





Housekeeping

1. **Recording** – This event is being recorded. This main room presentation will be recorded but the breakout rooms will not be recorded.
2. **Audio** – Please leave microphone on mute. Individuals can enable closed captioning in the bottom toolbar.
3. **Breakout Room** – During the breakout session, turn your camera on, if available, to enable discussion and engagement.
4. **Q&A** – Please use the Q&A section for any questions. Chat will not be monitored for questions. Any questions collected here but not answered during event will be reviewed and answered afterwards.
5. **Chat** – Chat will be used to share information with attendees and can be used for attendees to chat with each other. We encourage you to share comments and talk to each other in this area.



**SUNY Civic Learning and Civic Engagement
Fall 2024 Online Series**



Dr. Ram Ramasubramanian
Executive Vice Chancellor for Academic Affairs and Provost



Civic Education and Engagement and Civil Discourse Fellows

- Gather and amplify civic engagement resources
- Provide learning opportunities for faculty and staff
- Participate in a General Education working group
- Coordinate with student government
- Develop a community of practice
- Contribute to a SUNY civic education convening
- Inform a civic engagement strategic plan



SUNY Civic Learning and Civic Engagement Fall 2024 Online Series

STEM Education IS Civic Education

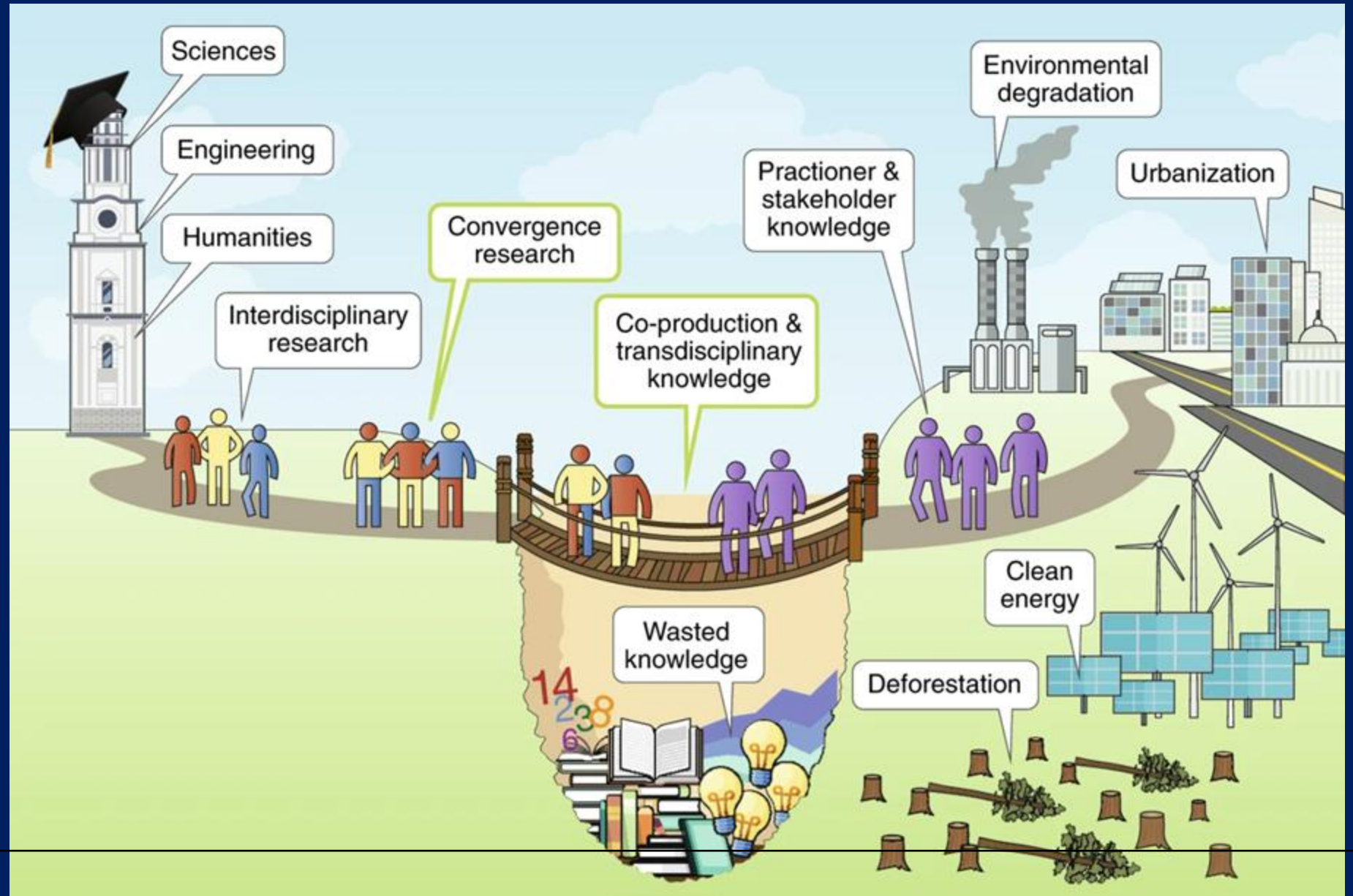
Dr Nirav S. Patel, Assistant Professor

Connecting STEM education to Civic Discourse



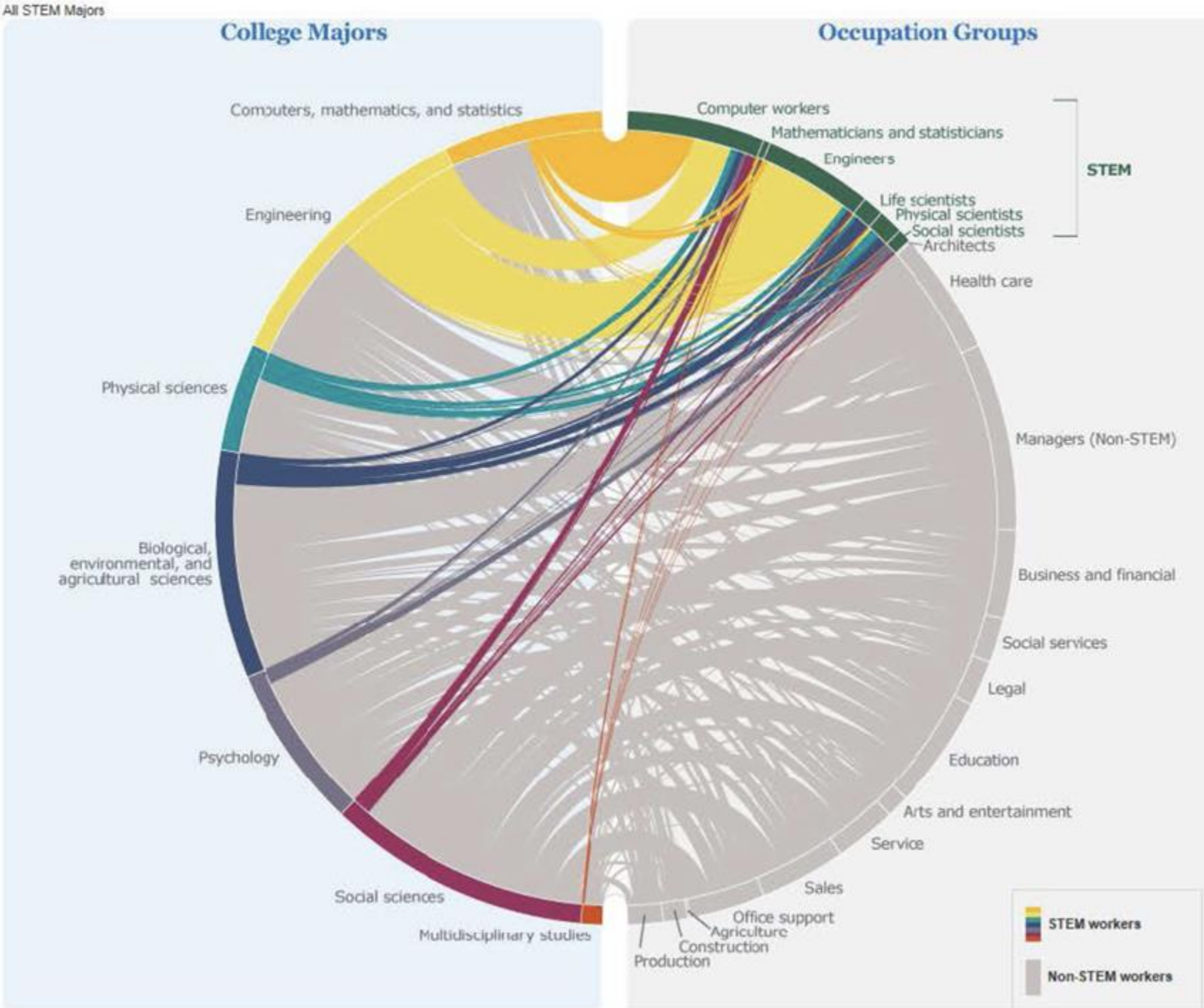
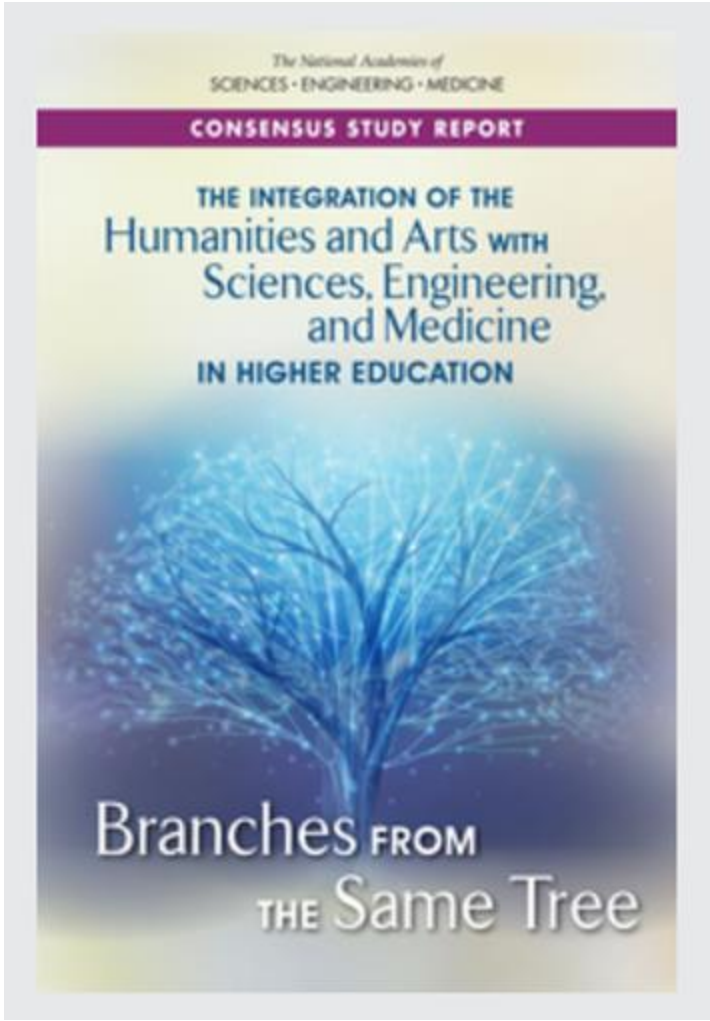
Dr Nirav S. Patel
October 01, 2024

Higher Education



Source: Irwin, E. G., Culligan, P. J., Fischer-Kowalski, M., Law, K. L., Murtugudde, R., & Pfirman, S. (2018). Bridging barriers to advance global sustainability. *Nature Sustainability*, 1(7), 324-326.

Underlying Motivation





The preparation of future scientists, the technical workforce, and informed citizens will require continued transformations of the ways we approach STEM teaching and learning.



Flexible, student-driven, and collaborative approaches, linked to communities of practice (CoPs) with a focus on civic engagement, lead to better student learning and retention.



STEM education would lend itself to an improved student well-being.

STEM Skills
are
important
but
specifically
which skills?



Intentional STEM Skills engagement can only occur with civic engagement



Evidence-based approach on skill retooling through civic discourse.



The proposed curricular framework utilizes five overarching concepts leading to transdisciplinary innovations.

Teaching STEM Civic Discourse and Engagement

Student Centered
Teaching and
Learning

Focus on skills
engagement
(i.e., non-cognitive
skills)

Community-Engaged
Teaching

Formalize Service
Partnerships with
Community
Organizations

Informal
Intergenerational
learning



Examples of Civic Discourse and Linkages to STEM curriculum

Waterfowl
Hunting and
Conservation
Science

Linking to
environmental arts
through Duck
Stamp contest.

Understanding
PFAS and local
food as well as
hunting as a
conservation tool.



Civic Discourse and Linkages with STEM curriculum

Waste Water
Treatment
Plant
and
Pollution

Physics of Mass
Flow and Fluid
Dynamics

Waste water
treatment staff
and STEM
education.

Energy Behavior
and Community
Acceptance (GIS)





Civic Discourse and Linkages with STEM curriculum

Energy
Conservation
and
Straw Bale
Home
Insulation

Laws of
Thermodynamics
and
Heat Transfer

Urban Ecology and
Sustainable Cities



Proposed Course Framework



Augments students' non-cognitive skills so that they become participatory knowledge creators and communicators.

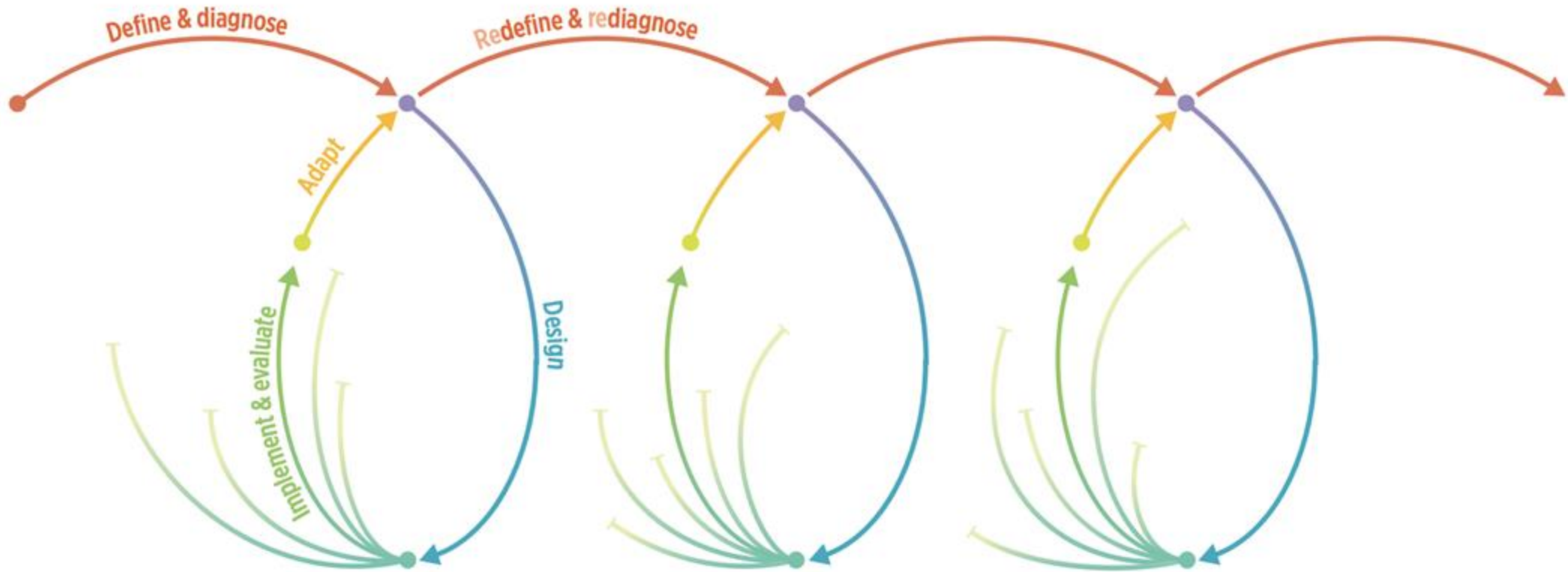


Uses teaching tools to practice non-cognitive skills development, an NSF research priority for STEM workforce development.



Engages in civic discourse and creative place-making yielding a richer community of diverse individuals working collaboratively.

Humanitarian Innovation *Offers Iterative Design Thinking*



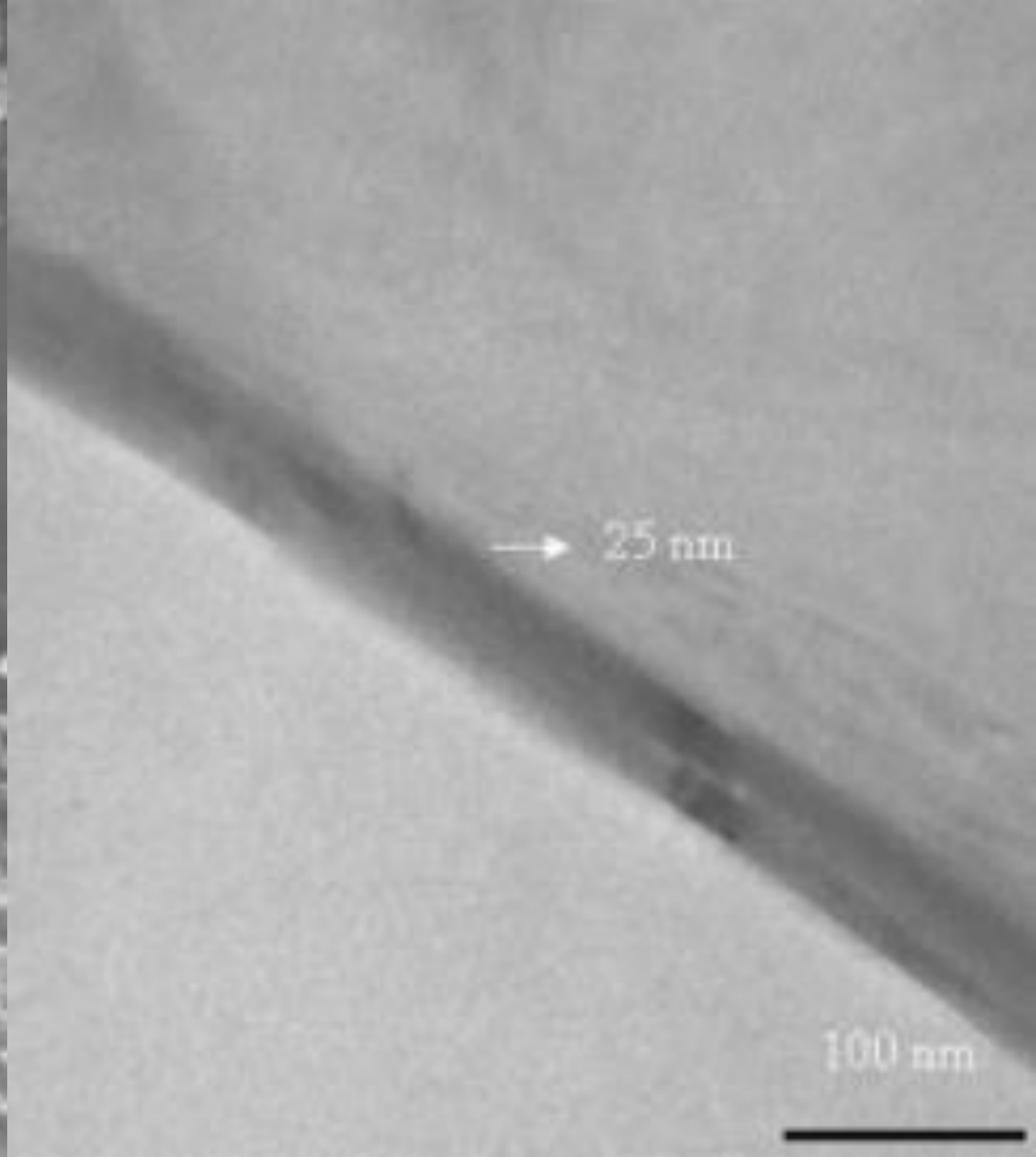
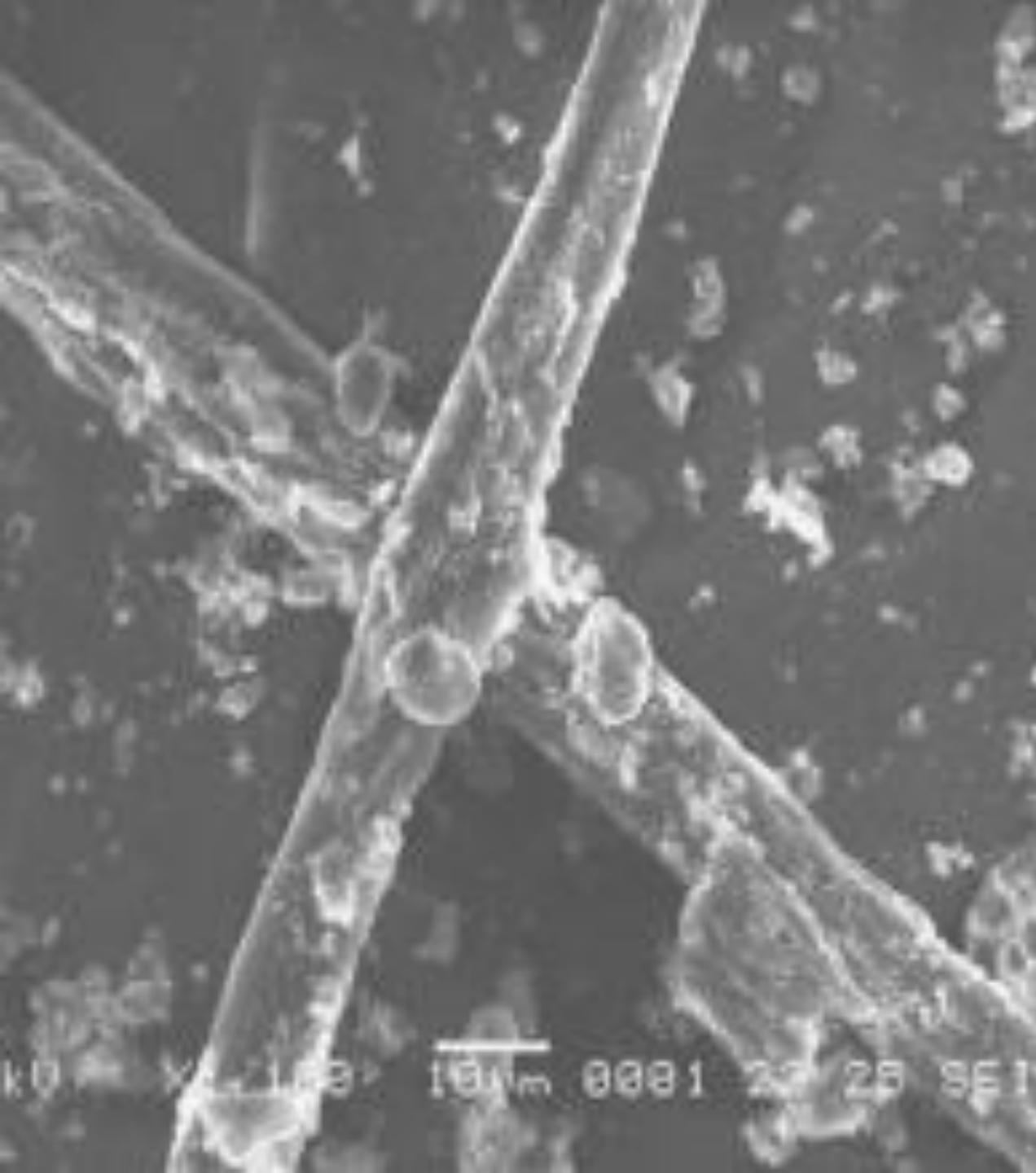
Source: WDR 2015 team.



Water-Hyacinth

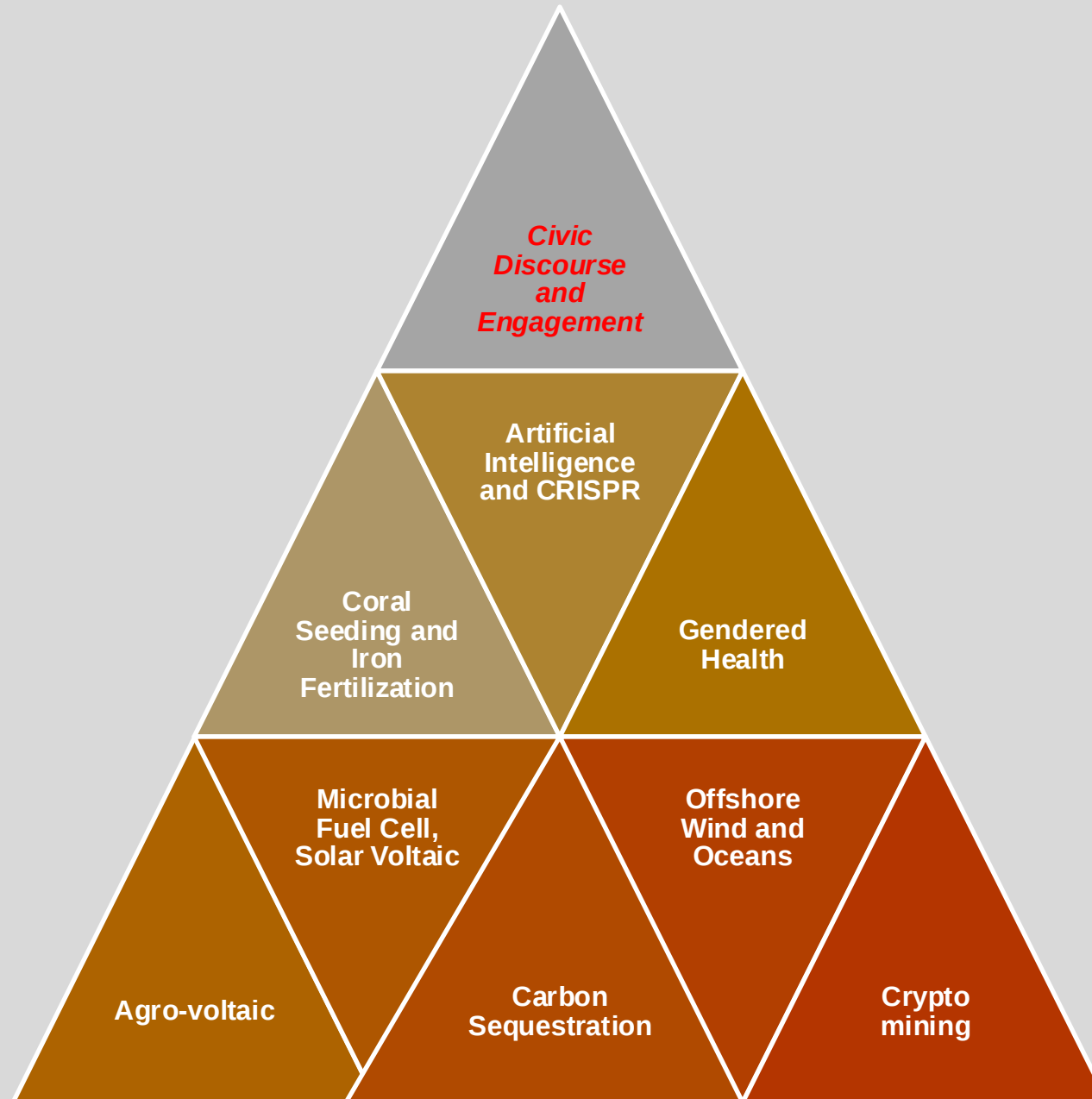
Problem and Ideas







STEM Topics that are in urgent need of a *civic discourse* component



For the breakout session, you are tasked for 15 min to--

Identify a STEM or Civic Discourse idea/topic that you teach.



If you identified a STEM topic, then try to connect it to a civic discourse idea for your classroom.



If you identified a Civic Discourse topic, then try to connect it to a STEM idea for your classroom.



Come back to main room and discuss your ideas and which was the most novel.



Breakout Rooms

Participating in Breakout Rooms

- 1 Each attendee will be randomly assigned to a room
- 2 Click Join in the pop-up box
- 3 The discussion prompts will be in the chat box once you move into the breakout room



BREAKOUT SESSION

Q&A

and

Other Discussion



The Fall 2024 Online Series

September 17 “Hot Moments in the Classroom: Keeping the Temperature Comfortable ”

September 17 “Virtual Dialogue: Our Freedom of Speech + the Perils of Misinformation”

September 24 “Case Study: Course Development Using AI and Civic Discourse”

October 1 “STEM Education IS Civic Education”

October 15 “Artificial Intelligence and Technology Effects on Politics and Civic Engagement”

October 29 “The I-81. A new standard for addressing injustice”

For more information, including recordings and materials, visit the Civic Fellows Toolbox, at www.suny.edu/CivicFellows



To offer support to those interested in learning more about civic education and engagement, the Fellows have developed the SUNY Civic Fellows webpage, with information about the Fellows and resources about the following topics:

- **Curriculum, Teaching, Programming, and Assessment**
- **Student Activities**
- **Campus Governance and Policies**
- **Scholarship and Research**

For more information visit www.suny.edu/CivicFellows
or contact us at CivicFellows@suny.edu

