

NSF Broader Impacts and Education Plan Expo: List of Resources Representatives

AggiE_Challenge – This Engineering Academic and Student Affairs (EASA) program is designed to provide engineering undergraduates opportunities to collaborate on multidisciplinary teams and work directly with faculty and graduate students in developing solutions for grand engineering challenges facing our society. The program is open to students from freshman to senior level and participants can pursue projects of interest to them and in departments outside their major. Students enroll in and ENGR 291 or 491 section specific to the faculty project. Since 2012, the program attracted more than 2,000 registrations. The program provides faculty an opportunity to identify students across the college with relevant skills to support their research. Contact: Magda Lagoudas, m-lagoudas@tamu.edu; Website: <https://engineering.tamu.edu/easa/areas/enrichment/aggie-challenge>

Center of Integration of Research, Teaching, and Learning (CIRTL) - National and local organization that helps current and future faculty develop and advance evidence-based teaching practices to enhance undergraduate education. Contact: Morgan Schweller, cirtl@tamu.edu; Websites: <http://cirtl.tamu.edu>; cirtl.net

Center for Teaching Excellence – CTE supports professional development in teaching for faculty, post-docs, and graduate students. Center approaches recognize the impact of transformative learning experiences achieved through collaboration. To facilitate these opportunities, much of our programming is constructed in sustained, community-based formats. As connection points to these opportunities, we also offer webinars and consultation (individual and group) sharing actionable information and feedback on a variety of teaching and learning topics. Contact: Jean Layne, Lead Instructional Consultant, jlayne@tamu.edu; Clint Patterson, Instructional Consultant, capatterson@tamu.edu; Website: <http://cte.tamu.edu/>

Engineering Undergraduate Summer Research Grant Program – The Undergraduate Summer Research Grant Program (USRG) at Texas A&M provides an exciting and unique opportunity for domestic undergraduate students from Texas A&M and other colleges and universities within the U.S. and its territories to immerse themselves in research under the guidance of College of Engineering faculty, postdoctoral fellows and advanced graduate students. Each summer, this program is open to talented domestic students who are completing their first, second or third year of college with a minimum GPA of 3.25. The program culminates in a poster session where students will have the opportunity to present their research to faculty and peers, gain valuable insight and experience. Students who take advantage of this opportunity are more likely to attend graduate school and continue researching innovative advances in engineering and technology. Deadline to apply for summer 2021 is March 5th. Contact: Tandiyn Morrel, tmorrel@tamu.edu; Website: [Undergraduate Summer Research Grant Program](https://engineering.tamu.edu/undergraduate-summer-research-grant-program/)

Halliburton Engineering Global Programs – This resource of Engineering Academic and Student Affairs (EASA) supports the College of Engineering's Globalization goals by developing an implementing high impact global programs to prepare engineering students to lead in the International Field Troops, and Faculty led programs. There are several ways to for faculty members to be engaged in this program including lead a global experience for students, collaborate in global grants, host international students, among others. Contact: Dr. Maria Alves, malves@tamu.edu; Website: <https://engineering.tamu.edu/global>

LAUNCH - Learning Communities, Academic Excellence, Undergraduate Research, National Fellowships, Capstones, Honors – LAUNCH is a unit of Undergraduate Studies in the Division of Academic Affairs providing high- impact educational experiences and challenges motivated students in all academic disciplines to graduate from an enriched, demanding curriculum. The programs administered by the office bring together outstanding students and faculty to build a community of knowledge-producers, life-long learners, nationally-recognized scholars, and world citizens. Contact: Annabelle Aymond, annabelle.aymond@tamu.edu; Website: <http://launch.tamu.edu>

Louis Stokes Alliance for Minority Participation – The purpose of this NSF-funded TAMUS LSAMP research alliance (composed of Texas A&M University, Prairie View A&M University, Texas A&M University-Corpus Christi, and Texas A&M International University) is to increase the number of underrepresented minority (URM) students successfully completing degrees in STEM disciplines. TAMU programs include: Undergraduate research opportunities with STEM college partners; Graduate Interest Group— to equip undergraduate students with

resources and motivation to apply to graduate school; and Bridge to the Doctorate—to increase the number of URM students who complete doctoral STEM degrees. Contact: Dr. Sam Merriweather, s_merriweather@tamu.edu; Website: <http://tamuslsamp.org>

Math Circle and SEE-Math – We run a Saturday afternoon outreach activity for gifted students in 5th-12th grades called MATH Circle. We also run a 2 week Summer Education Enrichment in Math (SEE-Math) for gifted students entering 6th-8th grades. These are students who will be our future STEM scientists. Adding a \$1000 line item dedicated to the Math Circle and/or SEE-Math serves as a Broader Impact for any STEM Grant. Contact Dr. Philip Yasskin, yasskin@math.tamu.edu

NSF I-Corps Site Grant – The National Science Foundation awarded the College of Engineering an I-Corps Site grant (\$500K) to promote knowledge and skills associated with taking an innovation to market among engineering students. The program is open to graduate and undergraduate students and provides training and access to funds (\$3K/team) to support market analysis/customer discovery or product development. Faculty are invited to nominate students from their research team to participate in the program and bring valuable input from potential customers in industry to help align specific research topics to the needs of the market. Contact: Magda Lagoudas, m-lagoudas@tamu.edu

NSF Innovation Corps (I-Corps™) Node Grant – The McFerrin Center for Entrepreneurship is a partner in the NSF's Southwest Node for I-Corps™, a consortium of the 5 largest research institutions in Texas funded to support, recruit and prepare teams from academic institutions to participate in the national I-Corps™ program. I-Corps™ Teams are offered a \$50,000 NSF grant to explore commercial viability and marketability of their innovations, regardless of the prospective market or industry. The McFerrin Center leads the recruitment and preparation of these teams from TAMU and across the A&M System: <https://www.swicorps.org/>; Contact: Blake Petty, blakepetty@tamu.edu

Office of Scholarly Communications – The TAMU Libraries Office of Scholarly Communication (OSC) offers consultations, tools, and educational services for scholars in the areas of copyright and fair use; publishing; digital collections; and communicating scholarly reputation and impact. We are also helping organize the OASES program, a library program that partners with faculty to adopt, adapt, and create open educational resources. For more information about OSC, contact: Dr. Bruce Herbert, beherbert@library.tamu.edu, Website: http://library.tamu.edu/services/scholarly_communication/index.html

Spark! PK-12 Engineering Education Outreach – This resource of the Engineering Academic and Student Affairs helps ignite an engineering education with PK-12 students, families, teachers, administrators, and counselors throughout the state of Texas. Contact: Shelly Tornquist, stornquist@tamu.edu; Website: <https://engineering.tamu.edu/outreach/index.html>

Texas A&M University Education Research Center – Texas A&M University Education Research Center (ERC) studies major issues in education reform and school governance. The mission of the ERC is to investigate these issues in order to inform educational policy, facilitate decision-making, and improve student learning. In support of its mission, the ERC conducts research in three areas: a) program evaluation; b) STEM education; and c) educator preparation. Contact: Jackie Stillisano, jstillisano@tamu.edu; Website: <http://erc.cehd.tamu.edu>

Texas A&M University System Research Model – Alliance for Graduate Education and the Professoriate (TxARM AGEP) – The Texas A&M University System AGEP Alliance—Texas A&M University (TAMUCS), Prairie View A&M University (PVAMU; an HBCU), and two Minority Serving Institutions (Hispanic), Texas A&M University-Corpus Christi (TAMUCC), Texas A&M University-Kingsville (TAMUK), and the evaluators from Oak Ridge Associated Universities (ORAU)—are collaborating to develop, implement and study a model of STEM doctoral degree completion and the transition to successful postdoctoral fellowships and faculty careers for historically underrepresented minorities. Some of the unique set of interventions include using individualized development plans for participants as they transition from dissertator to postdoctoral scholar to faculty; providing participants with professional development opportunities related to communication, writing, networking and job preparation/transition; supporting participants with mentors at the institutional and field-specific expert levels; and offering participants opportunities to experience academic culture and activities at

historically black colleges and universities and international institutions. Contact: Dr. Shannon D. Walton shannon@tamu.edu; Website: <https://agep-txarm.tamu.edu/>

Texas Sea Grant – Texas Sea Grant is a partnership with NOAA, the state of Texas, and universities across the state whose mission is to improve the understanding, wise use, and stewardship of Texas coastal and ocean resources. To achieve this mission, Texas Sea Grant provides research and engagement programs to benefit the people, businesses, and communities of Texas through research and extension grants and academic scholarships. Texas Sea Grant also deploys extension professionals into Texas coastal communities to support conservation resiliency, economic development and STEM education efforts. Contact: Cindy Lyle, cynthia.lyle@tamu.edu; Website: <http://texasseagrant.org/>

Women in Engineering (WE) – The Women in Engineering (WE) program was established at Texas A&M to provide academic, professional, and personal growth opportunities for female students to pursue and succeed in engineering. Through innovative programming and partnerships, WE works to increase the number of women engineering graduates and the pool of women entering the engineering profession. Retention programs concentrate on four areas: academic success, professional development, community building, and professional practice. WE retention efforts host over 80+ events and programs annually with more than 4,000+ current undergraduate and graduate students. WE recruitment efforts encompass 1800+ perspective students, parents, faculty, staff and the general public annually. For five years in a row (Fall 2015 – Fall 2019), Texas A&M has attracted the largest incoming freshman class of women in the country. Contact Shawna Fletcher, fletcher.234@tamu.edu

Additional Broader Impacts Resources (not at the Expo today):

Advancing Research Impact in Society (ARIS) – This NSF-funded annual summit serves to create a community of practice fostering the development of sustainable and scalable institutional capacity and engagement in broader impacts activity. They have created a helpful brochure of “Broader Impacts Guiding Principles and Questions for National Science Foundation Proposals,” https://www.researchinsociety.org/media/wysiwyg/Extensiondata/Pro/ARIS/Docs/nabi_guiding_principles.pdf; Website: <https://www.researchinsociety.org/>

Aggieland Saturday—is a university-wide open house created to help prospective students and their families learn about the opportunities available at Texas A&M University. Each academic college and many student service offices provide fun and informational sessions throughout the day. Spring each year. For HS Juniors and Seniors. Work through your college or department to engage in this event. Website: <https://admissions.tamu.edu/agsat>

Aggies Invent—This resource of Engineering Academic and Student Affairs’ (EASA) Engineering Entrepreneurship Program is a 48-hour intensive design experience. Each event is held at the Fischer Engineering Design Center (FEDC), a 61,000 square foot rapid prototyping lab. The format of the experience is to engage 60 or more students in multidiscipline/multi-level teams in hands-on projects that will push their innovation, creativity, and communication skills. Each event will have a specific theme and will be designed in collaboration with both industry and faculty. Contact: eep@tamu.edu; Website: <https://engineering.tamu.edu/student-life/aggies-invent/index.html>

Aggie STEM—This program provides STEM educators with tools necessary for advancements in science, technology, engineering, and mathematics. The Aggie STEM Summer Camps (ASSC) give students real world experiences in STEM education through inquiry learning and provide a world-class university experience with Texas A&M University professors in STEM fields. Contact: Dr. Robert Capraro, aggiestem@tamu.edu; Website: <http://aggiestem.tamu.edu>

Broader Impacts Wizard—Walks you through all considerations for the broader impacts part of a proposal. Built for Ocean Science, but still helpful for thinking through the process of creating broader impacts activities for a project. Website: <https://aris.marine.rutgers.edu/wizard/index.php>

Engineering Access and Inclusion – This program, within the Engineering Academic and Student Affairs (EASA), is dedicated to the outreach, recruitment, retention, and professional development of historically

underrepresented students in engineering, i.e., African Americans, Hispanics, and Native Americans. The program seeks to promote the success of undergraduate and graduate students from underrepresented groups by creating supportive communities, providing infrastructure for student success, and designing high impact educational opportunities. Contact: Dr. Sonia Garcia, garcias5@tamu.edu; Website: <https://engineering.tamu.edu/student-life/access-and-inclusion/contact-us.html>

Halliburton Engineering Global Programs – This resource of the Engineering Academic and Student Affairs (EASA) supports the College of Engineering in transforming the undergraduate engineering education by providing high quality global programs to prepare students to be future leaders. This includes Exchange Programs, International Internships, International Field Trips, and Faculty led programs. There are several ways for faculty members to be engaged in this program. Contact: Dr. Maria Alves, malves@tamu.edu; Website: <https://engineering.tamu.edu/global>

Increase the Impact – Work with researchers and innovators in undergraduate STEM education to learn strategies for effectively sharing their work with others. How-To Guide and videos available at: <http://www.increasetheimpact.com/resources.html>; Website: <http://www.increasetheimpact.com/>

Physics and Engineering Festival – The Department of Physics & Astronomy at Texas A&M University invite the public to an entertaining and informative event with over 100 amazing, interactive physics demonstrations, specialized programs by age groups, and public lectures by prominent scientists and astronauts. Contact: festival@physics.tamu.edu; Website: <http://physicsfestival.tamu.edu/>

Power Writing Support Services – POWER provides motivational and instrumental support for graduate students' and faculty's academic writing. A select group of graduate students and faculty offer several services through POWER: Individual writing consultations (the "Power Hour"), writing and practicing in Writing Studios, and graduate-level writing productivity classes. Contact: Dr. Patricia Goodson, pgoodson@tamu.edu; Website: <http://power.tamu.edu>

Process Oriented Guided Inquiry Learning (POGIL) – POGIL uses guided inquiry—a learning cycle of exploration, concept invention and application—as the basis for many of the carefully designed materials that students use to guide them to construct new knowledge. Website: <https://pogil.org/>

Science Outreach – Science Outreach was established to stimulate interest and encourage careers in science, engineering and technology. It includes educational outreach programs for grades 6-12 and women's programs. Contact: Rhiannon Kliesing, outreach@science.tamu.edu; Website: <http://outreach.science.tamu.edu>