AGU23 Town Hall
Building Education Capacity

→ to work strategically to strengthen individual & group (community/organization) abilities, skills, & resources to meet educational needs in our modern national and international landscapes.

Sponsors: AGU Education and Science and Society Sections
Town Hall Motivations

1. The Education and Science and Society Sections are among the newest AGU Sections, with special interest working groups/tracks.

Both recognize the importance of the Earth and space science ‘broader impacts’, such as: training the next generation of Earth and space scientists, advancing public scientific literacy and confronting disinformation, and collaborating across disciplines and groups.
Town Hall Motivations

2. Theoretical ideas (2018) on mutually reinforcing feedbacks that advance building an individual’s capacity with building a community’s capacity.

Leveraging the Power of a Community of Practice to Improve Teaching and Learning about the Earth
3. Emergent Theme in 2021 Commentary: the need to invest time to build human connections, share resources, and enhance networking to support collaborative processes that enable us to build education capacity.
Town Hall Goal

→ to create a space for scientists and educators during the AGU December Meeting to engage in dialog to identify areas of need to advance Earth and space science education within/across topics that span education practice and research.

The town Hall is a starting point for dialog and potential collaborations around ideas that emerge within three topical areas:

| Topic 1: Building Bridges Between Science Education Research and Teaching | Topic 2: Curriculum to Foster Workforce Readiness and Engaged Citizenship | Topic 3: Connecting Educators to Teaching Resources and Community Partners |
Town Hall Structure

Each topic will be briefly introduced, followed by facilitated small group discussions and opportunities for share ideas from the in-person and online participants.

<table>
<thead>
<tr>
<th>Topic 1: Building Bridges Between Science Education Research and Teaching</th>
<th>Topic 2: Curriculum to Foster Workforce Readiness and Engaged Citizenship</th>
<th>Topic 3: Connecting Educators to Teaching Resources and Community Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presenters/Discussion Leaders: Laura Lukes, Simon Schneider</td>
<td>Presenters/Discussion Leaders: Elijah Johnson, Joel Singley, Michèle LaVigne</td>
<td>Presenters/Discussion Leaders: Bonnie Murray, Dianna Ibarra, Morgan Treon, Raj Goswami, Missy Holzer, Sophia Tsang</td>
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</tbody>
</table>
Topic 1: Building Bridges Between Science Education Research and Teaching

- Discipline-Based Education Research (DBER) Report (2012)
  - Identified key goal of DBER is to inform teaching practices to yield better student learning and experiences
  - Called for “different strategies…to more effectively translate findings from DBER into practice…” to adopt evidence-based teaching practices [faculty development]

- Types of translations into practice identified in report
  - Translating foundational research into interventions
  - Taking local interventions to scale

- Community Framework for Geoscience Education Research (2018)
  - Institutional Change and Professional Development are needed; as well as research on effective practices in professional development (Bitting et al., 2018)
    - Example: NAGT’s professional development efforts (e.g., Manduca et al, 2017)
    - Example: “Teaching is believing” (Ryker & McConnell, 2013)
Topic 1: Building Bridges Between Science Education Research and Teaching

Guiding Questions:

1. In your teaching practice, what do you identify as the top priorities for education research today?
2. How do you want to learn about education research findings? What resources are currently available?
3. How can we foster more adoption of evidence-based practices in teaching?
   a. What existing knowledge mobilization venues or approaches have been successful?
   b. What barriers exist for educational researchers? educational practitioners?
4. How close to reality are basic assumptions, concepts, and models from science education research?
   a. Who has been historically excluded as participants? Which settings and contexts?
   b. Do established science education research results and instruments account for the global/social dynamics and technologies of the past few decades?
   c. How do these factor into limitations and translation into practice?
Topic 2: Curriculum to Foster Workforce Readiness and Engaged Citizenship

Key Motivations:

- Need for strategies to better prepare students for the wide variety of potential career options by building skills and competencies
- Need for a network to share resources and experiences in creating higher education curricula that incorporates emerging real-world skills and competencies (e.g., policy, community engagement)
Topic 2: Curriculum to Foster Workforce Readiness and Engaged Citizenship

Guiding Questions:

1. What are the skills and competencies required?
   a. Science Communication
   b. Policy advocacy
   c. Applying an equity lens
   d. Emerging technologies (coding, AI, big data, etc.)

2. What are faculty already doing to address these needs in our courses/programs?

3. What are the barriers to students at your institutions in pursuing their career pathways?
   a. Who has been historically excluded from these opportunities? How do opportunities vary internationally?

4. What are the barriers to faculty addressing these needs in geoscience courses or majors?
Topic 3: Connecting Educators to Teaching Resources and Community Partners

In a globally connected world, partnerships between educators/classrooms, community members, private industry and other entities can bring benefits and challenges. Research suggests that by building school-community partnerships, districts can provide students with better opportunities to succeed, including:

- Stronger social and emotional skills development
- Enhanced student engagement (higher attendance rates and lower chronic absenteeism)
- Improved academic outcomes (higher test scores and better grades, higher rates of on-time grade promotion, and higher graduation rates)


Another example, 21st CCLC partnerships with schools, has successfully connected community partners to enhance student learning for over 20 years ([https://afterschoolalliance.org/documents/21stCCLC-Overview-2023.pdf](https://afterschoolalliance.org/documents/21stCCLC-Overview-2023.pdf))
Topic 3: Connecting Educators to Teaching Resources and Community Partners

Guiding Questions:

1. Who could be involved as a partner? (think near and far, big and small)
   - Community partners, corporate partners, virtual partners, industry
2. How can partners equitably participate?
   - Who decides what contributions are needed/valued?
3. What training/resource developments are needed or already exist for starting or maintaining community relationships that enrich teaching and learning?
4. What tips can you share for effective engagement with community partners?
   - What examples of successful partnerships can be referenced?
Town Hall Discussion Directions

**In-person:** Gather with the Discussion Leaders for the Topic(s) of interest to you. Topic facilitators will take notes. You are welcome to add your ideas directly to **Jamboard** using the sticky note icon.

**Online:** In **Jamboard**, add your ideas to each topic using the sticky notes icon. There are Jamboard ‘slides’ for each of the topic areas.

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<tr>
<td>Research and Teaching</td>
<td>and Engaged Citizenship</td>
<td>and Community Partners</td>
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https://tinyurl.com/TownhallJamboard
What Jamboard Looks Like

https://tinyurl.com/TownhallJamboard

Left of the whiteboard is a vertical menu with 8 options.

Centered above the whiteboard is the slide toggle. Click left or right to move to slides with different topical prompts.

Topical prompts will be listed at the top of each slide.

Please be careful as you are able to edit every else's input.
Next Steps

- Will depend on ideas that come out of today’s discussion.
- Possible next steps:
  - Continue to connect with new potential collaborators around ideas of interest.
  - Follow-on online topical discussions facilitated by AGU Sections / group leaders / participants
  - Collaboratively write opinion articles/commentaries
  - Follow-on work towards resource development, activity organization,…
  - **Your Ideas** - add them along with your name and email address to this shared Google Doc:

  [https://tinyurl.com/townhallnextsteps](https://tinyurl.com/townhallnextsteps)
## Join Us for AGU23 Education Events

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<tr>
<th>AGU 2023</th>
<th>Location</th>
<th>Event</th>
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<tr>
<td>Monday Dec 11</td>
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<tr>
<td>6:30 to 8 pm</td>
<td>Marriott Marquis - Salon 12</td>
<td>Early Career &amp; Student Networking Event - Co-sponsored by the Education Section and the Science &amp; Society Section</td>
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<tr>
<td>Tuesday Dec 12</td>
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<tr>
<td>5:30 to 7 pm</td>
<td>Boys and Girls Club of the Peninsula</td>
<td>Outreach Opportunity - Contact Sanlyn Buxner to volunteer to help: <a href="mailto:buxner@psi.edu">buxner@psi.edu</a></td>
</tr>
<tr>
<td>6:30 to 8 pm</td>
<td>Marriott Marquis - Sierra J</td>
<td>Education Reception and Section Gathering - Open to all.</td>
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<tr>
<td>8 to 9:30 pm</td>
<td>Marriott Marquis - Sierra J</td>
<td>Game Night Featuring Resilience Education Games - Open to all.</td>
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<td>Wednesday Dec 13</td>
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<tr>
<td>10:20 to 11:20 am</td>
<td>Moscone Center, 201-202 South</td>
<td>Stout Lecture ED32A: Dr Katherine Ryker, Univ of S. Carolina</td>
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<td>Thursday Dec 14</td>
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<tr>
<td>Evening - TBA</td>
<td>CalAcademy</td>
<td>Outreach Opportunity - Contact Sanlyn Buxner to volunteer to help: <a href="mailto:buxner@psi.edu">buxner@psi.edu</a></td>
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References


And others directly noted directly on the slides.