STEMx
Annual Report
2023-2024

Prepared for The College of Natural Sciences
May 2024

The University of Texas at Austin
Office of STEM
Education Excellence
College of Natural Sciences

A Message From the Director

The Office of STEM Education Excellence (STEMx) began in January 2023 as a reenvisioning of the Texas Institute for Discovery Education in Science (TIDES). This is the first of (hopefully) many STEMx annual reports and it seems appropriate to take a moment to reflect on our first 18 months, collect our thoughts, and coalesce on goals for the future.

STEMx is first and foremost a change agent. It is a hub for teaching innovation in the College of Natural Sciences. STEMx and its people are dedicated to promoting excellence in undergraduate STEM education by working with CNS departments and instructors to catalyze a college-wide culture shift that revolves around improvement, community, and positive impact at scale.

Aiming for improvement, by definition, requires trying new things, assessing impact, and iterating. Being in the improvement space is exciting - you get to think about what could be, rather than what is! You get to innovate and discover what works. You get to experience the sense of pride that comes from knowing your new and improved knowledge, attitudes, and behaviors will help your students thrive and become the best scientists and mathematicians they can be. Aiming for improvement can also be discouraging. Not all innovations are positive, some may totally flop. Some changes may take more effort than you predicted. It may take a long time to see the impact you are expecting.

I want to let you know that, through it all, STEMx is here for all instructors and departments in CNS. We are here before you start to help you identify impactful areas of change and act as sounding boards as you plan. We are here to celebrate your successes with you, help you share your work, and support you in telling your improvement story. We are also here for you when things do not go so well, whether you need a shoulder to cry on or a thought-partner as you fix the problem for next time. We've all had those times in our own teaching. We hope you will reach out when you are ready to try something new in your teaching or mentoring practice.

Each of the next pages focuses on one STEMx program or activity and is presented in four parts - a brief program description, a visual summary of data, insights gained from experience, and goals for the future. I hope you enjoy this integrated view of what STEMx does, organized to emphasize why we do it - to support a collaborative, impactful culture of improvement in CNS that results in excellent educational experiences for all of our students and a healthy work environment for all of our instructors.

Best wishes,

Kristin W. Patterson

Kristin D. Patterson
Assistant Dean for STEM Education Excellence
Associate Professor of Instruction, Biology Instructional Office

STEMx Initiatives at a Glance

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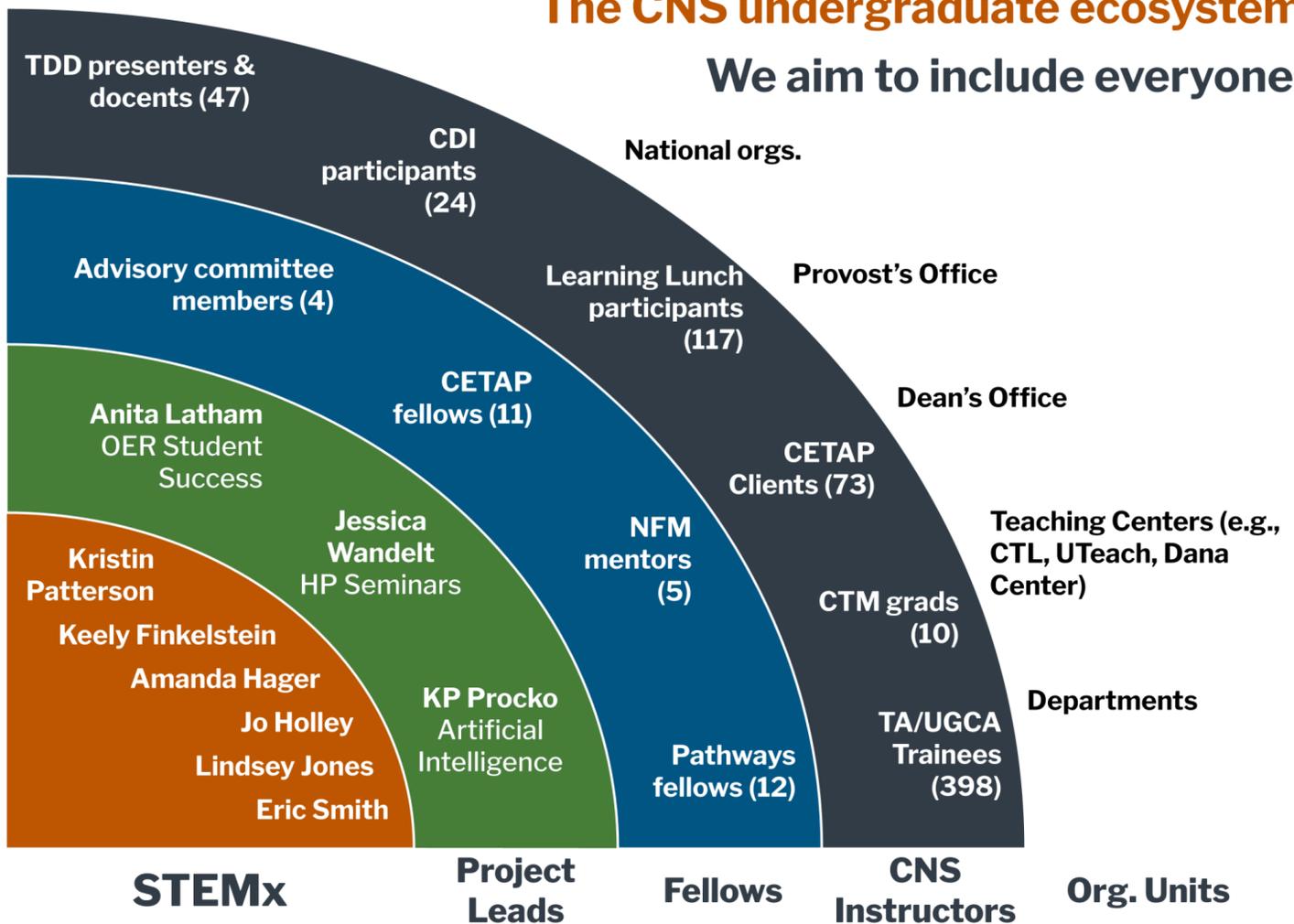**p22** Academic Technology

STEMx Priorities

We value undergraduate teaching as a joyful, scholarly part of instructors' work and a crucial service to society. We empower educators to continually improve their courses, departments, and all of UT.

STRATEGIC ALIGNMENT

STEMx supports the college's strategic focus on community, discovery, and impact at scale by embracing a scholarly approach to teaching and building community across our five portfolio areas: professional development in teaching, teaching assessment, professional development in mentoring, education research and grants, and special projects, such as (re)design for high-impact courses. STEMx is intentionally set-up to be flexible and responsive to the changing landscapes and priorities in departments, CNS, UT, and beyond.

The CNS undergraduate ecosystem
We aim to include everyone!

TDD presenters & docents (47)

CDI participants (24)

Advisory committee members (4)

Anita Latham OER Student Success

CETAP fellows (11)

National orgs.

Learning Lunch participants (117)

Provost's Office

Dean's Office

CETAP Clients (73)

Kristin Patterson
Keely Finkelstein
Amanda Hager
Jo Holley
Lindsey Jones
Eric Smith

Jessica Wandelt HP Seminars

KP Procko Artificial Intelligence

NFM mentors (5)

CTM grads (10)

Teaching Centers (e.g., CTL, UTeach, Dana Center)

Departments

TA/UGCA Trainees (398)

Pathways fellows (12)

STEMx   **Project Leads**   **Fellows**   **CNS Instructors**   **Org. Units**

Our Team

Kristin Patterson
Associate Prof of Instruction
Assistant Dean for STEMx
Director & Special Projects

Keely Finkelstein
Associate Prof of Instruction
Faculty Assistant Director for
PD in Teaching

Amanda Hager
Associate Prof of Instruction
STEM Education Fellow
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Jo Anne Holley
Associate Prof of Practice
STEM Education Fellow
PD in Mentoring

Lindsey Jones
Instructional Technology
Specialist
Microcredentials, OER, Canvas

Anita Latham
Associate Prof of Instruction
Mindset Matters for Student
Success (MM4SS)

Kristen Procko
Associate Prof of Instruction
AI Courses, Grants, Events

Eric Smith
Research Associate
STEM Education Fellow
Pathways Grants & Community

Jessica Wandelt
Associate Prof of Instruction
STEM Education Fellow
UGCA Programming

A Culture of Improvement

We envision a college culture where all instructors are continuously improving their teaching and supporting each other in that work.

Course Design Institute (CDI)

The STEMx Course Design Institute is a two-day workshop open to all College of Natural Sciences faculty who would like support in designing or redesigning a course. The workshop is based on "backward design" principles. It provides opportunities for participants to highlight the purpose of their course and goals for student learning, and then develop plans for assessment and instruction that align with the purpose and goals. In addition, CNS faculty form closer connections with colleagues who are navigating similar teaching environments. The CDI has been offered in CNS every year (1-3x per year) beginning in Summer 2018.

11 CDI workshops were offered in 2018-2024; 1-3 times per year

244 Unique faculty participants represent 14 CNS departments and eight other UT programs or offices

91 Faculty members have attended a CDI more than once

Backward Course Design

1 Establish Outcomes
Describe students' new knowledge, skills, attitudes, and behaviors

2 Plan Assessments
Choose data to gather that will measure student progress toward outcomes

3 Create Instructional Experiences
Help students achieve outcomes via activities and content

4 Write Syllabus
Communicate structure and engage students

INSIGHTS

- The CDI reinforces the University's Course Clarity Project by aligning assessments and instruction with learning outcomes.

- CDI special topics keep the CDI fresh and bring in expertise on timely themes, such as alternative grading, AI in teaching, and building community.

- Faculty participants report enjoying the CDI, including the didactic components, but especially the guided time to work on their own courses.

GOALS

- Collect information from CNS faculty, departments, and leadership to better understand teaching professional development needs.

- Articulate a cohesive purpose, targeted audience, and sustainable plan for teaching professional development.

- Modify the CDI as needed to meet the needs of CNS instructors.

Mindset Matters for Student Success

Mindset Matters for Student Success (MM4SS) builds upon the Texas Mindset Initiative Faculty Fellowship which was created in partnership by STEMx and the Texas Behavioral Science and Policy Institute. MM4SS engages experienced instructors in adapting research-based learning mindset interventions for their specific teaching contexts. The partnership between skilled STEM instructors and behavioral science researchers aims to create learning environments that support students' success in meeting appropriately high standards. We are building and publishing easy-to-use professional development resources to improve instruction and outcomes for students.

In August 2023, STEMx began partnering with the Texas Interdisciplinary Plan (TIP) to offer a pilot of this innovative professional development experience. A cohort of instructors specializing in teaching TIP scholars participated in the workshop experience in May 2024 and will implement changes in their instructional practices over the Fall 2024 semester.

To experience and interact with empirical evidence...

...Mindset Fellows hear presentations from experts and read selected articles that relate behavioral science research to gaps in STEM student outcomes.

**To solve problems and discuss complexities in diverse groups...**

...Mindset Fellows develop individual and shared understanding with colleagues, behavioral scientists, and STEM pedagogy experts while discussing diverse points of view.

To connect content to personally relevant problems...

...Mindset Fellows identify problems in their practice and develop interventions toward creating educational environments in which students and instructors thrive.

To reflect on and critically assess their own progress...

...Mindset Fellows engage in iterative cycles of planning, feedback, reflection, and revision of interventions for their classes.
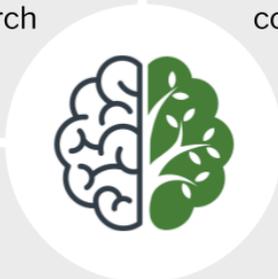
GOALS

- Execute the Mindset Matters fellowship in 2024 in partnership with the Texas Interdisciplinary Plan (TIP), with an integrated cohort of 16 faculty and staff who work with TIP students.

- Develop standard, concise evaluation instruments that can be deployed during any iteration of the Mindset Matters fellowship and used to compare effectiveness.

- Measure the outcomes of different iterations of the Mindset Matters fellowship (eg. department-, program-, and conference-specific mindset fellowships), which may identify essential features for fellowship success.

- Expand and promote the Mindset Matters library of practices, professional development experiences, and facilitation guide.
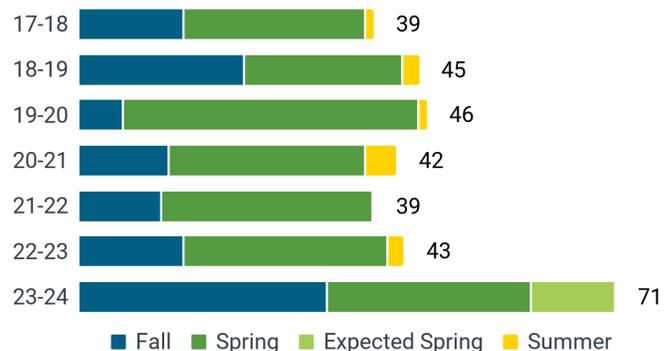
CNS Expert Teaching Assessment Program (CETAP)

The CNS Expert Teaching Assessment Program (CETAP) promotes a culture of continuous improvement of teaching across the college via peer-to-peer coaching. A CETAP assessment consists of a pre-observation consultation, review of course materials, a class observation, a post-observation consultation, and written documentation of evidence in a standardized report format. The CNS "external evaluation" initiative is currently in its seventh year of existence and is in its second year as a fellowship. This year, two departments sent faculty teams to the training workshop, and they will subsequently lead committees charged with improving peer-review processes in their departments.

150% — **2023 Increase in fall semester assessments** due to collaboration with Dean's Office staff.

275 — **Unique instructors observed,** 315 assessments completed to date (2017-2024).

11 — **CETAP fellows** currently working with the program with 8 CNS departments represented.

Teaching Assessments Completed

Year	Total
17-18	39
18-19	45
19-20	46
20-21	42
21-22	39
22-23	43
23-24	71

Legend: ■ Fall ■ Spring ■ Expected Spring ■ Summer

INSIGHTS

- Reception from instructors (via survey) has been uniformly positive, with clients commenting that the process was more collegial and that they got a higher number of ideas for future change from the experience.

- 50% of 2023-2024 cases are urgent e.g., review required for promotion within the next 12 months. Faculty going up early or with years in rank at other institutions and professional-track faculty with more than 10 years in rank are common causes of urgent cases.

- Recent changes in P&T processes pose a threat to the program. Some professional-track faculty members may be applying for promotion without reviewer letters, meaning that peer observations of teaching may require more summative assessment or evaluation in them. This may erode the collegial coaching approach that is a hallmark of this program.

GOALS

- Scale CETAP so faculty may request our services whenever they have a concern, and we are able to visit early-career faculty members twice before their first promotion rather than once.

- Increase visibility of the initiative across the college via presentations at departmental faculty meetings, website updates, and promotion from others.

- Pioneer the use of AI for processing and summarizing student comments in Course Evaluation Surveys.

"Probably about most useful set of suggestions on my teaching that I've ever received."

— CETAP client

Foundational Teaching Assistant Training

The Foundational Teaching Assistant Training programs provide essential training for new and returning teaching assistants, both graduate and undergraduate. Training focus areas include: Role of a Teaching/ Course Assistant, Noticing Students and Resources to Support Students, Difficult Scenarios + University Policies & Procedures, How People Learn, Teaching ALL of our Students, Time Management, and Strategies for Active Learning / Student Engagement. These in-person synchronous trainings are offered every semester to both groups, and first began in Fall 2019.

1900+ Students participating (Fall 2019 - Spring 2024).

15 CNS Departments represented

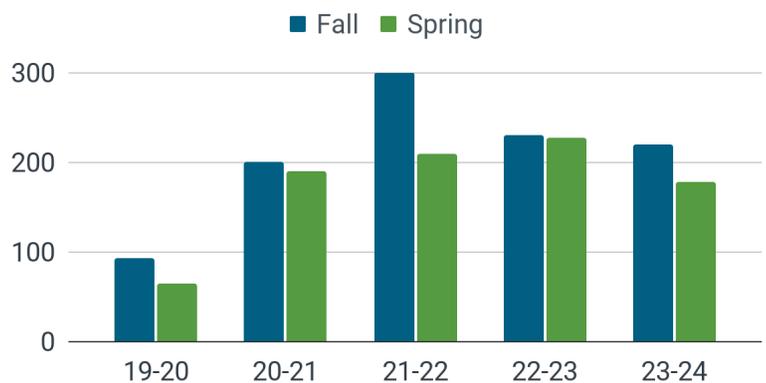**6** STEMx Faculty / Staff assisting with content creation & workshop facilitation.

INSIGHTS

- Participation remains high after many years of the program being offered. The program provides an overview and timely training materials for first-time teaching assistants. It can supplement existing TA or peer learning assistant / course assistant programs that exist in some departments.

- This year, training materials and resources were customized for TAs and UGCAs and minor updates were made to comply with SB17.

- Information and feedback from CNS stakeholders including department reps / program leads and College Graduate Education leadership has been gathered and has helped shape changes and improvements to trainings.

GOALS

- Bring together CNS partners who work in areas of more extensive UGCA and Peer Learning Assistant training; this might include starting a Learning Community around this topic.

- Increase sharing of resources across college initiatives, e.g. Pathways seminars, department-level UGCA training and mentoring courses.

TA / UGCA Training Participation

Legend: ■ Fall ■ Spring

Year	Fall	Spring
19-20	~93	~65
20-21	~200	~190
21-22	~300	~210
22-23	~230	~228
23-24	~220	~178

"Reflecting on my previous classes, these different types of activities have been utilized quite frequently in my STEM courses. The activity that stood out to me was peer discussion; it is one of my favorite in-class activities as it fosters belonging and one's confidence in a classroom ."

- UGCA Training Participant

Professional Development in Mentoring

Successful mentorship experiences are indispensable for training future leaders. Mentoring expertise enables mentors to tailor skills for a range of mentees with varied short-term and long-term career goals. Using research-backed techniques, we are developing a series of programs and accessible tools to enable faculty, graduate students, and undergraduate students to engage in meaningful and productive mentorship relationships resulting in increased productivity and a healthy environment.

Target areas of support for mentor and mentee growth through learning opportunities and resource development.

Mastering Mentoring

1 Discover
Mentoring tools, positive behaviors, and distributed support networks

2 Engage
Quality mentoring experiences, individualized for mutual benefit and productivity

3 Evaluate
Assessment, reflection, accountability, next steps

INSIGHTS

We developed a framework (above) to support CNS researchers based on the scholarly mentoring literature highlighting the following :

- Mentors and mentees both benefit from coaching designed to increase positive experiences and avoid negative ones.

- Successful mentoring behaviors can be learned and applied, for example: setting expectations, aligning goals, culturally sensitive practices, and professional development.

GOALS

- Adapt the NSC 088M Mentoring Undergraduate Research course to scale for greater participation by graduate students and postdoctoral research and spread to additional audiences.

- Propose a cohesive support system for improving mentor/mentee relationships among all groups. For example, bring mentors and mentees through a series of workshops to help them develop mentoring relationships that are individualized, mutually beneficial and productive, with all parties actively participating.

- Develop a plan for evaluating mentorship contributions and mentee agency at all levels.

10 Graduate students and postdoctoral fellows enrolled in "Mentoring Undergraduate Researchers" NSC 088M

23 Participants at the Learning Lunch: "Practices to support undergraduate persistence in research"

Building Community & Sharing Ideas

We promote conversations about teaching and connections between faculty, staff, and student instructors as a routine part of daily life.

Learning Lunches

STEMx partners with UTeach to bring CNS faculty together for research presentations and workshops on timely subjects in teaching and learning. These are one-hour entry points to gather over lunch, learn from peers and presenters, and take something away to use in teaching.

117 **Faculty participants** in at least one synchronous lunch during 2023-2024.

30 **Average participants per lunch** (min = 16, max = 50).

14 **CNS Departments and programs represented** with a mix of 26% tenure stream and 58% professional track faculty.

INSIGHTS

- Being able to attend a one-hour workshop or event that worked within busy schedules was appealing to many faculty. Faculty also appreciated the mix of research talks and more hands-on workshops or discussion-based sessions, along with having a mix of external invited speakers and local UT speakers.

- We experimented with different days and times for the lunches in order to accommodate as many schedules as possible. While modestly successful, we continue to strive in finding the right balance.

GOALS

- Develop a planning committee for future Learning Lunches, including faculty members beyond the STEMx and UTeach core leadership.

- Solicit varied and robust feedback from faculty and department leaders about how to best serve faculty needs around professional development in teaching and learning.

- Build a complete system for collecting RSVPs, connecting with electronic calendars, and sending automated reminder emails, possibly using Smartsheet.

23-24 Lunch Topics

The dark side of development:
When mentoring is problematic and what to do about it
Erin Dolan

Mentor mindset:
The science of engaging young people in CNS courses
David Yeager

AI100:
The one hundred year study on AI
Peter Stone

Compassion without chaos:
How to balance flexibility with accountability
Kristin Patterson

Peer Learning Assistant programs:
Practical applications
Jonathan Perry & Stacy Sparks

Teaching in the age of AI
Kristin Procko

Reflecting on Peer Instruction implementation in STEM college classrooms
Chandra Turpen

Peer instruction without peer
Michael Marder

Practices to support undergraduate research persistence in labs
Jo-Anne Holley

Teaching Discovery Days

Teaching Discovery Days (TDD), which started in 2016, is an annual event in CNS that brings faculty together to showcase and celebrate teaching excellence college-wide and to encourage sharing among participants around best practices and new ideas in STEM teaching and learning. Colleagues open their classroom doors to small group visits and observations, followed up with networking and discussion. During TDD, the college also recognizes faculty members who have had a positive influence on the educational experience of our students.

Faculty have a variety of opportunities to participate in TDD, from opening up one's own classroom, serving as docent, having the chance to sit in on a colleague's class and chat with others, and finally coming together to celebrate teaching excellence!

Between 2019-2023:

155 Classrooms visited

440 Total participants

40% First time participants each year, on average.

100 Faculty volunteer docents

INSIGHTS

- The second floor conference room in WCH was a popular centralized hospitality location for the post-observation discussions- an improvement over the O's lunch vouchers which were discontinued.

- A faculty-led TDD committee brings innovative ideas into TDD events. Advance planning is needed to execute on ideas from changing how swag is distributed to expanding TDD to include graduate teaching.

GOALS

- Engage the faculty-led TDD committee earlier in the planning process.

- Increase percentage of participants giving feedback by exploring alternatives to post-event surveys.

TDD Overall Satisfaction (2019-2023, n=84)

- Extremely Satisfied
- Somewhat Satisfied
- Neither Satisfied nor Dissatisfied
- Somewhat Dissatisfied
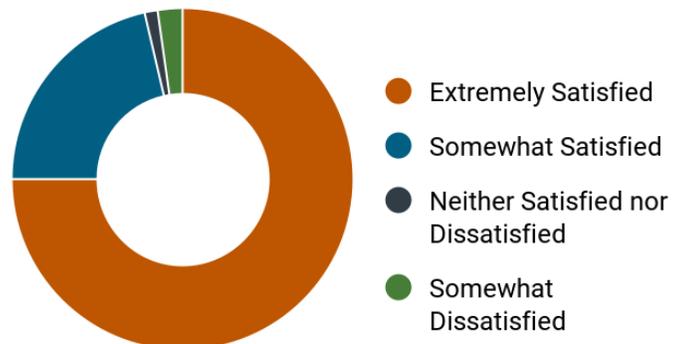
Mentoring for Success in Teaching

This program aims to help new faculty learn how to tap into campus resources, connect with community, explore new ideas and practices around teaching, and discover new teaching tools. All new faculty in the college (tenure-stream and professional track) are invited to participate in the teaching mentoring program and collaborate with experienced faculty mentors. The mentors were drawn from different departments (Chemistry, Computer Science, Mathematics, Molecular Biosciences, Nutritional Sciences, and Physics) and different career tracks.

INSIGHTS

- The faculty mentors are enthusiastic about working with new faculty across CNS.

- To address the challenge of connecting with new faculty, we changed the program's overall structure between years 1 and 2 (see details below). Making connections is still an ongoing challenge that we are trying to determine the best approach for.

- One successful product of this program is a Canvas site, designed as a one-stop teaching resource, that was co-created by all faculty mentors to share with all new faculty: CNS New Faculty Resources.

- Different mentoring groups might need to choose different strategies based on what works for individuals in the group, including availability and meeting cadence.

APPROACH

- Year 1 (22-23): New faculty interacted with mentors in monthly full-cohort meetings for networking, and discussions on teaching topics, such as syllabus writing, writing learning goals, and effective student engagement strategies.

- Year 2 (23-24): Model changed to one large group kick-off meeting, coupled with mentors meeting 1-2x per semester with individual or small groups of new faculty informally + attending teaching related events together.

34 New faculty participated by either attending at least one meeting and/or meet-ups with mentors.

12 CNS Departments or Programs represented through new faculty participants and faculty mentors.

6 Faculty mentors from Fall 2022 - Spring 2024.

GOALS

- Continued and increased collaboration with CNS Faculty Affairs to provide support and professional development for new faculty.

- Identify needs of new faculty with respect to teaching, and provide resources and support in a timely and useful manner. For example, depending on need, we may build out a nascent Canvas resource for new faculty.

- Robustly supporting new faculty in terms of a broad professional development portfolio; look at both internal and external ways to support faculty.

Pathways Grants

The Pathways Grants program promotes faculty-driven projects that address on-the-ground issues in STEM undergraduate education. Pathways is a funding mechanism to support CNS tenure stream, and professional-track faculty as they introduce new teaching methods in their courses or expand their leadership in undergraduate education.

INSIGHTS

- The second Pathways application process was scaffolded to include a letter of intent and an application mentor to improve proposal quality and reduce post-review modifications for efficient funding decisions.

- Common themes identified in proposals are promising opportunities to build collaborative projects. Examples of common themes are ethics in mathematics, career exploration and preparation, and building communities of practice.

- Some Pathways community members are interested in more robust collaborations on conference presentations, manuscripts, and grant proposals.

$117k

Total awards
distributed to **15** awardees conducting **7** Pathways Projects in 2023-2024

85%

Grant recipients
participating in each monthly community meetings

Word cloud of all Pathways grant proposals received in Spring 2023 & 2024

GOALS

- Restructure the proposal and review timelines to allow new projects to begin in the summer, rather than fall, with the goal of aligning with faculty availability and financial need.

- Develop processes to connect similar projects where collaborations would be mutually beneficial and identify common resources that would be relevant to recipients.

- Increase representation of faculty applicants across departments and tracks through targeted recruiting, lowering perceived barriers, and more clearly presenting the value of receiving Pathways support.
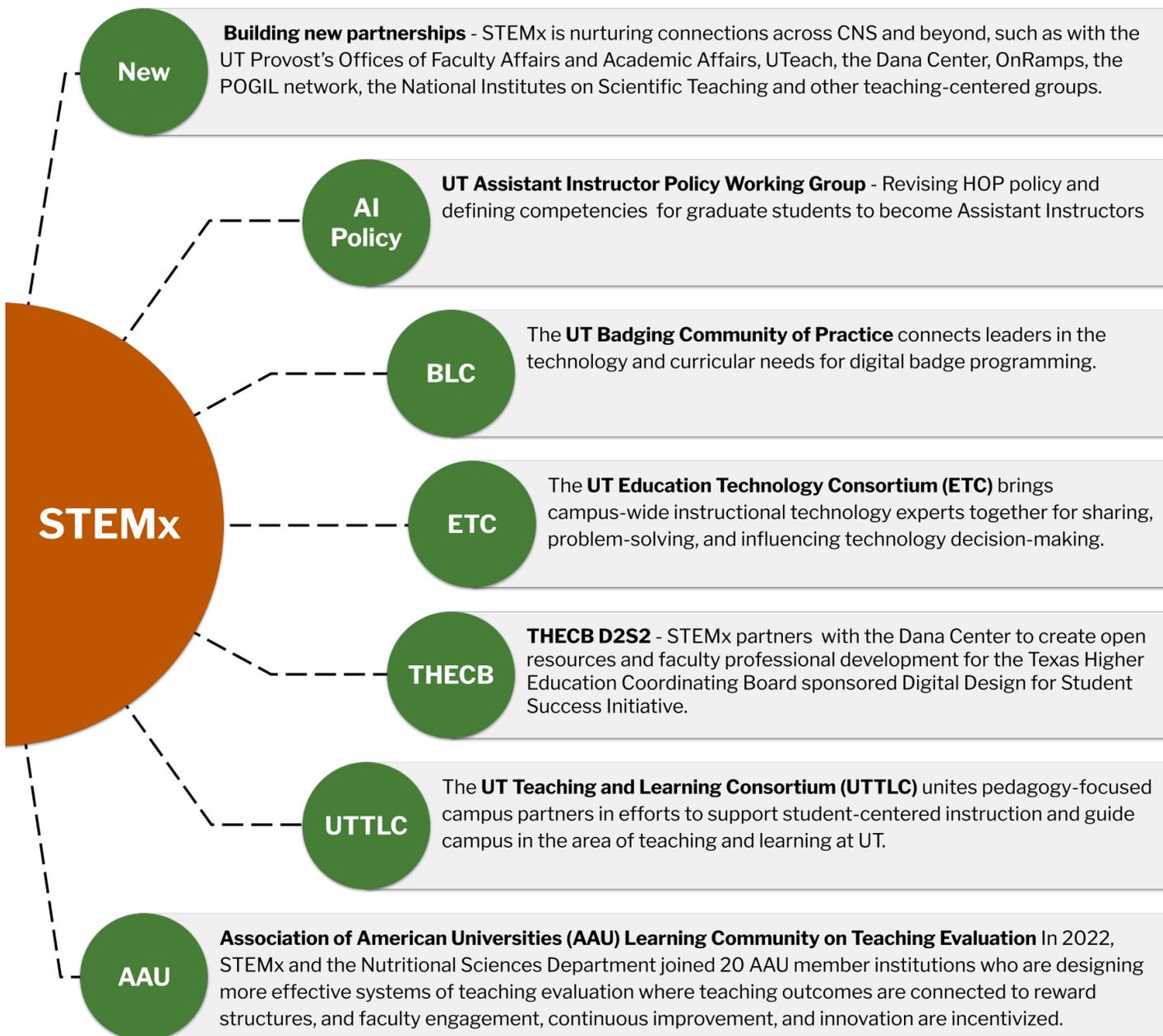
Campus Connections

STEMx bridges faculty-facing efforts and student outcomes through partnerships in CNS, across campus, and beyond.

Partnerships & Policy

STEMx represents the College of Natural Sciences on committees and working groups related to teaching, mentoring, and education technology. Connection with these groups affords opportunities to break-down barriers and influence policy through regular two-way communication, sharing resources, and developing relationships across campus and beyond.

STEMx

New — **Building new partnerships** - STEMx is nurturing connections across CNS and beyond, such as with the UT Provost's Offices of Faculty Affairs and Academic Affairs, UTeach, the Dana Center, OnRamps, the POGIL network, the National Institutes on Scientific Teaching and other teaching-centered groups.

AI Policy — **UT Assistant Instructor Policy Working Group** - Revising HOP policy and defining competencies for graduate students to become Assistant Instructors

BLC — The **UT Badging Community of Practice** connects leaders in the technology and curricular needs for digital badge programming.

ETC — The **UT Education Technology Consortium (ETC)** brings campus-wide instructional technology experts together for sharing, problem-solving, and influencing technology decision-making.

THECB — **THECB D2S2** - STEMx partners with the Dana Center to create open resources and faculty professional development for the Texas Higher Education Coordinating Board sponsored Digital Design for Student Success Initiative.

UTTLC — The **UT Teaching and Learning Consortium (UTTLC)** unites pedagogy-focused campus partners in efforts to support student-centered instruction and guide campus in the area of teaching and learning at UT.

AAU — **Association of American Universities (AAU) Learning Community on Teaching Evaluation** In 2022, STEMx and the Nutritional Sciences Department joined 20 AAU member institutions who are designing more effective systems of teaching evaluation where teaching outcomes are connected to reward structures, and faculty engagement, continuous improvement, and innovation are incentivized.

Artificial Intelligence: Literacy, Practice, Application

As conversations about the impact of Artificial Intelligence (AI) become mainstream, educational practices need to keep up. By supporting CNS Artificial Intelligence (AI) projects, we are helping to shape university-wide educational initiatives. From curriculum design for new AI literacy courses to support for projects that promote AI practice in teaching and research, STEMx is helping UT remain a leader in the age of AI while preparing students for the future.

715 **Students and auditors** deepened their AI literacy through CS 109: The Essentials of AI for Life and Society

7 **AI education projects funded** through the Pathways special solicitation for AI in Education

2 **AI Literacy Courses** being developed and assessed

INSIGHTS

- Among auditors of CS 109, all Colleges were represented, demonstrating broad interest in AI literacy.

- CS 109 improved participants' AI literacy, according to self-reported learning in a retrospective pre-/post-survey.

- Work is needed to level set materials to serve a broad audience in future AI literacy courses.

- Examples of Pathways AI projects included classroom activities and the use of AI in computer science research projects.

- Presidential initiatives like the Year of AI are an avenue for educational transformation.

Legend: ■ Before AI course   ■ After AI course

Categories:
- I can describe how AI affects my daily life.
- My understanding of AI makes me well-equipped to apply it to
- I can evaluate news stories about AI.
- I am literate about the societal implications of AI.

AI course participants rated their ability to perform tasks related to AI literacy before and after the course (1= strongly disagree and 5 = strongly agree).

GOALS

- Involve students in AI-related projects like hackathons, experiential learning programs, and classroom activities.

- Engage more CNS faculty in creative uses of AI through a second round of Pathways AI grants this fall.

- Support the design and assessment of a three-credit AI literacy course that will be integrated into the Core Curriculum.

- Share student and faculty achievements through a fall event celebrating AI.

> "As a young adult I haven't exactly experienced a technological disruptor in a mature state of mind... observing the widespread impacts of AI initially made me fearful. This class...helped put my mind to ease... that technological disrupts have occurred in the past and it's best to embrace AI in its potential for advancement."
> — CS 109 Student

Innovation at Scale

We leverage our context that juxtaposes a large undergraduate population with a world-class STEM research enterprise to discover how to promote excellence in undergraduate STEM education at scale.

High Impact Course Designs

Right: BIO 206L students with Violet, an antibiotic resistant strain of bacteria they discovered in soil they collected at the Lady Bird Johnson Wildflower Center.
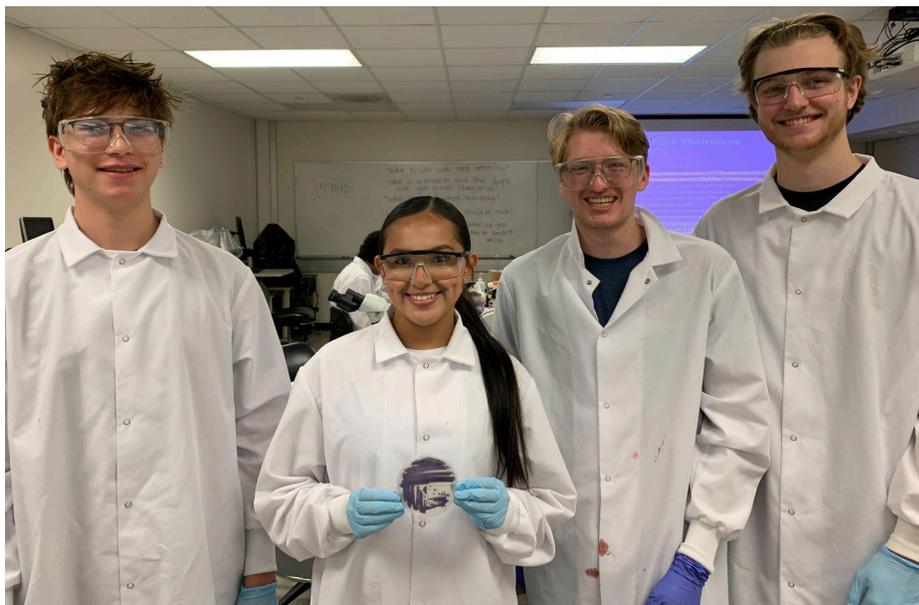
Introductory Biology Lab Redesign: The BIO 206L curriculum was overhauled into the largest ever course-based undergraduate research experience (CURE) for close to **800 students per semester**. After careful planning, purchasing equipment, receiving safety approvals, joining with UT field stations, and writing course materials, the new lab, adapted from the Tiny Earth curriculum, was offered at full scale in Fall 2023 to great success. Students presented at conferences and contributed to research on antibiotic resistance. Ideation for scholarship and dissemination is underway.

General Chemistry Lab Redesign: The general chemistry lab course was redesigned to make two 1-credit labs to improve the student experience, incorporate research methods, align labs with the lecture topics, and increase cost effectiveness. **The Spring 2024 pilot of 240 students will be expanded to over 4000 students in Fall 2024**, This will be the highest enrollment lab on campus and will serve as a model for cost effective, hands-on learning.

Essentials of AI for Life and Society: At the leading edge of the AI revolution, a partnership between STEMx, Computer Science and Good Systems resulted in development of a non-technical AI literacy course for **715 students and auditors** across campus. In fall 2024, the redesigned course will emphasize active learning, student interaction, and practical experience with ethical AI in the real-world. It is under consideration for the core in Fall 2025.

Health Professions Pathways: To better prepare UT undergraduate students for the shifting career landscape, this series of three seminars is bringing high quality and multidimensional career preparation to the thousands of University of Texas students interested in a health professions career. The pilot seminar enrolled **275 students, from eight colleges and 24 majors**, who are considering 13 different health professions.

3000 **Learners** enrolled in pilots of new or redesigned high-impact courses.

4 **New or redesigned courses** developed, piloted, and assessed in 23/24.

3 **Additional courses** in development for 2024/2025 pilots.

CNS Foundations: This seminar for CNS first semester students will be offered for the first time in Fall 2024. During this course, students will practice solving problems using scientific approaches, use resources in appropriate ways, build community, associate characteristics of STEM professionals with their values and skills, and explore unfamiliar career paths.

Academic Technology

For the first time, the College of Natural Sciences has a dedicated position for instructional technology design and support. Initial conversations are underway to define the strategic priorities and scope of work for this position in order to maximize impact. Ultimately, we want the role to align with the CNS strategic goals: community, discovery, and impact at scale. To date, we are focusing on using the position to promote educational innovation and scale through implementing microcredentials, supporting dissemination in open education resources (OER), and building high-impact course designs in Canvas.

INSIGHTS

Microcredential Technology Support

- Piloted supervisory organization
- Created 21 Canvas Credentials
- Implemented 4 Canvas Credentials Pathways

Open Education Resources

- Worked with content creators to publish resources to OERTX
- Collaborated with the THECB OER team

Canvas Support for High Impact Courses

- Fall 2024 CS 309 Essentials of AI
- CNS Foundations for first-year students
- Health Professions Pathways seminars

- STEMx is connected to the University technology community through the education technology coalition (ETC) and the badging learning community.

- Student workers can support academic technology implementation when given instructions and guidance from STEMx.

- STEMx is connected with the Texas Higher Education Coordinating Board and OnRamps through the Digital Design for Student Success project that involves producing and disseminating student success resources and instructor professional development on an open education platform.

- Academic technology support for workflow management and website design will increase STEMx efficiency and help us communicate about the nature and scope of our work with CNS, the University, and external stakeholders, such as prospective faculty and funders.

GOALS

- Define priority areas of effort (e.g., technology for high-enrollment courses) and build expertise through professional development.

- Integrate this position into CNS academic technology decision-making processes.

- Ideation and planning for providing academic technology support directly to CNS instructors in ways that scale, e.g., Canvas templates.