



STEM COLLABORATIONS & INITIATIVES

Activity Report: 2024–2025

Overview

The Office of STEM Collaborations and Initiatives (OSCI) was established in 2024 to advance excellence in STEM education and research through centralized leadership, coordination, and support services at Texas Woman's University (TWU). The office has made significant progress in developing its infrastructure, strengthening partnerships, and expanding outreach across TWU and the broader community. The OSCI website, launching in December 2025, will serve as a central platform to highlight TWU's STEM programs, partnerships, and opportunities for students, faculty, and external collaborators.

University Engagement and Visibility

OSCI's efforts have significantly elevated TWU's visibility in regional and national STEM networks. The office continues to engage with major collaborative initiatives, including STEMconnector, the STEMM Opportunity Alliance, BioNTX, the North Texas STEM+ Ecosystem, and Beyond 100K, reinforcing TWU's presence in conversations on inclusion, workforce development, and women's leadership in STEM.

STEMconnector. TWU's membership in [STEMconnector](#) supports OSCI's mission to expand inclusive, workforce-aligned STEM pathways and elevate TWU's national presence in STEM education leadership. Since joining in 2018, TWU has been featured in national forums, including Dr. Holly Hansen-Thomas's role as moderator at the 2025 STEMconnector Innovation Forum. Membership also positioned TWU for collaboration on NSF proposals and new partnerships, such as Project Lead the Way, expanding opportunities for students and faculty.



Figure 1. Snip from SOA website with TWU's logo

STEMM Opportunity Alliance (SOA). As an Alliance Partner (Figure 1), TWU contributes to the [STEMM Opportunity Alliance](#)'s national effort to ensure that all Americans, regardless of background or location,

BioNTX and iC³ Life Science Summit. OSCI supported TWU's [BioNTX](#) institutional membership (Figure 2) for 2025–2026 to strengthen regional connections within the North Texas bioscience community. The membership provides faculty access to professional development, networking events, and regional visibility through BioNTX communications, including recognition of TWU's *Washington Monthly* ranking. OSCI also sponsored the Women in Science Breakfast at the 2025 iC³ Life Science Summit, showcasing TWU's leadership in advancing women in STEM.



North Texas STEM+ Ecosystem. TWU served as founding members of the [North Texas STEM+ Ecosystem](#), launched in October 2025 to expand equitable, cradle-to-career STEM+ pathways across the region. The initiative brings together education, nonprofit, and industry partners to increase access to STEM and related fields such as medicine, data science, environmental science, and the arts. This partnership reinforces TWU's regional leadership in inclusive STEM innovation.

2

address persistent STEM teacher shortages. Dr. Michaine Ashley and Dr. Diana Elrod attended the Annual Summit in Chicago in October 2025. TWU's involvement strengthens its leadership in preparing and supporting future STEM educators while connecting its initiatives with national efforts to build an inclusive STEM workforce. Engagement in the 2025 Beyond100K Summit further amplifies TWU's voice in shaping collaborative strategies for systemic, equitable STEM education reform.

D CEO Women in STEM and Celebration of Women and Girls in STEM. TWU continued its leadership in women's STEM advancement through participation in the 2025 D CEO Women in STEM event at the Perot Museum of Nature and Science on February 11, 2025, where Provost Dr. Angela Bauer served as a featured panelist. TWU's involvement in the 2025 feature (Figure 4) and the upcoming 2026 profile further cements its reputation as a champion of women in science and technology.



Figure 4. TWU Faculty in D CEO Magazine



TWU's Celebration of Women and Girls in STEM. This major milestone, February 10–13, 2025, was a weeklong event aligning with International Women and Girls in Science Day and Texas Girls in STEM Day. The celebration featured interactive STEM activities, partnerships with NSF STAR, NSF PRIME, NSF SCALE, and ED ACCESS, and the assembly of STEM kits for all third-grade classrooms at Alexander Elementary.

Figure 5. TWU's Celebration of Women and Girls in STEM Logo

SHTEAM Punkins 2025. On October 14, 2025, OSCI also supported the TWU SHTEAM Punkins event, an interdisciplinary, family-friendly community celebration organized by the SHTEAM Punks faculty collaborative. Over 75 people attended including many non-TWU families. Dedicated to breaking down silos between Science, Humanities, Technology, Engineering, Arts, and Math, the event featured themed, hands-on stations such as 'Pumpkin Volcanoes' (Science), a 'Spooky Storytelling Corner' (Humanities), 'No-Carve Steampunk Decorating' (Arts), and 'Guess the Weight' (Math). The SHTEAM Punkins event exemplified OSCI's mission to promote inclusive, creative, and community-driven SHTEAM learning experiences.



Figure 6. SHTEAM Punkins Passport and Participants

Fashion Design and Merchandising Exhibition Opening. OSCI sponsored the October 9, 2025 exhibition opening reception for the Fashion Design and Merchandising Division's Scottish Rite Exhibition of Adaptable Garments for Children to support interdisciplinary innovation and strengthen TWU's partnerships in health, design, and community-centered initiatives (Figure 7). The exhibition highlighted the work of TWU fashion students who design adaptive clothing that promotes independence, comfort, and confidence for children receiving treatment at Scottish Rite for Children. This project embodies the integration of creativity, sciences, and problem-solving that OSCI seeks to advance. Sponsoring the event elevated student work, supported inclusive design education, and reinforced TWU's commitment to addressing real-world community needs.



Figure 7. Faculty and students at the opening reception

Building Partnerships and Community Engagement

Since its inception, OSCI has focused on building strong partnerships within the Denton Independent School District (DISD) to expand and strengthen K–12 STEM pathways. Working closely with Hill Elementary, Alexander Elementary, and soon Reeves Elementary (beginning in January 2026), all designated STEM schools, OSCI has created a series of interactive learning experiences that spark curiosity, build confidence, and foster a love of discovery among young learners. This collaborative effort is supported by the College of Professional Education and the College of Arts and Sciences, with Dr. Michaine Ashley of COPE providing invaluable guidance and partnership throughout the process.

Inclusive STEM Learning: Hydroponic Garden Project. In September 2025, Texas Woman's University, through the Office of STEM Collaborations and Initiatives, provided a vertical hydroponic garden for students in fully self-contained special education classrooms at Hill Elementary. This project, led by Dr. Diana Elrod and Dr. Michaine Ashley in collaboration with Principal Kascie Blough, was designed to create inclusive, hands-on STEM learning experiences for students with diverse learning needs. The garden introduces foundational concepts in plant science, sustainability, and observation-based inquiry while promoting sensory engagement and teamwork. All DISD STEM-designated elementary schools will be presented with a garden by May 2026. This initiative aligns with OSCI's mission to expand equitable access to STEM education and foster curiosity, confidence, and participation among all learners (Figure 8).



Figure 8. Hydroponic Garden Installation at Hill Elementary

Hill Elementary House Huddles - Fall 2025: The **First Hill House Huddle** of the 2025–2026 school year, held on September 12, featured six themed activity stations designed and delivered by TWU's School of the Sciences faculty – Dr. John Beatty (Chemex), Dr. Ann Davis (Inquisita), Dr. Diana Elrod (Astrona), Dr. Brandi Falley (Neuron), Dr. David Gardner (Codex), and Dr. Tina Gumienny (Geonova). Over 350 students and 50 teachers and other staff participated in this successful event (Figure 9).



Figure 9. House Huddle Participants and TWU Faculty at Hill Elementary

Second House Huddle - Wildflower Seeding Event

where students learned about native plant ecology and sustainability and made over 700 wildflower pollinator pearls. Each teacher received a copy of Dr. Camelia Maier's book "How to Make a Pollinator Garden". TWU faculty, staff, and students volunteered for this exciting event and assisted PreK through 5th grade students and teachers in this fully hands-on activity. TWU representation included Dr. Kelly Albus, Alana Taylor, Sheli



Figure 10. Wildflower Seeding Event Volunteers at Hill Elementary

Peterson, Omma Honey, Dr. Betsy Kaye, Kelly Finch, Dr. Ann Davis, Dr. Michaine Ashley, Dr. Diana Elrod, Jaci Cervantes, Yulissa Gasca, Kalina Logan, Dr. Camelia Maier, Dr. Maria Serrano, and Jenni Wojtasjek. Over 350 students and 50 teachers and other staff participated in this successful event in October 2025 (Figure 10).



Figure 11. Participants making Robot Hands at Alexander Elementary STEM Night

STEM Night at Alexander Elementary. At Alexander Elementary's STEM Night, TWU faculty led the building of 'Robot Hands' and exploring anatomy and engineering principles. Dr. Michaine Ashley, Alasdair Green, and Dr. Diana Elrod represented TWU at this event where over 50 people, often entire families, participated in making Robot Hands (Figure 11).

Teacher Appreciation Luncheons. These have occurred at both Hill and Alexander and have reached more than 150 teachers and staff, fostering collaboration and trust between TWU and local educators.

Looking Ahead

Building on its 2025 successes, OSCI will continue to advance its mission in 2026 by launching the official OSCI website, expanding the Women and Girls in STEM celebration across all TWU campuses, deepening partnerships with Denton ISD and other districts, implementing hydroponic gardens districtwide, collaborating with the Girl Scouts of North Texas, and sustaining national collaborations with STEMconnector, SOA, Beyond 100K, and others. Through collaboration, visibility, and impact, OSCI continues to serve as a catalyst for innovation, connection, and opportunity in STEM education and research across TWU and beyond.