provide both instruction and broad discussions. Such mentorship is invaluable because of the ‘thick knowledge’ nature of the inherently interdisciplinary research represented by TITIL’s projects exemplified in Figure 1.

TITIL also engages over 50 undergraduate students from across the TAMU campus as STEM Mentors in the MentorCorps (see Question 4.-2. (Emphasis on Service)-b. above). Our research provides weekly training for the Mentors to equip them with knowledge in electronics, programming, and 3D design, and an understanding of pedagogy for these knowledge threads to work as K-12 classroom Mentors. TITIL also engages a smaller set of undergraduates as ‘fabricators’ (see Question 4 -3. (Research Infrastructure) a. above). These fabricators are trained in electronics and 3D physical fabrication to manufacture learning kits for K-12 classrooms.

All researchers in TITIL are trained in responsible research and research integrity both through the mandatory University-provided courses on TrainTraq, and through hands-on experiences in the research.

TITIL has seven ongoing grants and five completed grants that were extant when the TITIL was approved by the Board of Regents in 2018. The active grants total approximately \$6.65M (\$5.85M TAMU share).

A critical component of TITIL’s success is in developing several nexuses of joint intellectual and conceptual development. The grants are not just individual successes, but represent trajectories of sustained development. The projects represent collaborations and joint visions and understandings built across academic units at Texas A&M University. Table 1 shows the range of collaborations we have developed through the course of the research. Demographically, TITIL collaborators represent 9 women and 17 men; Asian, Black, Hispanic, and white researchers; and an individual with disabilities (blind).

Table 1 Collaborator Table

Department	No. of Researchers	Grants/Projects
Architecture	1	N
Computer Science	2	K, N
Disability Services	1	J
Educational Psychology	2	N, O
Education/TLAC	5	A - Q
Education/HRD	1	C
Electrical & Computer Engineering	1	O
Engineering Technology & Industrial Distribution	2	D, I, L
Mathematics	1	N
Mechanical Engineering	3	G, J, M, Q
Industrial Systems Engineering	1	M, Q
Psychology	3	A, B, H, I, L, N, O, P, Q
Psychiatry	1	B
Visualization	2	A, B, C

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

The demographics of the TITIL research team represent student members that are roughly evenly balanced between men and women and represent a mix of ethnicities and nationalities. At the point of this writing (July 2023), it comprises 3 Blacks, 3 Chinese, 1 Indian, 1 of Puerto Rican origin, 3 Hispanic, and 6 white Caucasian. The diverse mix results from our recruitment on merit, and hence reflects the true mix of excellence at Texas A&M University.

A culture of teamwork and intellectual collaboration is inculcated into the laboratory, emphasizing the value that research is a collaborative social activity. The TEILab and TITIL director endeavored to maintain a balance and an environment where people work together and interact directly even whilst the society at large sacrificed emotional, mental, and physical wellbeing during the recent COVID-19 scare.

TITIL's research portfolio seeks to serve underrepresented communities (Projects A, C, D, F, H, I, L, O, P), rural and remote communities (Projects D, I, L, O, P), special populations with physical disabilities (Project B), at-risk communities (Projects B, M, Q), and remote health (Project M, Q). These projects combine an intersection of engineering, education, and psychological research that advance science and service simultaneously.

Environment for Innovation: Emphasis on Service

TITIL is predicated on the idea that research, teaching, service, and outreach need to be integrated such that they support each other. TITIL's activities engage service in six keyways:

Support for learning in authentic settings. Projects (A, C, D, F, H, I, L, M and O) are conducted in Grades 3, 4, 5, 6, and high school Career and Technical Education classes in partnering school districts. These projects are targeted at bringing technology learning experiences into real classrooms to provide content knowledge/competency and to instill/nurture STEM interests and identities in students. All projects focus on underserved and under resourced school communities. We have impacted hundreds of students in four school districts in the course of our work.

Development of curriculum and material for learning. The projects listed in (a) all require the development of curricula and technologies that can impact more schools and students than the ones we work with directly.

Development of MentorCorps. MentorCorps is a concept where we recruit and prepare TAMU STEM undergraduate students to support technology learning in K-12 classrooms. While MentorCorps was first conceived as a cost-effective way to intervene in a large number of K-12 classrooms

(undergraduate mentors are more cost effective than an equivalent number of graduate student assistants), the program has grown. We have involved approximately 100 TAMU students in this program thus far. We are currently developing a new grant proposal (O) where we seek to grow MentorCorps to serve school districts within driving distance from College Station.

Education in rural/remote communities: Projects D, I, L, & P are conducted in rural/remote school districts: Hearn ISD, Bruni HS (Webb CISD), and Hebbronville HS (Jim Hogg County ISD). Bruni and Hebbronville are in the underserved region near the Texas-Mexico border. We are developing new technologies for distance instruction using augmented telepresence robots and developing curricula as we engage the students in the classrooms. Proposal (P) that is in review seeks to engage high-school age children (some who have dropped out of failing schools) to learn STEM for resilient housing construction in Puerto Rico.

Learning Support for Individuals with blindness and severe low vision (IBSLV). Project (J) develops interactive technologies to enable IBSLV to read, do, and share mathematics. Our research partners with the Texas School for the Blind and Visually Impaired (TSVBI) in Austin and engages the IBSLV community within driving distance from College Station.

Other Broader Impacts. Beside the educational projects that work in authentic classrooms, all TITIL projects carry significant broader impacts. For example, Project (B) investigates social touch technologies for emotional support for at-risk communities; Project (C) develops technologies to help second language learners in expressive writing; Project (Q) develops technologies for remote medical examinations for remote communities and those with easy access to medical care.

Dynamic Community: Strategic Research Themes, Other Themes

TITIL combines an interdisciplinary interaction among engineering (Computer Engineering, Human-Computer Interaction), Education, and psychology research to address real societal needs (real problems rarely yield to single disciplinary solutions).

TITIL focuses on preparing students to live and work in the current and future technology-saturated world. They must become not just users of technology, but also be able to create with it. This challenge is greatest for students from low-income underrepresented populations. A key strategic research theme of TITIL is to apply a theoretical and pragmatic solutions that can be applied in authentic learning environments that serve such populations. Learning at both the lower grades (grades 3-6) – Projects A, C, F, H, O, and High School Career Technical Education – Projects D, I, L, and P – are addressed.

A second strategic theme is interactive systems for health and wellness. This research includes projects to address loneliness, stress, and anxiety for at-risk populations through social touch interaction (Project B), and remote medical physical examinations for rural and at-risk communities (Projects M, O).

A third research theme is support for learning for individuals with disabilities (Project J)

General basic interactive technologies research that serves as foundations for future pragmatic projects (e.g., Project G, I, K, N).

TITIL seeks collaborations with other members of the Texas A&M Research community to find new areas of research. Examples of success in such endeavors include Project K, N. The TITIL director has a strong track record in catalyzing and advising such project. There are currently 3 research collaborations that are being incubated in this way that may lead to concrete funding opportunities that bring tangible resources to sustain the research.

TITIL is investigating the creation of an academic certification program in conjunction with Proposal O that engages and prepares Texas A&M STEM undergraduates to support K-12 education.

TITIL is seeking to expand its research beyond the local community. Proposal (O) in preparation extends the research regionally to school student populations within driving distance of College Station, a pending proposal (P) extends learning to Puerto Rico, and ongoing work brings our research to rural and remote school districts in Texas (Projects D, I, L)

Communications Visibility

TITIL's research in authentic communities necessitates outreach and communication to State and regional organizations with influence on educational policies. In 2023, for example, the TITIL director gave presentations to the regional and State-level stakeholders in High School Career and Technical Education (CTE). TITIL continues to reach out to State and school district entities.

TITIL's research on technologies to support reading and literacy in Individuals with Blindness and Severe Low Vision has been featured in the National Science Foundation's Science Now series.

TITIL research has been featured in local news outlets like KBTX, the Battalion and the Eagle.

Environment for Innovation: Research Infrastructure

One of the goals of the Institute is to build infrastructure so that later projects can build on the material success of former ones. For this reason, TITIL maintains the following:

- Manufacturing space for prototyping designs and manufacture of physical materials for K-12 classrooms. The space features a laser cutter and a bank of 3D printers to produce physical prototypes. It includes a digitally controlled embroiderer and serger for the construction of fabric prototypes, and a suite of electronics fabrication tools for building electronics elements of our designs. Our large projects in authentic classrooms, especially, employ a team of ‘fabricators’ to construct custom education materials (Grade 5-6 grade science models) of our design. A major purpose of this facility is for undergraduate ‘fabricators’, whom we recruit and train, to manufacture physical computational learning kits for K-12 classroom use.
- A suite of 5 telepresence robots that we augment for distance education research. The robots have been used for a range of projects.
- Two Optitrack™ motion capture systems, one configured for full-body tracking, and one configured for tabletop tracking.
- A pair of high-end MotionX ‘reverse robot’ force-sensing-and-feedback systems for doing haptics-based interaction research. These are cross-calibrated and collocated with the tabletop Optitrack™ System.
- A suite of biometric sensor suite comprising 2 high-end (\$3,000 each) Empatica E4 wearable sensors and 4 PupilCore eye tracking systems capable of gaze direction and pupil dilation analysis.
- A set of 20 GoPro cameras and 25 high-resolution Zoom H2N audio recorders for classroom-level data collection.
- A Braille embosser for researcher with individuals with Blindness and Severe Low Vision.
- A collection of computers for research and data analysis.

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

- Responsible conduct of research in restructured required BIMS 102 Required Research Ethics

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

- Leadership role in IMSD diversity NIH T32

Environment for Innovation: Emphasis on Service

- Generating veterinarians with research experience to serve the state and world.
- Leveraging TAMU's only Teaching Hospital for translational clinical trials.

Environment for Innovation: Research Infrastructure

- Plan for Next-Generation Research-Intensive Small Animal Teaching Hospital
- Invested in Veterinary Medical Park, Translational Imaging Center and TIPS, and Core facilities.

Dynamic Community: Strategic Research Themes, Other Themes

- Toxicology
- Biomedical Genomics and Bioinformatics
- Infection and Immunity
- Physiology and Developmental Biology
- Diagnostics and Therapeutics
- Partnership expansion with Biomedical Engineering
- Veterinary Education Research and Outreach facility in Panhandle

Communications Visibility

- Trainee publication monthly blog

- Partner with Agrilife for amplification of research stories
- Veterinary Way monthly newsletter and quarterly Research Impacts for external stakeholders

SCHOOL OF PERFORMANCE, VISUALIZATION AND FINE ARTS (PVFA), AND SCHOOL OF ARCHITECTURE (SOA)



Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

In our first year, AY2022-2023, PVFA faculty produced work and contributions across a wide range of activities including publishing in top venues, exhibitions of artworks and designs, festivals, and performances across the globe.

Over the past five years PVFA faculty have contributed to attracting more than \$27.5M in funding over the last five years, with \$3.1M directly attributable to PVFA faculty (keeping in mind that only approximately 10%-15% of PVFA faculty are in fields traditionally aligned with federal funding agencies).

Ongoing initiatives include exploring and analyzing data to help identify patterns, clusters, connections, trends, relationships, opportunities, and other key insights within PVFA, across campus and beyond.

Arranging events to foster community building, such as organizing a (one-day) conference with notable keynote speakers and brief lightning talks from interested faculty about how their research aligns with and enhances the research priority.

Leveraging emerging technology, including Augmented and Virtual Reality, Robotics, haptics, machine learning, and artificial intelligence, and the wealth of knowledge and expertise among our existing faculty and neighboring institutions, agencies, and industries. Recruiting excellent faculty who are productive across a range of fields and have inclinations toward interdisciplinary collaboration.

PVFA is home to research units, including: The Institute for Applied Creativity. The IAC was paused in AY2022-2023 for re-structuring and is re-launching in AY2023-2024 under the directorship of Dr. Hwaryoung Seo. The directorship of Texas A&M Institute for Data Science, Dr. Ann McNamara. The directorship of the Data Visualization & Digital Twins, Dr. Jian Tao. The

Virtual Production Institute -to be initiated Sept. 1, 2023. Individual faculty: Bowen Loftin Interdisciplinary Professor, Dr. Ann McNamara Harold L. Adams '61 Interdisciplinary Professorship, Courtney Starrett ASCEND Research Leadership Fellow, Dr. Edgar Rojas Muñoz SEC Travel Grant awardee. Three faculty have published books this year. Glasscock Faculty Research Fellowship Glasscock Symposium and Small Conference Grant Awardee.

Using a2ru resources as a guide for engaging the arts on campus.

Contribute to the development of a comprehensive framework to demonstrate the value and impact of creative works, including but not limited to Academic Analytics.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

Three PVFA deans established an interdisciplinary grants program to foster new collaborations among faculty in teaching, research and creative works, and service projects. A significant opportunity exists to redefine the boundaries of research and creative endeavors, and the school's existing skills are poised to spearhead a transformation in what can be achieved.

In February 2023, PVFA hosted a highly successful Research and Creative Works Day where faculty engaged in research and creative works had an opportunity to share scholarly activities. Each faculty member presented work in a short presentation format ranging from musical performances to live collaborative theater to papers on urban soundscapes, data visualization, and computer graphics shape modeling. This internal interdisciplinary exposition is augmented by a monthly newsletter highlighting research and creative works achievements of faculty. This serves to motivate faculty to learn more about their colleagues' endeavors while also motivating them to share their own achievements.

Arranging events to foster community building, such as organizing a (one-day) conference with notable keynote speakers and brief lightning talks from interested faculty about how their research aligns with and enhances the research priority.

Environment for Innovation: Research Infrastructure

Current methods for measuring impact and evaluation at the university level, including the use of Academic Analytics, do not align with significant portions of the research and creative works in PVFA. This will be of particular importance as productivity-based budgeting emerges as a factor for distributing resources. Interdisciplinary research and creative endeavors require environments

that encourage spontaneous interactions, open discussions, and the exchange of ideas between individuals from diverse fields. There will be an ever-growing push to form academic departments as the size of the school grows, and it will be, therefore ever-more challenging to enable emergent and novel works within the confines of traditional disciplinary silos.

Coordinating shared use of research space with the School of Architecture and the School of Education and Human Development.

Studio space is a critical and often overlooked resource that holds immense value for faculty members. Providing dedicated studio space for visual and performing arts faculty is an expectation among our peers and aspirant peers. Research space for faculty labs will be critical with the new Ph.D. programs coming online. The current POR fits the needs for a portion of the expected faculty growth but not all. Concerns surrounding legal issues, the use of creative work, and university resources. Emerging technologies surrounding AI raised concerns and debates within the artistic community due to several potential ways in which it could be perceived as a threat to artists. As a startup, PVFA is relying heavily on many of its most productive full and Associate Professors for administrative roles.

Dynamic Community: Strategic Research Themes, Other Themes

PVFA is developing research and creative works initiatives associated the Texas A&M – Fort Worth campus. Initial efforts focus on collaborations involving the Virtual Production Institute, TEES, and the Texas A&M Institute of Data Science (TAMIDS). Funding to equip Virtual Production Institute facilities will be available 9/1/2023.

Seeking opportunities and forge connections now with the new Forth Worth campus, exploiting proximity to Bell Labs, Lockheed Martin, and others.

Contribute to the development of a comprehensive framework to demonstrate the value and impact of creative works, including but not limited to Academic Analytics.

Communications Visibility

PVFA has its own internal MARCOM team, which is growing. Highest Visibility through publications, awards, and community engagement through workshops, performances, and artist in residence.

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

- **Mentorship:** The School of Architecture (SOA) and its three Departments have implemented strong and meaningful mentoring programs for junior faculty, which included formal mentor-mentee arrangements, informal mentoring activities, and peer-mentoring/learning opportunities. Strong mentoring culture of the School is reflected in examples such as Dr. Walter Gillis Peacock, Professor of Landscape Architecture and Urban Planning (LAUP), receiving one of the three inaugural Outstanding Graduate & Professional Student Mentoring Faculty Awards by TAMU Graduate and Professional School, and Dr. Phil Lewis, Department Head of Construction Science (COSC), completing a semester-long mentoring culture program offered by the University.
- **Knowledge/Education:** The Department of Energy and National Renewable Energy Laboratory selected the 165-member Solar Texas competition team led by Dr. Zofia Rybkowski (COSC), Dr. Gregory Luhan (Department of Architecture, ARCH), and Prof. Filza Walters (College of Engineering – Department of Mechanical Engineering) for its Solar Decathlon 2023 Build Competition. Solar Texas was selected out of 194 teams worldwide to receive a \$50,000 grant to design and build a net-zero, LEED (Leadership in Energy and Environmental Design) for Homes Platinum house for the Brazos County Habitat for Humanity Chapter. The project finished 4th in Energy and 11th overall and received the Director's Award.
- **Knowledge/Education:** Dr. Charlie Culp (Department of Architecture) Invented a non-refrigerant-based air conditioner (7 US Patents and 20 International Patents). The working prototypes show that this molecular membrane air conditioner can double the efficiency and are currently being considered by two major AC manufacturers. This innovation is well positioned to disrupt and replace existing refrigerant technology over the next 20 to 30 years, bringing significant impacts to the worldwide AC market (\$200 billion annually with a 6-10% growth rate). This is an example of exemplary innovations that support knowledge creation, student learning, and the public at large.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

- **Organization:** The School of Architecture hired eight new-tenure track faculty members from diverse sociocultural, academic, and professional backgrounds, expanding the School's capabilities to support diverse, impactful, and interdisciplinary research.

- **Organization:** Efforts to promote interdisciplinary and diverse research in the pursuit of inclusive knowledge are recognized by multiple relevant SOA faculty awards including the 2022 Texas Forestry Association Communicator of the Year by Prof. James Michael Tate (ARCH), the School of Architecture's 2022 Thomas Regan Interdisciplinary Award by Prof. James Michael Tate (ARCH), and the 2023 IDEC Media Award for the Global Studio Initiative by Dr. Gregory Luhan (ARCH), and the \$13M National Institute of Environmental Health Sciences Superfund Grant (#P42ES027704-01) that involves Dr. Galen Newman (LAUP) leading its Community Engagement Core. The Superfund Grant works with marginalized and under-resourced communities (mostly of color) to develop mitigation strategies for flooding and contamination issues in fenceline neighborhoods.
- **Wellness:** Encouraging a healthy work life balance is incorporated within the SOA Strategic Plan. The School offered multiple programs/activities that provided a break in the school day for its students, faculty, and staff to enjoy playful events, free food, and fellowship with peers and colleagues. The director of TAMU's Living Well was also invited to speak with faculty in each department (during the Departmental faculty meetings) to inform faculty of all wellness opportunities available on campus.

Environment for Innovation: Emphasis on Service

- SOA is in the process of soliciting stakeholder feedback on the specific challenges and strategies needed to improve its research ecosystem and to tailor it to better support the unique needs of our School with a wide range of diverse scholarships. Based on the stakeholder feedback and lessons from the best practice examples, action plans will be developed for implementation in the 2023-24 AY.

Environment for Innovation: Research Infrastructure

- **Physical Facilities:** SOA has made significant efforts to enhance the physical space and facilities to support research. For example, the south side 1st floor Coke Building has been dedicated as a research hub for the Construction Science Department, providing office, conference, desk, and research experiment space, with an electrical upgrade and new furniture. The center section of the 1st floor Coke Building has also been set aside for research involving simulation and lab experiments. The 2nd floor of Langford Building B is tentatively allocated for GeoSAT (Center for Geospatial Sciences, Applications, and Technology) recently established by the Texas A&M Board of Regents.
- **Information Technology:** Technology Services in SOA as a newly unified team are making great strides in improving the support and security of researchers in the School. Relying on the

input from researchers, several initiatives have been implemented. Examples include (1) a multi-million-dollar network improvement project, which is part of the University wide Next Generation Aggie Network project, to ensure a sturdy and reliable network and to enable researchers to accelerate their work as they seek new discoveries and scientific breakthroughs; (2) a collaborative project to build a new and robust storage and backup solution. The SOA team is working with stakeholders to identify the specific needs and optimal solutions to best serve their storage requirements, while reducing the overall cost to the individual researchers; and (3) an IT personnel on standby 24 hours a day to provide prompt and timely services to researchers and others.

- **Internal Funding Investments:** SOA shares IDC returns with our interdisciplinary research centers. The School is on the path to making significant investments from IDC to support innovative, high-impact, and interdisciplinary research aligning with the School's and the University's Strategic Plan, after completing the stakeholder surveys in fall of 2023.

Dynamic Community: Strategic Research Themes, Other Themes

- **Emerging Technologies and Innovations:** Dr. Wei Yan (ARCH) received a US utility patent for his Augmented Reality (AR) technology by the United States Patent and Trademark Office. Dr. Charlie Culp (ARCH) invented a non-refrigerant-based air conditioner resulting in 7 US patents and 20 international patents.
- **Health and Quality of Life:** SOA is renowned for its research on health, hazard, and resilience, especially focusing on the roles of the built, natural, social and technology environment. One recent example is by Dr. Dongying Li (LAUP) who led an interdisciplinary team including Drs. Robert Brown and Chanam Lee from LAUP and Dr. Jay Maddock from the School of Public Health to receive a 5-year, \$2.7-million grant from the National Institutes of Health (National Institute on Minority Health and Health Disparities) to address heat-related health risks among low-income older adults and to examine the potential roles of neighborhood green infrastructure to moderate the adverse effect of heat on health and wellbeing.
- **Community and Economic Resilience, Sustainability and Environment:** SOA faculty led by Dr. Michelle Meyer (TAMU PI) and her team of TAMU Co-PIs including Dr. Galen Newman, Jamie Masterson, Dr. Nathanael Rosenheim, and Dr. John Cooper received a \$17-million (\$2.3-million for TAMU) grant from the US Department of Energy, titled "Southeast Texas Urban IFL: Equitable solutions for communities caught between floods and air pollution." This is part of a larger 20+ member collaboration led by Dr. Paola Passalacqua from the University of Texas at Austin. Another relevant effort is a US Department of Energy (DOE) award of \$3.7-million to

develop 3D-printed prototypes for resilient buildings using hempcrete, which is led by Dr. Petros Sideris (Department of Civil and Environmental Engineering) as the PI and joined by Drs. Wei Yan (ARCH) and Manish Dixit (COSC) from the School of Architecture as two of the Co-PIs.

- COSC has received an NSF REU Site grant (for AY 2023-26) to offer undergraduate students summer research experience and promote undergraduate students to pursue graduate degrees to further increase SOA's research capacity. SOA also offered a grantsmanship workshop offered by Dr. Walt Peacock (LAUP) who served as an NSF officer. SOA will continue to offer similar workshops on a regular basis, involving major external funders (e.g. NIH and NSF).
- SOA is proposing an innovative partnership to create a world class digital twin of the A&M campus that can be both a resource for stakeholders with a "where" question as well as a research platform for deliberating the "what" question, alongside A&M Office of Information Technology and the Office of Facilities, Analytics, and Mapping.
- ARCH offered an integrated design studio (led by Profs. Michael O'Brien, Matthew Faulkner and Andrew Hawkins) to propose a series of potential design solutions for the Aplin School, engaging over 80 students through a creative process across multiple spatial scales from master planning to room design. The students designed the structural system with faculty and professional structural engineers and designed the mechanical, electrical, plumbing, fire protection, and daylighting systems with industry experts and faculty.

Communications Visibility

- The School has launched a podcast series titled "FutureBuilt" led by its Marketing and Communications team. Two episodes have been published so far, generating about 5,500 views in total in just 3 weeks.
- SOA offers public lecture series to disseminate its impactful research and creative scholarships. For example, the 2023 Rowlett Lecture was held on April 19, 2023 at Annenberg Presidential Center (Publication forthcoming) with a theme of "Synthesis + Performance + Intention | Innovation." The Architecture for Health lecture series continues every year with keynote speakers from diverse and professional sectors, with the recordings being made available via PBS (pbs.org).
- Research translation and engagement research are among the key strengths of SOA scholarships, aligning with its strong professional programs. Examples include presentations, trainings, workshops, testimonials, webinars, and research publications in diverse and accessible outlets. Examples include an article written by LAUP faculty, Dr. Ivis Garcia, about Maui Wildfires

in The Conversations) and a Time Magazine interview article of Dr. Robert Brown (LAUP) featuring his research about how increasing tree populations in urban areas may reduce heat-related deaths.

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

- The Mays Business School's accreditation was renewed by the Association to Advance Collegiate Schools of Business (AACSB) in 2023. This process occurs every 5 years. This accreditation "AACSB accreditation is known, worldwide, as the longest-standing, most recognized form of specialized accreditation that an institution and its business programs can earn."
- Several online programs have been launched or are in the works (most notably the recent Flex Online programs).
- Several of our departments were recognized for their research productivity in a variety of research rankings. Our research also factors into a number of the undergraduate and graduate business school rankings.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

- The Mays Business School had a successful faculty recruiting year in 2022-2023, and the school is adding several growth lines as the school continues to expand over the next 3 to 5 years.
- Over the past year, the school has worked to centralize several key staff positions that are partly in place to support research efforts.
- Mays has recently established new and revised existing research awards to highlight and celebrate the scholarly achievements of its faculty members. These new awards will recognize professors who have made significant contributions through their academic research and published work. The awards recognize professors who have produced impactful scholarship that advances their field. This serves to motivate and encourage continued high-quality research. By celebrating faculty research achievements, the awards draw attention to the innovative work being done at the school. This can enhance the school's overall reputation in the academic community. Establishing such awards demonstrates that the school values research and scholarship in addition to teaching.

Environment for Innovation: Emphasis on Service

- The Mays Business School hosted its annual Women’s Leadership Initiative, which “was created as a vehicle to boost the number of women in leadership positions and demonstrate our commitment to developing women as transformational leaders.”

Environment for Innovation: Research Infrastructure

- In October 2022, the Mays Business School held a groundbreaking ceremony for a new academic building. This new facility was later named the Wayne Roberts '85 Building and will be part of the Mays Business Education Complex, slated for completion by spring 2025. As part of these efforts, the Wehner Building is also currently going through updates and maintenance.
- With his appointment in February 2023, Dean Nate Sharp reestablished the Associate Dean for Research and Scholarship position at Mays to focus on the school’s research efforts as part of the Research Infrastructure.
- Mays Business School has recently updated its summer research funding policy to place greater emphasis on faculty research productivity. The revised policy makes several changes to better encourage and support ongoing research activities during the summer months. The impetus behind these policy changes is to foster a stronger research culture at Mays Business School. The new guidelines aim to incentivize high-impact research that will increase the visibility and prestige of the school’s scholarship. This is seen as essential to achieving the school’s vision of being recognized as a leading business school. By investing more in supporting faculty summer research initiatives, the policy aims to facilitate the ability of professors to be continuously productive in research and to make meaningful contributions to their fields. This emphasis on research is intended to foster an environment that will enhance the overall scholarly reputation and standing of Mays Business School.

Dynamic Community: Strategic Research Themes, Other Themes

- With our new Dean in place, the school will be revisiting and potentially revising these research grand challenges.
- The research occurring at Mays is aligned with several strategic research sub-themes provided by the Division of Research. These include 1) Human Development and Social Dynamics, 2) Workforce and Future of Work, 3) Artificial Intelligence, Learning, and Autonomy, 4) Data, Visualization, and Information Technologies, 5) Cybersecurity, 6) Climate Resilience and Mitigation, 7) Energy Transition and Clean Energy, and 8) Food-Energy-Water Nexus.

Communications Visibility

- In April 2023, the school introduced a new communication platform, a Monthly research newsletter, “Mays Monthly.”
- Advanced talks to launch a new research podcast focused on the research efforts at Mays.
- The Mays’ MarCom team is doing a redesign of the school’s website. Part of the redesign is on better communicating research and scholarship at Mays.

HEALTH : SCHOOL OF MEDICINE (SoM)



Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

- MPIM developed new mentored training grant program for graduate and post-doctoral fellows funded through the Cain Endowed Chair in Infectious Diseases.
- NExT dept is focused on active mentorship of early career faculty through a 2-person mentor team as well as postdoctoral trainees. Through these efforts post doc trainees have been successful in acquiring awards from the NIH (F32) Alzheimer’s Association, American Heart Association and DoD.
- Office of Research supports a Grant Advisory Committee program providing 3 mentors to work with faculty applying for NIH awards. Mentors are rewarded for successful mentee applications.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

- Dr. Karienn de Souza (NEXT)) is spearheading the School of Medicine’s participation in the Annual Alzheimer’s Memory walk. This year again the School of Medicine is the principal sponsor of the walk.
- The School of Medicine’s Research Awards:
 - Faculty Research Excellence Award recognizes an investigator’s accomplishments and his/her standing in the national and international scientific community. An awardee’s research must have provided novel insights into important biological processes and/or a better understanding of diseases that can lead to the improvement of human health and well-being. One Senior and one Junior Investigator award may be presented each year. The award consists of a School of Medicine plaque and a cash price of \$3,000.

- Senior Investigator: an investigator at the rank of associate or full professor must have completed five full years of service in the School of Medicine. Once an individual receives an award, they are ineligible to receive another award for a 10-year period.
- Junior Investigator: an investigator must have completed three full years of service in the School of Medicine. Investigators must be at the rank of assistant professor or recently promoted to associate professor.

Environment for Innovation: Emphasis on Service

- Establishment of a Fogarty Center - US team of expert clinicians/researchers from leading US Universities, led by Dr. Liberzon and his TAMU team (PSYC), train military, governmental and NGO sector Ukrainian psychiatrists, psychologists, and researchers, to provide urgently needed treatment of psychological trauma/PTSD, and to examine the adoption, implementation and the effects of this treatment in Ukraine.
- Institute for Pharmacology and Neurotherapeutics is administratively housed in NEXT, led by Dr. Samba Reddy. The IPN has established a vigorous seminar series and submitted a training grant to support postdoctoral students.
- The Texas A&M School of Medicine's Summer Research Program (SRP) continues to attract the top students from the best colleges and universities across the country. This year we had 27 participants who completed the 10-week program and 2 Air Force Academy Cadets who participated for 5 weeks. These students were selected from a large pool of applicants based on their research experience, desire to attend graduate/medical school, grades, and recommendations. There were weekly sessions dedicated to professional development, networking, and improving communication skills. The program concluded with the final week consisting of oral presentations by each participant and a poster presentation on the final day attended by hundreds of faculty, staff, and students. The day also included a talk by keynote speaker Dr. Scott Wieters and presentation of certificates and three Dean's Awards for the best poster presentations as judged by faculty. We look forward to next year which will be the 14th year of this successful program.

Environment for Innovation: Research Infrastructure

- Establishment and expansion of state-of-the-art microscopy centers available to TAMU and as well as national collaborators. These labs complement the TAMU Microscopy and Imaging Center.
- Medical Physiology (PHYS) through Dr. Andreea Trache supports the Integrated Microscopy and Imaging Laboratory (IMIL) which has expanded its instrumentation with novel imaging of live cells and animals.

- CBGN has recently established a new center (Joint Microscopy Laboratory, JML) focused on single molecule analysis. A new Luminosa for imaging analysis forms the anchor for this Lab. Dr. Sigfried Musser has applied for a second instrument of higher resolution that will be one of only 5 in North America, if secured.

Dynamic Community: Strategic Research Themes, Other Themes

- Neurotherapeutics: TBI, PTSD and psychological injury
 - The Neuro-Gut-Immune-Axis group, established by the NExT dept, seeks to understand the role of gut metabolites and microbiome in the context of neural injury including stroke, TBI and Spinal cord injury. This effort is supported by donor funds.
 - NIH award to Adam Case (PSYC and PHYS) Neuroimmune dynamics involved in the pathogenesis of hypertension after psychological trauma
 - STRONG STAR and VA/DOD funded Consortium led by Keith Young to Alleviate PTSD (CAP) - Genetic and Epigenetic Alterations as Biomarkers for PTSD
- Human Genetic and epigenetic changes with Disease:
 - The Watson and Patrick labs (MPIM), along with collaborators in the Karpac (CBGN) and West labs (MPIM), published a paper in Cell, describing the common human polymorphism LRRK2 G2019S, which has been repeatedly implicated in Parkinson's disease, chronic inflammatory diseases, susceptibility to infection, and cancer.
 - Genome-wide association studies of anxiety disorders, a new NIH award to John Hettema (PSYC).
 - New NIH award to Shaunna Clark (PSYC) studies DNA methylation as a key biological pathway underlying the association between neighborhood disadvantage and youth antisocial behaviors (ASB).
- Regenerative Medicine (CBGN) Dr. Ashok Shetty revealed the utility of extracellular vesicles (ECV) derived from mesenchymal STEM cells in treating traumatic brain injury through nasal delivery: A single intranasal dose of human mesenchymal stem cell-derived extracellular vesicles after traumatic brain injury eases neurogenesis decline, synapse loss, and BDNF-ERK-CREB signaling May 2023 Frontiers in Molecular Neuroscience
- Discovered a new therapeutic angle to restore pancreatic beta-cell function in Type 2 diabetes (Nat Comm 14:4250, 2023) CBGN.
- Elucidated the link between cholesterol, cell membrane dynamics, and oncogenic APC underlying colorectal cancer that provides support for diet-mediated prevention (Nat Comm 14:4342, 2023) CBGN.

Communications Visibility

- Office of the Associate Dean for Research has created a nexus to communicate research accomplishments through a panel of graduate and postdoctoral researchers that produce news stories, working with the faculty. The Office of Research is notified of publications and other research accomplishments via an online form. Then stories are disseminated to one of the team members to write a first draft. Texas A&M Health's and the School of Medicine's communications staff are brought in for editing style and content. Stories are published in Texas A&M Health's Vital Record and then pushed to other Texas A&M and media outlets for distribution.

HEALTH: SCHOOL OF NURSING (SoN)



Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

- The Program of Excellence for Mothers Children and Families supports student research experiences to develop a depth of understanding on the disparities related to maternal health and the social and health impact on families and communities. During the 2022-2023 year approximately 21 students were funded by Texas Health and Human Services for their work on maternal child interventions aligned with Texas legislative priorities. Overall, SoN sponsored projects funded 73 undergraduate and graduate research work during 2022-2023.
- The Center of Excellence in Forensic Nursing offered 5 Sexual Assault Nurse Examiner Trainings and continuing education courses as an accredited provider of nursing continuing professional development for the state and nation's nursing workforce. The courses include Adult Sexual Assault Simulation, Texas SANE Forensic Education Program: Adult and Adolescent, Texas SANE Forensic Education Program: Pediatrics, Well Child SANE Simulation, Strangulation Assessment Simulation Bootcamp.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

- One SoN faculty member was nominated for and accepted into TAMU's ASCEND Research Leadership Fellowship.

- SoN submitted a grant named Community Hands Advancing Maternal Health Promotion (CHAMPion), to HRSA. This application will support research opportunities as part of the Maternal Health Research Collaborative for Minority-Serving Institutions.

Environment for Innovation: Emphasis on Service

- TXAN Mobile CAREs which is school-based model that uses a mobile clinic (RV) to increase access points and access to care by delivering best practices in primary, behavioral and dental care to 6 rural school districts in Texas.
- RCORP grants funded through HRSA to the SoN include 3 project directors which are nursing scientists. Project collaborators from TAMU include SoM, SPH, SoD, Telebehavioral Health and TAM DeTar Family Medicine Residency. These grants also engage the rural areas of the Texas Golden Crescent (13 counties) and 6 partnerships with recovery clinics (2), regional and county hospitals (3) and a health system (1).
- During 2022-2023, SoN led and engaged 10 of our faculty in a collaborative, interdisciplinary research team to develop Rural Healthy People 2030. This publication focuses on 20 different chapters and their respective rural health priority. The scholarly output is interdisciplinary in that faculty from SoM, SPH, SEHD, COALS and SoA also collaboratively authored chapters in publication.

Environment for Innovation: Research Infrastructure

- We are building interdisciplinary research teams bringing together multidisciplinary researchers, for example through our funded simulation grants, we have partnerships with TCAT, SPH, Digital Health [HSC] & VizLab to identify the gaps and advance emerging health technologies and innovations.
- SoN has secured internal funds to support the research enterprise through HSC seedling grants (advancing emerging technologies and innovations) designed to advance discoveries for nursing science. SoN has secured internal funds to support interdisciplinary research collaborations through a PRISE grant (partnership for community resilience and health and quality of life) with PVAMU.
- The School of Nursing's Office of Research provided our faculty Nurse Scientists mentoring support, education and training through faculty Lunch and Learn sessions (2022-2023 = 5), a Journal Club that engages SoN faculty to share and discuss research publications (2022-2023 = 4), mentoring support for tenure-track faculty and new investigators (APT faculty) and proposal support for nearly 60 internal and external grant submissions.

Dynamic Community: Strategic Research Themes, Other Themes

- Community and Economic Resilience - Human Development and Social Dynamics - In 2023, SoN was awarded POPSS: Partnerships & Opportunities for Adolescent Health Preparation, Support and Services from DHHS/Office of Population Affairs. Research will focus on the community dynamics influencing adolescent health.
- Community and Economic Resilience - Workforce and Future of Work - SoN is advancing the nursing workforce, in times of nursing shortages, through Increasing Nursing Access Across Populations with Technology in Simulation (INPACTS) initiative.
- Health and Quality of Life - Diagnostics, Treatments, Intervention and Cures - SoN has partnered with Houston Methodist Hospital and secured private funds to support Cancer Equity and Medical Mistrust.
- Health and Quality of Life - Health Disparities and Community Health - To address maternal health deserts and interventions to support maternal, child, family health, SoN has secured Texas Department of Health and Human Services funding to support implementation science through the HIPPPY and Nurse Family Partnership programs.
- Emerging Technologies and Innovations - Artificial Intelligence, Learning and Autonomy - With funding from the Office for Victims of Crime, Tex-TRAC is a precedent in SANE telehealth programs serving rural and underserved Texas communities.

Communications Visibility

- Grant awards exceeding \$1 million are generally shared externally through the following mechanisms:
 - Posting of news release on external newsroom, Vital Record.
 - Distribution of news release to media (depending on news, this can mean locally, regionally and/or nationally).
 - Sharing of award news on official school social media channels.
 - External newsletter, Aggie Nurse.
 - Fulfillment of earned media pitches and requests.
 - Organic syndication of news through other Texas A&M and independent social media channels and outlets.
 - Ongoing public relations activities dependent on program updates and related newsNotable grant awards, including those not exceeding \$1 million, are generally shared internally through the following mechanisms:

- Notification of grant award to school faculty and staff via email.
- Posting of grant award to school internal website, the Nursing Intranet.
- Sharing of grant award to school faculty and staff via internal newsletter, Aggie Nurse Insider.

HEALTH: SCHOOL OF DENTISTRY (SoD)



Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

- Graduates 2023: 12 MS (6 Orthodontics, 3 Periodontics, 3 Prosthodontics) and 5 PhD (Oral and Craniofacial Biomedical Sciences); Summer Research Programs (4 Summer Undergraduate Research Program (SURP) Participants, 5 Biomedical Informatics and Behavioral Sciences (BIBS) Participants; 23 Dental Student Research Participants
- Creation of an Advisory Group for Clinical Research (AGCR)
- Creation of the Dentistry Faculty Advisory Council for Research (DAFCR)
- The Department of Diagnostic Sciences set up individual faculty advisory groups to mentor and advise junior faculty and a mechanism for professional development activities.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

- SOD has various social activities including the Chili Cookoff, Tuesday evening Line Dancing for movement, and the staff Wellness Walk.
- The Department of Diagnostic Sciences provides information to graduate students and faculty on resources available at the School and University.
- The Dentistry Faculty Advisory Council for Research (DFACR) was created to encourage open dialog between the researchers of various departments and between the basic science department and the clinical departments.

Environment for Innovation: Emphasis on Service

- Associate Editor for a special issue of dental tissue regeneration for Frontiers in Tissue Engineering & Regenerative Medicine (Dr. Svoboda); Director-elect for the American Board of Oral and Maxillofacial Radiology (Dr. Liang); Participated in a project on the application of

Artificial Intelligence in decision making processes associated with surgical treatment of facial trauma in collaboration with Baylor University Medical Center and UT Southwestern (Dr. Nair).

- A Small Grant for Clinical Research (SGCR) was established to cover service cost for research procedures that have clinic fees associated with them.

Environment for Innovation: Research Infrastructure

- The Research Core at SOD is in the process of being revitalized into a cohesive, functioning facility. Currently SOD has an imaging core (with 10 instruments including 2 confocals, a multiphoton microscope, an SEM and two microCTs), an animal facility core, a histology core, and a shared instrument core. A new coordinator has been hired to oversee the instruments and services. A new microCT has been added to the facility that has the capacity to scan live animals.

Dynamic Community: Strategic Research Themes, Other Themes

- Neuroscience and pain research: 3 PIs funded with >\$5 million.
- Mineralized tissue research: 5 PIs funded with >\$8 million.
- Public Health: three grants covering HIV and oral cancer.
- Department of Diagnostic Sciences has submitted proposals for oral cancer detection.
- SOD has various education training workshops and research workshops. There are a variety of research projects done by the residents/specialty trainees in the clinical departments.

Communications Visibility

- IADR/AADOCR William J. Gies Award (Liu, Feng, Svoboda) Peer reviewed manuscripts >30 and 2 book chapters
- Presentations at national and international meetings:21 orals and 24 posters
- Dr. Ouyang was the keynote speaker at the Inaugural Symposium of the Charles and Pak Center of Mineral Metabolism and Clinical Research at the University of Texas Southwestern Medical Center (UTSW)

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

- Mentoring students: SPH successfully implemented new guidance to incentivize 12-month support for SPH-based doctoral GARs (at the NIH-level stipend).
- Faculty growth/hiring (~20 faculty positions): For 2022-23, this included recruitment to fill up to 4 open-rank/open department T/TT positions that align with two SPH Centers that are seeking new leadership (USA and CCHA), with a focus on strategic growth, research mentoring, and new external funding for faculty who affiliate with SPH Research Centers.
- Knowledge/Compliance: ADR/Office of Research implemented a new half-day SPH faculty orientation program in Fall 2022 for new/new to SPH/returning faculty that emphasized basic knowledge of SPH/TAMHSC/TAMU research resources and processes, including SRS, IRB, pilot grants, etc. Similar programs/resources to support research onboarding are planned for Fall 2023+.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

- Awards/Honors: SPH's research excellence award in 2022 focused on an early career faculty member (within 10 years of terminal degree); 2023 award will be presented to an SPH faculty member who is 10+ years from their terminal degree. This structure for the internal award promotes goals of recognizing talent and talent retention.
- HSC Seed Grant Funding: The 2022-23 portfolio of new HSC pilot projects (TAMHSC Seedling grants) includes a strong mix of early career and new areas of study/collaboration that bring together faculty that are new to SPH (through recruitment or MGT changes); this support provides a fast/efficient/clear pathway to collaboration and related successful external research funding to gather preliminary data and other needed supports for external proposals.
- Research Collaboration Events: SPH hosted its first "Faculty Research Mixer" in January 2023. Faculty participants provided a 3–5-minute summary of their research interests, accomplishments, and goals to help identify areas of overlap, themes, and potential collaborations across a mix of backgrounds/career levels.
- The Ergo Center provided on-request work set up consults for all SPH personnel to help guide equipment recommendations and fit for research teams, as needed. This is unique in that it leverages the training of Ergo Center students and support others in SPH.

Environment for Innovation: Emphasis on Service

- SPH hired a new (to SPH) 1.0 FTE Sr. Research Development Officer) to help support SPH researchers with proposal submissions, educational programming (e.g., NSF/NIH career awards workshops) and funds/collaborator matching.
- SPH replaced and trained a 1.0 FTE program coordinator to support SPH research programming (e.g., lunch and learns), reports, and administration.
- SRS has granted SPH additional personnel to support for pre-award proposal submissions due to the increased volume of SPH submissions during 2023 (and anticipates more post-award support for SPH projects in the near future).

Environment for Innovation: Research Infrastructure

- SPH obtained more laboratory space in May 2023 to accommodate growth in functional laboratory research areas (e.g., BSL-2). SPH implemented new guidance for use of that space that will leverage overlapping resources across research teams/projects and support a rapidly growing number of faculty and students in the School.
- During AY 2022-23, SPH provided core support (funding and FTE/new positions) to grow its BOR-approved research Centers and advance leadership of new initiatives/projects through these groups.
- In Fall 2022, TAMU leadership promised SPH the entire Medical Sciences Library building (once vacant) and a related budget to support the required renovations. This infrastructure will be critical to supplement the growth in in SPH research funding, teams that include students, and related research-funded staff.

Dynamic Community: Strategic Research Themes, Other Themes

SPH has a track record and existing strengths in all priority areas identified in the DOR strategic plan including:

- Community and Economic Resilience, future of work:
 - Ergo Center's digital human/future of work/worker safety focus is a strength for SPH.
- Emerging technologies and Innovations:
 - Data/Visualization/ and IT: SPH has a V/R lab for exploring how to bring nature to those who are homebound or in community living settings such as hospitals, assisted living, and/o nursing homes. Another module/team is using it to improve worker safety (training/testing procedures)
 - A/I learning, and autonomy: SPH has a team studying drone delivery of medical devices/equipment/supplies to rural areas
 - Data/AI: Governance of A/I (as it relates to healthcare/medical privacy)
- Health and Quality of Life—Central to almost all the research conducted in SPH.
 - Diagnostics, Treatments, Interventions, and Cures: SPH toxicology research projects/teams studying maternal/fetal relationships of toxic exposures.

- Disease Prevention/Health Promotion: Center for Community Health and Aging and much of the research in the Health Behavior research portfolio (e.g., improving health/quality of life for various communities/sub-communities).
- Health Disparities and Community Health: Southwest Rural Health Research Center's new funding to initiate "Rural Healthy People 2030" (they did 2010 and 2020 in the past)
- National Security – Biodefence/biosecurity: public health emergency preparedness and response (several SPH faculty who have long records of research funding with military/VA/government partners in this area)
- Space Exploration: Human space flight Impacts on human health and health records (NASA) project includes an SPH faculty member with expertise in Health Law
- Sustainability/Environment: SPH has a strong research program in this area and is also leading projects in cross-unit collaborations in FEW/Health, clean water, and FEW resilience/policy Other themes (1-3 significant accomplishments that may not align with the identified strategic research themes)
- Health Policy: long-term contracts/partnerships to evaluate State health policy (e.g., the Texas Medicaid Waiver program) using big data infrastructure and health services research methods
- Occupational Safety in Agricultural Settings (this is a *new* area of strength for SPH that is based on successful recruitment of Dr. David Douphrate in Fall 2022)

Communications Visibility

- SPH researchers/leadership informs the SPH Director of Communications and her team of when a project is funded, paper is published, or a researcher's work is in stages where publicity is warranted (e.g., topic is in the news). The MARCOM team interviews the researcher, writes an article/press release, and submits it to public and public health-oriented outlets.
- SPH researchers often/frequently work with the Conversation to publish less technical versions of their research for broader public interest. SPH has 6 of the top 20 all time cited authors published from TAMU in the Conversation (as of July 30, 2023); Dr. Rebecca Fischer is ranked #2, with 1.4+ million reads.

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

- We have been requiring our junior (assistant professor faculty) to identify an external mentor and provided support to invite them to visit our campus. This is optional for faculty at higher ranks. Our faculty take compliance issues seriously and ensure that they and their team members are up-to-date on all that is required. We are constantly reviewing funding opportunities and sharing them with faculty as applicable.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

- We engage with the faculty regularly in team-bonding activities, mainly through social gatherings, at both campuses.

Environment for Innovation: Emphasis on Service

- Faculty engage in a host of service-related activities, not just internally but also externally. This is through service on national panels and committees, editorial boards, whether appointed or elected.

Environment for Innovation: Research Infrastructure

- The department has been investing, despite the limited resources in strengthening and expanding its core facilities. For example, we recently purchased a confocal microscope for the Kingsville campus, a flow cytometer for the College Station campus, amongst others.

Dynamic Community: Strategic Research Themes, Other Themes

- We have been focusing and encouraging faculty to seek funding from the NIH, to help increase the ranking of the school with AACP and have been successful with these efforts.
- Our faculty continue to expand their collaborations, and the department has been very supportive of these efforts. We are hoping to start new collaborations with TAMUK, especially for faculty on the Kingsville campus.

Communications Visibility

- We strive to share the accomplishments of our faculty within TAMU and beyond, and our director of marketing is playing an important role in this.

COLLEGE OF ENGINEERING



Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

Materials Science and Engineering MSEN

- The MSEN faculty have made it a priority to nurture early-career faculty through deeds of inclusion and engagement. Examples are evident in the extent to which our young faculty is tied into our Army Center, NNSA Center, and several large multi-PI DoD/DoE grants.

Aerospace Engineering

- AERO has introduced a faculty mentoring program that connects incoming faculty to existing faculty with more experience to ease transition and ensure success. Faculty participating in this program schedule meetings with their mentors to discuss topics related to research, teaching, and service.

Chemical Engineering

- Numerous publications in peer-reviewed scientific journals, highly impactful journals.
- Mentoring of junior faculty, PhD students, postdocs.
- Knowledge leaders in numerous areas:
- Biomass conversion process.
- Cutting edge AI and Image Analysis techniques to pioneer advances in fields of biotechnology, biomedical engineering, clinical diagnostics.
- Global leaders in the field of organic and structural batteries.
- First principles atomistic nano and molecular procedures with advancements for development of high energy density batteries, calculations consistent with measurements of electrical properties, and molecular ab initio procedures leading to the eradication of cancer cells.

Materials Science and Engineering MSEN

- Undergraduate Students: The department heavily promotes wellbeing seminars and workshops provided to our students through TAMU's Counseling and Psychological Services: Accepting Emotions, Learning to be Assertive, Anxiety Toolkit Training, Imposter Phenomenon, Resilience and Positive Self-Talk Strategies, Stress Management, Understanding Worthiness and Interest- and Personality-Based Career Assessment training.
- Graduate Students: Our staff and faculty encourage our graduate students' wellbeing through active engagement and training. Examples include supporting the unique needs of our students with disabilities, our LGBTQ+ students (e.g., AggieAlly), and students in distress (e.g., Stand Up, Suicide Awareness, Green Dot), as well as creating an inclusive and welcoming environment for our international students (e.g., Global Party). We hosted several social events for the graduate students' wellbeing, which bring together students, staff, and faculty in a collegial team environment.
- Staff: In April, our staff participated in a department-sponsored lunch and bowling event to emphasize the importance of prioritizing time for personal wellbeing.

Aerospace Engineering

- Staff: Annual awards are presented to staff members, where nominations for outstanding staff members are collected from both staff and faculty.
- Students: AERO hosts industry meetings with students to explain what an aerospace engineering does in different kinds of workplace environments (e.g., national labs, companies, etc.).
- Students: We have developed and deployed a student survey that collects information on areas of excellence and areas that need improvement from the undergraduate students. Correspondingly, we hold town hall meetings with the undergraduate students to communicate the results of the survey, to disseminate actions that result from the survey, and to gather additional information that is not captured by the survey. We have already acted on several things the students were concerned about, such as having more spaces to collaborate in our building. We are continuing to evaluate the survey and town hall findings to assess additional areas in which we can improve.

Chemical Engineering

- Promotion of pluralism through mentoring of students from all backgrounds, with varying scientific ideas and backgrounds, involvement with the ACES program

Materials Science and Engineering MSEN

- Undergraduates: our students continue to be active participants in TAMU's The Big Event, which promotes campus and community unity through service-oriented activities in our community.
- Graduate students: Our grad students are actively engaged as peer mentors and on the Graduate Student Advisory Council (GSAC). They have shaped positive changes to our graduate program. Examples of outcomes include decreasing the number of core courses required for degree completion, establishing an annual review for students and faculty to have open-ended discussions regarding academic performance and expectations, and increasing the annual stipend for all GARS (not just incoming doctoral students). GSAC & Women in Materials Science (WIMS) have hosted practice sessions for Qualifying Exams, giving valuable feedback to assist new students with their preparation.
- Staff: In May, MSEN staff participated in the 10th annual staff workshop. This was a forum for sharing ideas on how to be most impactful as individuals and as a team supporting the student and faculty community.
- Faculty: To maximize faculty-student engagement, we instituted a faculty mentor program, where every undergraduate student in our department is paired up with a faculty mentor. We also launched an industrial mentorship program, wherein industry speakers invited to present out weekly seminar are invited to lunch with 5-10 students. Similarly, each Industrial Advisory Board member has lunch with students during our biannual meetings.

Aerospace Engineering

- Our faculty are encouraged to (and do) participate as reviewers and editors for archival journals. Likewise, we encourage faculty to take leadership roles within professional societies and to serve in leadership roles at national and international conferences.
- We have established priorities for philanthropy and have started alumni "get together" events, where we brief what the department has achieved in the last 5 years. This allows former students to remain engaged with the department and to encourage fundraising.
- We have a new initiative in the department to raise funding that will support graduate student fellowships.
- We have instituted a faculty mentoring program that connects undergraduate students with faculty. Each semester, faculty are paired with a cohort of students. Faculty then hold one-on-one or group meetings to provide advice on academic activities, internship engagement, and full-time career opportunities.

Chemical Engineering

- Active participation as reviewers and editors of scientific journals, internal and external committees such as Scholarship, Engineering Research Council, faculty search committee, National Academy of Sciences, Engineering and Medicine, leadership roles of a variety of internal and external committees, such as Chair of the Chemical Engineering section of the National Academy of Engineers.

Environment for Innovation: Research Infrastructure

Material Science and Engineering MSEN

- Our students and faculty have benefitted tremendously from our user facility investments, notably the Materials Characterization Facility (MCF) and the Soft Matter Facility (SoMF). Equipment grants, including NSF MRI (e.g., small-angle x-ray scattering system in SoMF) and multiple DURIPS have been a further force multiplier to bring our capabilities to the state of the art.

Aerospace Engineering

- We have recently developed a visualization lab that will bring together and support efforts in scientific visualization across the department that, for the time being, focus on research in computational fluid dynamics. Over time, we intend to explore how this facility can be used to support research in other areas.

Chemical Engineering

- GURI funds for support of faculty start-ups in CHEM and CHEM, partial funding of the new environmental XPS instrument in the MCF.
- Conversion of shared microscope space on the 5th floor of the CHEN building
- Introduction of several techniques from the fields of molecular electronics and nanoelectronics into the spectrum of chemical engineering.
- Collaborative research partnerships with 57 institutions, national laboratories, industry partners and foundations:
 - 18 universities and colleges
 - 4 national labs
 - 34 industry partners
 - 1 foundation

Materials Science and Engineering MSEN

- Through focused investment in talent and facilities, we have positioned ourselves as world-class leaders in four research pillars: (1) computational materials science, (2) corrosion, (3) structural materials, and (4) multi-functional and soft materials. Our current focus is to build out two new pillars: (5) materials for extreme thermochemical environments and (6) electronic materials.

Aerospace Engineering

- We have recently defined strategic research themes for AERO. These themes were developed with input from the entire faculty and refined based on feedback from the entire faculty. A guiding principle for our strategic research themes is that they evolve over time. As some areas fade and other areas emerge, our research things will adapt. We are actively working on developing information pertaining to each of our strategic research themes, which will be published online by the end of the year.

Chemical Engineering

- Energy storage and conversion: materials for advanced battery technologies.
- First-principles analysis and design of materials for neuromorphic computing emulating neuronal and synaptic behavior, for the development of bio-inspired computer platforms. .
- Renewable energies: electrolyzers for clean hydrogen production.
- Electromagnetic heating for high-temperature, endothermic catalytic reactions for chemicals and fuels (EPIXC, new DOE manufacturing institute for electrification of process heat).
- Energy storage modeling, decarbonization, carbon capture.
- Climate change innovations addressing challenges in a cost-effective manner.
- Advancements in the fields of biotechnology, biomedical engineering, and clinical diagnostics in specific topics of interest including antibiotic resistance, stomach cancers, soft-matter/complex fluids and integrating microfluidics with 3D printing technologies.
- 2022-2023 total new awards \$11,401,612 from just one institute:

- Theme: Sustainability and Environment
 - Sub-theme: Energy Transition/Clean Energy, Food-Energy-Water (FEW) Nexus
 - Sub-theme: Climate Resilience and Mitigation
- Theme: Emerging Technologies and Innovations
- Theme: Community, Culture, and Economic Resilience/Sustainability and Environment
 - Sub-theme: Human Development and Social Dynamics
- Scientific computing and systems biology: developed algorithms to improve efficiency of evolutionary optimization strategies.

Communications Visibility

Materials Science and Engineering MSEN

- Our students and faculty are given an elite level of engagement through social media features, interactions and spotlights on Facebook and LinkedIn. Our news stories' diversity spreads wide, from student/faculty research and award stories to alumni/donor packages and news press releases on upcoming funds/projects.

Aerospace Engineering

- We are active in posting monthly stories on our website and our social media that highlight recent research achievements.
- We also actively post news stories that highlight student success in a variety of ways, such as student design team competitions and scholarship award recipients.
- We are currently developing new content related to our strategic research areas that will be posted online soon.

Chemical Engineering

- Work closely with Texas A&M Innovation.
- Seminars, lectures, other current established programs at Texas A&M
- Social media
- Presentations to undergraduate students
- Speaking engagements such as keynote speaker at the 8th World Forum of Energy Regulators (WFER)

- Press releases about publications in the journals Nature Energy and Nature Chemistry.
- TAMEI website
- C3E partnership with DOE

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

- Researchers, Centers, and Institutes teams created new knowledge through publications of peer-reviewed and non-peer reviewed materials (books, book chapters, papers, posters, pamphlets, videos, websites, etc.).
- Researchers, Centers, and Institutes senior team members trained and mentored new scientists in the areas of faculty expertise including postdoctoral scientists, doctoral and master-level graduate students, and undergraduate students. Training modules include research compliance, publication etiquette, collaboration, and team's management. Mentorship extended to visiting scientists and faculty on sabbatical.
- Researchers, Centers, and Institutes teams created national, international, and specifically Gulf of Mexico-wide collaborative partnerships to facilitate research activities, education, and outreach.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

- Researchers, Centers and Institutes teams are committed to an intellectual and scholarly environment that promotes open dialogue and the ability to freely exchange ideas. Researchers continue to place an emphasis on recruiting and maintaining a diversity of backgrounds and disciplines within departments, Centers and institutes.
- Researchers regularly meet with students and staff members to ensure they have the tools and resources needed to be successful. Many create a sense of community to help accomplish the goals for each program. Senior team members (graduate students, staff, others) are often assigned as program leads to create leadership opportunities and create redundancy so help distribute workloads and ensure mental health is considered in daily operations.
- Professional development opportunities are made available to all researchers and staff including be not limited to attending conferences, workshops, and networking opportunities. Researchers are encouraged to serve on local, state, and national committee's related to the research enterprise, and those which include the training, qualifications, certifications, documentation, and

fitness of our programs. Researchers are encouraged to nominate team members for awards, fellowships, and other external endorsements.

Environment for Innovation: Emphasis on Service

- Researchers, Centers, and Institutes teams are engaging in service that leads to societal benefits, which includes but is not limited to education and outreach, but also translating science to policy, documenting history and/or responding to extreme events (e.g., hurricanes, oil spills, other).
- Researchers, Centers, and Institute leads are often sought as consultants on local, state and national committees on a variety of topics, many of which impact Texas, the Gulf of Mexico, and marine and maritime related matters.
- A core value at TAMUG is to educate the next generation of research scientists. We have invested in a variety of internal programs to support and enhance undergraduate opportunities (ACES, LSAMP, Center and Institute Fellows, SLF Fellows, etc.). In addition, appropriately one-third of the undergraduate student population volunteers, participates in a directed study, UGRS or other program during their tenure at TAMUG to gain research experience.

Environment for Innovation: Research Infrastructure

- TAMUG invests 100% of the Texas Comprehensive Research Funds directly into the research enterprise. Annual calls provide opportunities for faculty to apply for seed funding to collect data for new projects, purchase new equipment, attend meetings, spend time at state or national archives or collections.
- In collaboration with the library and IT, investments have been made infrastructure for data management (e.g., Texas Digital Libraries) and data platforms (e.g., to execute complex digital networks such as those handled by IDRT). We have also invested in dedicated time on the High Performance Research Computing (HPRC) at TAMU.
- Researchers, Centers, and Institute leads are leading efforts to enhance campus infrastructure. Notable examples are the Gulf Center for Sea Turtle Research efforts to build a new facility, the Offshore Cooperative Ecosystem Assessment Network (OCEAN) created by the Gulf Research Institute for Highly Migratory Species and the Texas Disaster Information System (TDIS) established by the Institute for Disaster Resilient Texas.

Dynamic Community: Strategic Research Themes, Other Themes

- TAMUG campus research efforts are on, of and about the sea. The current strategic focus centers on the Blue Economy with key efforts in the following five arenas: fisheries, climate change, coastal tourism and health, renewable energy, and maritime transport.
- Researchers are seeking funding in new arenas including but not limited to diverse efforts such as working with coastal engineers from Delft University of Technology (The Netherlands) to create a coastal spin to protect Houston and the local area and a computational model of wave and tide action to determine impacts on critical sea turtle nesting habitat, to focusing on decarbonization and cybersecurity of marine systems.
- A new collaborative research program was established with UTMB. Matching funds supported three pilot projects which are cross disciplinary; with preliminary funding, teams are now being mentored to support efforts are gaining new NIH funds (TAMUG) and new NSF funds (UTMB).
- Gulf Center for Sea Turtle Research is fundraising to build a new, larger, and permanent sea turtle hospital that is also connected to an educational outreach center. The facility will educate visitors about sea turtle biology and conservation, and coastal stewardship.
- Center and Institute directors are working with state and federal agencies, as well as foundations and community organizations to raise awareness of the work being done at TAMUG as well as the possibilities which would be made possible with strategic investments in people, resources, mentoring and other key performance measures.

Communications Visibility

- The research office at TAMUG has redone its website and now includes an active news and events section where research stories and successes are delivered to both internal and external stakeholders. This includes gathering to a single location outreach conducted by researchers on campus.
- Some faculty and staff are active in social media, engage with newspapers and/or TV.

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

- Sponsored research conferences on timely issue that cut across departments with an emphasis on producing academic publications (e.g. “Military Alliances and the Future of NATO”)
- Doctoral students are routinely included in academic papers as co-authors with POLS; post-docs working in centers and institutes collaborate on publications and learn grant writing skills.
- College and departments facilitated practical short trainings to meet researcher’s needs. These included how to apply for funds and sponsored practical short workshops by local experts in particular research methodologies for students and faculty. For example, session on how to design surveys, how to conduct experiments, etc.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

- Programs, centers, and departments bring in a mix and range of speakers with different levels and kinds of experience (e.g. academics and practitioners, junior and senior scholars) and points of view.
- Political Science sponsored lunches to bring together faculty from different departments to talk about their shared professional challenges and strategies for overcoming them.

Environment for Innovation: Emphasis on Service

- The college sponsored 2 zoom training sessions in Global Engagement and the Huron platform.
- The college also is developing a system to reach out to SRS more proactively try to push for rapid contract approvals before the lack of a contract becomes an emergency.

Environment for Innovation: Research Infrastructure

- In 2022 the college leadership was restructured to include a full-time Associate Dean for Research & Graduate Education (separate from the Executive Associate Dean role).
- Regular meetings of the center & institute directors were established and held.
- The DC Teaching site space can/has hosted conferences to bring outreach to policy makers.

Dynamic Community: Strategic Research Themes, Other Themes

- We have strong strength in the National Security Theme including dedicated centers and institutes (e.g. Albritton Center for Grand Strategy)
- We have work on-going through the Center for Non-Profits which has catalogued data on philanthropic giving in the southwest.
- A pandemic preparedness initiative within the Scowcroft Institute.
- There are a substantial number of researchers working broadly in the topic of political economy which could align with National Security but is not always identical.
- Policy Evaluation and Public Policy

Communications Visibility

- This is something we are working on. We have a regular "Inside the Bush School" newsletter summarizing weekly news coverage of stories from Bush School faculty. We also have faculty spotlights on our website.

AgriLife Research and Extension Centers

Dynamic Community: Strategic Research Themes, Other Themes

Contributions are being made in key research themes, cross-communications, conveying to stakeholders.

Amarillo New 80-head research beef cattle feedlot with real-time feed-consumption & liveweight monitors to enable the effects of cattle-feeding strategies on sustainability metrics like enteric methane emissions (GHG)

T. Marek awarded the American Society of Agricultural and Biological Engineers Dale Heermann Sprinkler Irrigation Award, one of ASABE's top-tier awards

Developed rapid field-based LAMP diagnostic test for '*Candidatus Liberibacter solanacearum*', the zebra chip (ZC) potato pathogen

Beaumont Developed & incorporated model- and marker-assisted advance phenotype selection as integral components of the specialty rice breeding program

Understanding environmental stress-induced cell membrane instability and elevated respiration effects on rice production

Developing new management practices to enhance rice carbon sequestration, greenhouse gas emissions, soil degradation, and ecosystem services

Discovering grain genes that control mineral micro-nutrient concentrations in grain to be used to identify markers for targeted traits for genetic improvements that have nutritional benefit

Corpus Christi Genomics-driven breeding oyster program and collaborating with TAMUCC on wetland plant restoration & effects of climate change & pollutants on aquatic species

Reduced risk of sorghum infection by the invasive aphid *Melanaphis sorghi* using resistant sorghum hybrids = \$100M savings

Completed the Cloud-Based Data portal for automated data processing, feature generation, and feature extraction system to improve UAS data processing efficiency.

CVM Developed a second large animal model (sheep) for rare human bone diseases

Demonstrated male alcohol exposure inhibits IVF = picked up US, UK, Canada & Australia media (doi: 10.1093/molehr/gaad002)

Dr. C. Long received 2023 AAAS Science & Technology Fellowship = a fellow at the Biomedical Advanced Research and Development Authority (BARDA), in HHS.

Dallas Developed a rapid, ultrasensitive, and cost-effective nano sensor Chip for disease diagnostics

Turfgrass Breeding licensed & released embryo-rescue derived drought resistant 'Cobalt' St. Augustine grass for use in home lawns and landscapes

Controlled Environment Ag (CEA) team is co-optimizing the indoor farm environment to reduce operational costs (OPEX).

Evaluating interventions to improve human health & mood through improved diet and physical activity behaviors.

El Paso Focus on water resources mgt & resiliency

Awarded Colonias Public Health Nutrition f-grant to improve food accessibility and marketing = \$30M

Lubbock Acquired Barker and Romine farms to increase research capacity at 0 cost

Completed largest soil carbon assessment in TX history on corn, cotton, and sorghum commodities for use in sustainable production systems-synergistic =over 18.5 MM acres.

Leading strategic research initiative to address Fusarium wilt race 4 in cotton, an emerging deadly disease threatening Texas' most valuable row crop.

Overton Released giant cowpea, a full-season forage that flowers early for seed production in NE Texas

Determining El Niño-Southern Oscillation (ENSO) effects on cowpea and winter wheat yields in the semi-arid region of the southern United States

Developed herbage allowance-nutritive value-based pasture factor equation that accounts for the 3-dimensional effects of stocking rate, animal body weight, and herbage nutritive value on herbage intake

Effects of prenatal stress, epigenetics, mitochondrial function & impacts on key cattle traits and production

Estimated nutritive value of bermudagrass forage to facilitate forage-animal modeling = \$16 M impact

San Angelo Using quantitative genetics to enhance natural parasite tolerance in small ruminant animals (sheep & goat).

Understanding physiology behind parasite resistance in the two most popular breeds of sheep.

Guard dog program to protect sheep from predation.

Using IR spectroscopy to determine soil carbon dynamics in Edwards Plateau & other parts of TX.

Stephenville Co-developing 'Diesel Nuts' with Chevron, a unique peanut with 60% oils = \$6.5M, 5-year program.

Received donation of the Slaughter Harris Ranch (~1,000 ac) on the Brazos River in Palo Pinto County, TX = \$8M.

Temple Evaluating national policies for their environmental and economic impacts using Center-developed models.

Developing national policy on agriculture conservation and reducing environmental footprint and pollution, Climate-smart soybeans (\$800K).

Collaborating with Nature Conservation to develop global models to assess carbon and climate impacts on agriculture and forested lands.

Uvalde Nilgai antelope, are most abundant free ranging ungulates in S TX, can be reservoirs for cattle ticks, but do not appear to be hosts for Babesia parasites = impacts cattle industry.

Vegetable Physiology Program identified the tomato wild relative *S. peruvianum* as a breeding source for developing interspecific hybrid rootstocks with thermotolerance and increased graft compatibility.

Systems Plant Physiology program used GWAS to identify molecular markers that could be used in spinach breeding programs to enhance nitrogen use efficiencies.

Vegetable Breeding program first in the world to identify two pathogenic bacterium species (*Pseudomonas uvaldensis* and *Curtobacterium allii*) in onion causing \$60M in damages.

Vernon (rebuilding after a tornado) Evaluating the use of subtropical grasslands as alternate management strategy to lower GHG and enhance soil carbon capture.

Identifying more efficient small grain seeding rates to improve sustainability of agriculture.

Evaluating potential organic hard red winter wheat (HRWW) for Texas.

VetMed Hired Director of the Translational Imaging Center and nearing new administrative structure for broader Texas A&M Institute for Translational Imaging.

Focused on aspirational Center for Infection and Immunity and collaborations with Biomedical Engineering to leverage translational animal models.

VLCS Large Animal Clinical Sci/VIBS Equine Infectious Disease Laboratory developed novel PCR test by for detecting *Streptococcus equi* subsp. *Equi* and *Streptococcus equi* subsp. *Zooepidemicus* in horses.

Veterinary Education Research & Outreach (VERO) program (WTAMU) identifying areas important to the livestock industry = antimicrobial use & resistance, environmental & host ecology, bovine respiratory disease complex, & liver abscessation in feedlot cattle.

Clinical application of a novel interlocking nail orthopedic implant construct by Dr. Jeffrey Watkins for use in horses and large animals requiring specialized equipment for long bone fracture repair.

Weslaco Patent for innovative microbial hairy root high throughput screening (HTS) technology for efficacy testing of antimicrobials effective against fastidious plant pathogens.

Screened germplasm collections & identified one new accession resistant to potato zebra chip and multiple accessions tolerant potato zebra chip.

Developed energy cane and *Miscanthus* germplasm that is being evaluated for commercialization for biomass production for energy.

College of Agriculture and Life Sciences

Dynamic Community: Strategic Research Themes, Other Themes

AGEC (Agricultural Economics)

- Agriculture & Food Policy Center (AFPC) expanded role into USDA nutrition program.
- Collaborating on DOE matters on carbon capture & valuable by product production = \$millions.
- Faculty received prestigious awards: Agricultural & Applied Economics Association Fellow, AgriLife Research Fellow.

ALEC (Agricultural Leadership, Education, and Communications)

- Identifying factors affecting agricultural land managers' perceptions of source credibility, what factors drive perceptions of credibility across source type, & how perceptions shape agricultural land managers' responses to climate-smart messages and programs.
- USDA project to implement a Science Influencers program that trains young scientists how to be digital media influencers and shape conversations impacting America's diverse audience groups.
- Using analytics to monitor social engagement with agricultural research & leading national/international conversations among research stakeholders to document the societal impacts of transdisciplinary research.

ANSC (Animal Science)

- Progress on key livestock metrics, such as reproductive biology, nutrient utilization, animal genetics, animal health and welfare, and muscle biology to improve long-term sustainability of cattle.
- Generating livestock-based data that enable full & accurately assessment of environmental and societal impacts of livestock production to lead to improved resource management and development of climate-smart, sustainable recommendations.

BAEN (Biological and Agricultural Engineering)

- Design and synthesis of molecules that will adapt to changes in virus (Zika, Dengue, West Nile and SARS-COV2) receptors.
- Used atmospheric and cold plasma and ozone to reduce food and fiber loss and increase food safety.
- Logistics to identify frequent plastic contamination sources in cotton bales = 32% reduction in contamination.

BCBP (Biochemistry and Biophysics)

- Cryogenic electron microscopy.
- Menke's Disease.
- Raman spectroscopy.

ECCB (Ecology and Conservation Biology)

- Deep learning for weed destruction.
- Chimpanzee social signaling.
- Recoupling fire and grazing in grasslands.

ENTO (Entomology)

- Received a \$1.5M congressional appropriation to support Forensic Science
- Finding that disabling mosquitos' immune systems them susceptible to the viral pathogens they transmit (Dengue, Zika, Chagas, etc.).
- Hosted first Insects as Food and Feed Symposium showcasing alternate protein source for nutrition.

FSTC (Food Science and Technology)

- New department, none reported for 2022.

HRSC (Horticultural Sciences)

- Received SCRI project on Rose Rosette Disease Research, a major economic threat to rose production in Texas = ~\$4M.
- Co-Pis on a USDA CAP Project on pecan research = \$7.2M.
- Held 279 F2F programs with 16,686 participants; 119 Virtual programs with 234,396 participants; 143 county programs supported with 6,143 participants; 5 youth programs, 985 participants; 29 Face to Face and 19 Virtual agent trainings; 30 CEU programs.

NUTR (Nutrition)

- Nutrition & human health.
- Assessment of intestinal physiology of babies.

PLPM (Department of Plant Pathology and Microbiology)

- Federal and state funded projects to address emerging Fusarium wilt disease threatening \$6.4 billion cotton industry in Texas and the US.
- Federally funded research and education programs to address rose rosette threat to Texas rose industry.
- Developing 3D print building materials using agricultural waste inoculated with fungi as a binding agent.
- Center for Phage Technology addressing recalcitrant bacterial pathogens threatening health issues such as Cystic Fibrosis.
- Federally funded research programs in environmental microbiology and biotechnology such as algae-based carbon capturing, bioplastic manufacturing, and microbial plastic waste biodegradation.

POSC (Poultry Science)

- Showed altering dietary calcium level and source results in differences in poultry losses due to Necrotic enteritis (NE) = could save the US >\$2B per year.
- Established long-term gut stem cells-derived organoids in birds, could reduce's poultry transmission of Salmonella to humans = could save >1.3 billion illnesses and 200,000 deaths in humans.
- Developing improved methods to manipulate primordial germline cells (PGCs) in birds and transfer to host embryonic gonads prior to incubation and hatch.

RPTS (Recreation, Parks & Tourism Sciences) (HHMT Hospitality, Hotel Management and Tourism) & NRI (Natural Resources Institute)

- Texas Landowner Survey to understand private landowner needs for operating and managing their land.
- Texas Water Survey, first of its kind, to determine daily use and management of water resources across Texas.
- Determining pace of growth emanating from San Antonio & I-35 corridor effects on rapid loss of agricultural lands, increasing night-sky light pollution, and loss of spring flow and aquifer drawdowns, especially Camp Bullis.
- Est. Center for Natural Resources Information Technology (CNRIT) to better understand the importance of rangeland and carbon sequestration to mitigate impacts of climate change.
- Est. Center for Grazinglands and Ranch Management (CGRM) to better understand the benefits of regenerative rangeland practices to improving broad ecosystem services ranging from carbon, biodiversity, and water capture.

SCSC (Soil and Crop Sciences)

- Receipts of multiple grants for Climate Smart Farming, Carbon Sequestration, and Reduction in Greenhouse Gas emissions.
- Developing enhanced phenomics utilizing drones and new AgriLife Research auto-phenotyping greenhouse.
- Plant breeding & genetics: Cobalt turfgrass, Hemp, rice and Bioenergy crops.

Communications Visibility

- Interactions take place regularly with every agricultural commodity group across Texas and with most growers, farmers, ranchers, etc.
- AgriLife publishes in numerous magazines such as Texas H2O by the TWRI and AgriLife Toay, not to mention numerous press releases and articles.

COLLEGE OF ARTS AND SCIENCES



- Early-career research workshop for research mentoring, research compliance and research integrity, with 29 attendees.
- Funding visits to potential funding agencies/organizations, with 6 awardees/sponsored visits.
- Six travel support awards for postdoctoral researchers to attend conference and visit research facilities.
- \$600,000 supported 47 pilot projects or team-building projects to promote interdisciplinary research across the college and help with a smooth transition of the college merger.
- Started a new Strategic Transformative Research Program that will support approximately 64 pilot research or team-building projects.
- Workshop for graduate students focused on successful applications for federal fellowships.
- Funding support for early-career researchers' time and effort in developing research proposals
- Worked with faculty and research staff to ensure compliance with research security policies.

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

- College-level Faculty Research Impact Awards, 27 nominees and 9 awardees.
- College-level funding support (external award enhancement) in appreciation of faculty's external awards and recognitions. In particular, the college co-funded 25 ArtSci amplification awards in FY23.

- Revitalized the Race and Ethnic Studies Institute (RESI) by expanding funding opportunities for faculty and doctoral students and by developing mechanisms to foster collaborative research proposals focused on Hispanic-serving institutions.
- Supported Public Policy Research Institute (PPRI), which supports statewide initiatives focused on vulnerable populations including veterans, the indigent, and at-risk youth.

Environment for Innovation: Emphasis on Service

- The College Research Development Support Team is currently being constructed and a Senior Research Development Officer has been recruited.
- Extensive public-facing outreach, including Chemistry Road Show, Physics Festival, and Brazos Valley Reads.
- Hosts state and national-level data gathering efforts, including Texas State Climatology Office, the Gulf of Mexico Coastal Ocean Observing (GCOOS), and the Geochemical and Environmental Research Group (GERG).
- College's funding support for many research conferences and workshops organized by our faculty, which were important services to the research community.

Environment for Innovation: Research Infrastructure

- College program of equipment matching funds supported 14 requests, totaling \$241,262.
- Bridging funding support for research labs.
- Survey of college equipment inventory and development of maintenance/replacement costs resulted in recommendations for maintenance funding level.
- Contributed to the ongoing success of the Giant Magellan Telescope, a \$2.2 billion astronomical facility initiative.

Dynamic Community: Strategic Research Themes, Other Themes

- The college developed interdisciplinary working groups around three interdisciplinary themes: environmental studies, decision science, and biostatistics.
- The college approved 48 foundational tenure-track hires for FY24 to strengthen the research base of the college.
- External proposals submitted: 600 proposals.
- External grants/contracts: 259 awards, including 26 large (>\$1M) awards (notably, the \$20M NSF award for the Center for the Mechanical Control of Chemistry).

- External grants/contracts: \$124,113,261 awarded, representing an increase by 42.8% compared to the sum of the three legacy colleges' FY22 counterparts.
- Research expenditures on external funding support increased by 10.5% in FY23 compared to the sum of the three legacy colleges' FY22 counterparts.
- Active engagement with the university's Space Research Initiative

Environment for Innovation: Knowledge, Mentorship, Research Compliance, Research Integrity

- We held our annual, full-day scholarship retreat in December 2022. Fifteen faculty presented their work, at various stages of completion, to get feedback from colleagues (including from an assigned reader in the same field). The retreat is a wonderful opportunity to get feedback, to share our research more generally with colleagues, and to build community around our research interests.
- Pre-tenured faculty are allocated financial resources and administrative support to organize conferences or workshops in their respective fields. This support is designed to help our pre-tenured colleagues to gain more exposure for their scholarship, to develop professional connections with leaders in their fields, and to develop their own leadership profiles.
- Our faculty are very active in organizing academic conferences that further the development of law and bolster the reputation of our law school. In 2022-2023, we hosted 14 conferences at our campus in Fort Worth, on topics ranging from intellectual property to environmental law and dispute resolution. Our faculty also hosted events at other universities (e.g., the Center for Law and Intellectual Property co-organized the IP and Human Rights Workshop at Yale University, and Professor Tim Mulvaney organized the Columbia Law Review Symposium on Education and Property).

Environment for Innovation: Culture of appreciation for Pluralism and Wellbeing

- During the 2022-2023 appointments process, the Law School hired five faculty members who are accomplished scholars and teachers, with diverse backgrounds and research interests.
- During 2022 and 2023 (to date), Law School faculty were nominated for 51 awards, with 25 successful nominations (Law School staff were nominated for an additional 3 awards). Faculty received University and external awards to recognize exceptional research, teaching, and service

to the legal and larger community. Most of these awards were submitted with Law School assistance, including drafting advice and submission assistance from a faculty Awards Liaison, the Associate Dean for Faculty Research and Development, and the associate dean's executive assistant.

- A faculty member applied for and received a workload adjustment under our acute family care policy to care for newly adopted children. Another faculty member will receive a workload adjustment in the upcoming academic year to take care of a newborn child. Both faculty members are active, engaged scholars.

Environment for Innovation: Emphasis on Service

- In 2022-2023, we had a record number of five faculty elected to the American Law Institute—the legal equivalent to the national academies. These faculty are elected in recognition of their scholarly achievement and record of service to the legal community.
- Many of our faculty hold leadership positions in academic and professional organizations that advance legal knowledge. For example, Professor Peter Yu serves as Vice-President and Co-Director of Studies of the American Branch of the International Law Association, the preeminent international NGO involved in developing and restating international law, founded in 1873. Similarly, Professor Gabriel Eckstein assumed the role of Chair of the Executive Council of the International Association for Water Law. The Association, which has official observer status in a number of UN forums, is the only professional organization dedicated to the study, exchange of knowledge, and development of water law at the national and international levels.
- Professor Bob Probasco, director of Texas A&M Law's Tax Dispute Resolution Clinic, was named an inaugural member of the Association of American Law Schools' Pro Bono Honor Roll, based on his exceptional work engaging in, expanding, and supporting his law school community in providing pro bono legal services.

Environment for Innovation: Research Infrastructure

- In June 2023, we broke ground on the Law and Education building, the first building of the Texas A&M Fort Worth research campus. Based upon months of careful planning (including tours of innovative law school buildings in similarly situated urban areas), this building will have state of the art classrooms, offices, library facilities, and conference/public meeting spaces for the School of Law. The Law and Education building is slated to be finished in 2025 and will have space dedicated to other TAMU departments, facilitating interdisciplinary collaboration.
- Our research budget allocates funds in ways to maximize support for faculty activities while building in mechanisms to ensure accountability and compliance with human subject and other

regulations. For example, we have funds allocated to support research conferences, and faculty have the opportunity every year to submit proposals. We also have internal research grants available; this year, we increased the baseline amount to be competitive with peer law schools and divided the grants into two payments (with the final payment available when the proposed research project is completed, to ensure accountability and provide administrative mechanisms to ensure research compliance and to increase publicity of our research projects—see Communications Visibility answer).

Dynamic Community: Strategic Research Themes, Other Themes

- We hired Dr. Bill Sage, a member of the National Academy of Medicine and a Fellow of the Hastings Center on Bioethics, to be the founding director of a university-wide institute for health care access. The institute expands the law school's health law program and aids in research, education, and care delivery models that promote affordability and justice in the healthcare system. Dr. Sage has joint appointments with the School of Law, the School of Medicine, the Health Science Center, and the Bush School.
- Professor Bloch-Wehba was awarded a fellowship with the Democracy and Digitalization research group at the Weizenbaum Institute in Berlin in June 2022, where she worked on various projects related to law, democratic theory and algorithmic governance. She also received a grant from the John S. and James L. Knight Foundation, to support her scholarship on tech whistleblowers and algorithmic transparency.
- Professor Gabriel Eckstein, an expert in international and transboundary water law, represented Bolivia in its water dispute with Chile at the International Court of Justice.
- Dr. Susan Fortney, an internationally recognized ethics expert, received a \$443,000 NSF grant to study sexual harassment in STEM fields from an ethics perspective, with systematic examination of institutions' ethical infrastructures, including their formal controls, informal influences, and surrounding climate and culture. By developing self-assessment tools for universities nationwide to improve their ethical infrastructures, Dr. Fortney and her team are generating societally relevant outcomes, including improved recruitment and retention of women and other under-represented populations in STEM.
- Professor Luz Herrera, a leading advocate and scholar on issues of access to justice, was awarded the Fulbright Distinguished Scholar Award in Education and Reducing Inequality. She will work with the University de Sao Paulo in Brazil to study the implementation of pro bono legal services in low-income communities in Brazil and the role of law school clinical programs in that implementation.
- During this past academic year, we established two legal clinics— the Civil Rights Clinic and the Environmental & Natural Resources Systems Law Clinic. Led by research-active faculty, the

clinics seek to address critical issues in the state and to equip law students with hands-on, practical experience to lead change in these practice areas.

Communications Visibility

- In 2022, as part of our U.S. News campaign to reach other voting members of the legal academy, our marketing and communications department sent 7 electronic messages and 5 direct mail pieces promoting our faculty and their research. Additionally, with assistance from our Marketing and Communications department, our centers and programs sent 13 newsletters to their peer academics, highlighting their research activities. These marketing materials have been instrumental in improving our Peer Reputation score in our U.S. News & World Report Ranking, scores that have been improving at a rate of 0.1 per year, more than any law school in the country over the past five years.
- In 2023, the MarComm department will be launching a new website for the School of Law. As part of this project, the team has also initiated a Microsoft SharePoint build to create communication pipelines between faculty/research and the Marketing & Communications function. These pipelines have two goals: to create more and better external communications and to develop a Law School newsletter to publicize our research accomplishments internally.



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