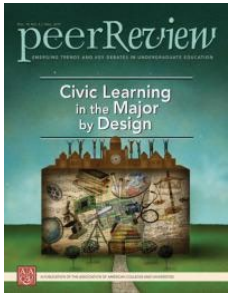
Building Community into Geoscience Courses

Sarah K. Fortner, Associate Professor, @erthsarah (Twitter)

wittenberg UNIVERSITY

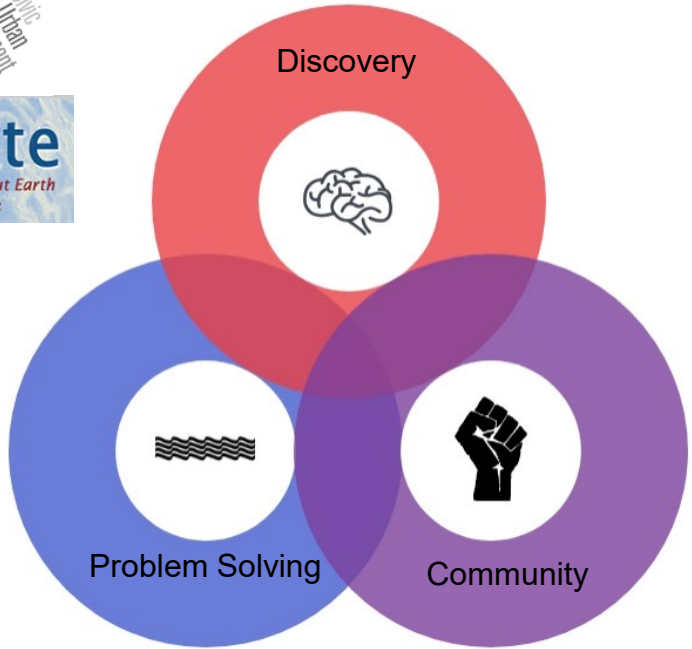


Susan Hirt HAGEN for Civic and Urban Engagement

InTeGrate
Interdisciplinary Teaching about Earth for a Sustainable Future

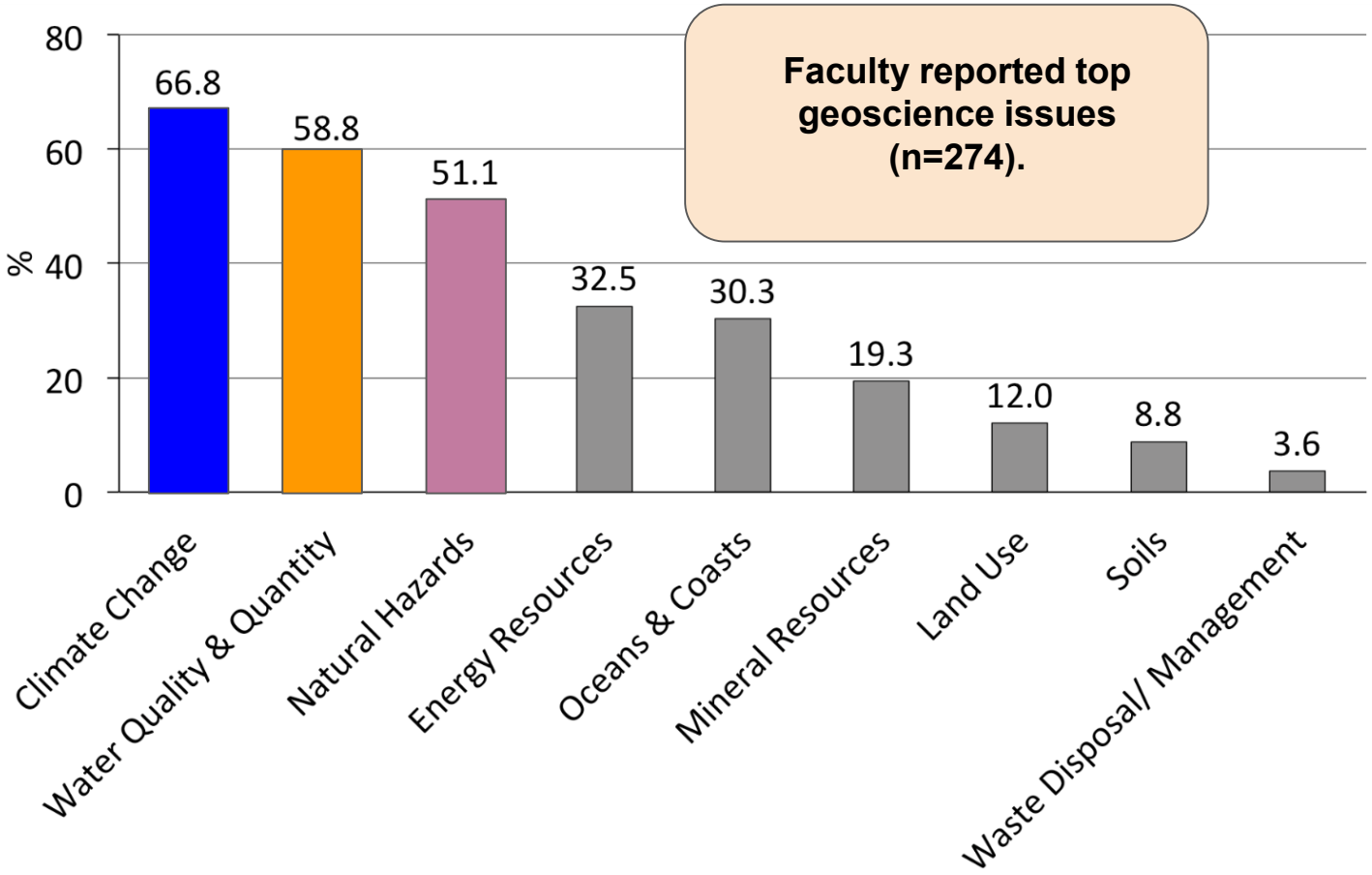
Wittenberg Geology & Environmental Science

- **Recognized by AAC&U for civic excellence**
- **All faculty serve on local advisory boards**
- **25 Partner Organizations, 30+ Partners**
- **3 InTeGrate Modules, 1 Implementation Program, 15 collaborating programs**
- **2000+ hours of community engagement annually**
- **2017-2018 community science projects: flood protection, stormwater management, conservation planning, food security, Buck Creek Educational Corridor, CommonSense Coyote, SafeSoil Springfield (soil lead), BioBlitz, policy meetings**



SPRINGFIELD AGAINST WATER FLUORIDATION

Why community engagement?



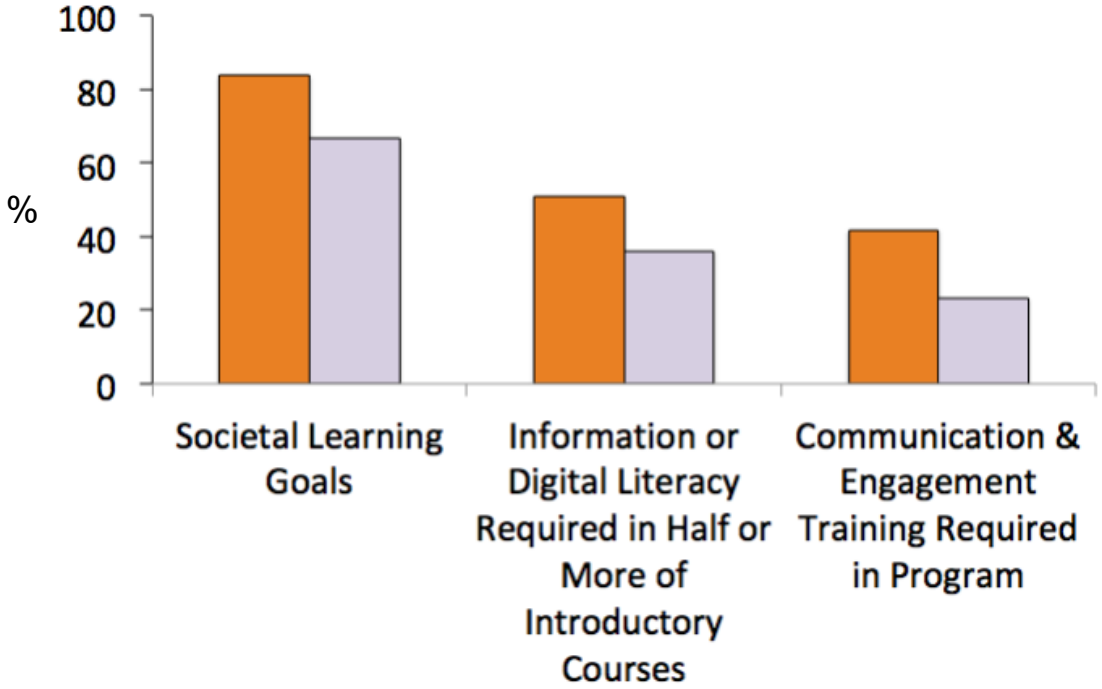
What is the role of science in democracy?

- Informed Citizenry
- Enduring Resources
- Human Health & Safety
- Alignment with Community Priorities
- Justice

46% **of geo faculty reported teaching earth issues at local scales:**

- 24% more likely to serve in local roles
- 35% more likely to teach diverse or URM perspectives
- 36% more likely to teach current regulations & legislation.

Proportion of faculty from programs & institutions that value & reward public engagement vs. those that don't



A call for structural support

- **Orange:** Programs & institutions that require & reward public engagement
- **Purple:** Programs & institutions that don't require or reward public engagement

Resources from: Community & Political & Engagement

InTeGrate
Interdisciplinary Teaching about Earth for a Sustainable Future

te > Teaching for Sustainability > Strategies and Teaching Themes > Connect to the World We Live In > Civic Engagement

Author Profile

- egrate
- Teaching for Sustainability
- Using InTeGrate Courses and Modules
- How the Community is Using InTeGrate Materials
- Strategies and Teaching Themes
  - Infuse Sustainability
  - Expert Ways of Thinking About Earth
  - Connect to the World We Live In
    - **Civic Engagement**
      - Designing Courses Around Issues
      - Political Activities
      - Advocacy Events
      - Developing Talking Points
      - Strategies for Reaching Audiences
      - Political Talk Essay
  - Interdisciplinary
  - Connect Justice to Sustainability
- Community Collections
- Program Design
- Get Involved
- Workshops and Webinars
- About this Project
- News and Announcements
- For Team Members

Community and Political Engagement in the Geosciences

This suite of pages was developed by Sarah Fortner, Wittenberg University with contributions from Rob Baker, Wittenberg University

Community and political engagement in your earth or environmental science classes, research, or service builds our capacity to address major earth resilience issues (i.e. critical needs such as clean and abundant water, climate preparedness, mineral resources and hazard planning). Community and politically relevant earth and environmental science education prepares students with evidence-based and culturally-sensitive problem solving approaches. This community and political engagement toolkit features advice for designing courses around earth challenges in your community that intersect socioeconomic issues of power, identity, race, and class. It describes opportunities for you and your students to engage with local issues. This includes joining or partnering with city leadership, community environmental groups, school boards, or social justice organizations to impact community choices or build political will for nationally-important issues. Similarly, as an earth scientist your role in supporting informed political conversation is powerful. Transform your invited lecture, seminar, or assigned web lecture, into an opportunity for your audience to reflect on their next steps. Think about how you will create a knowledge exchange with the community to improve your work.

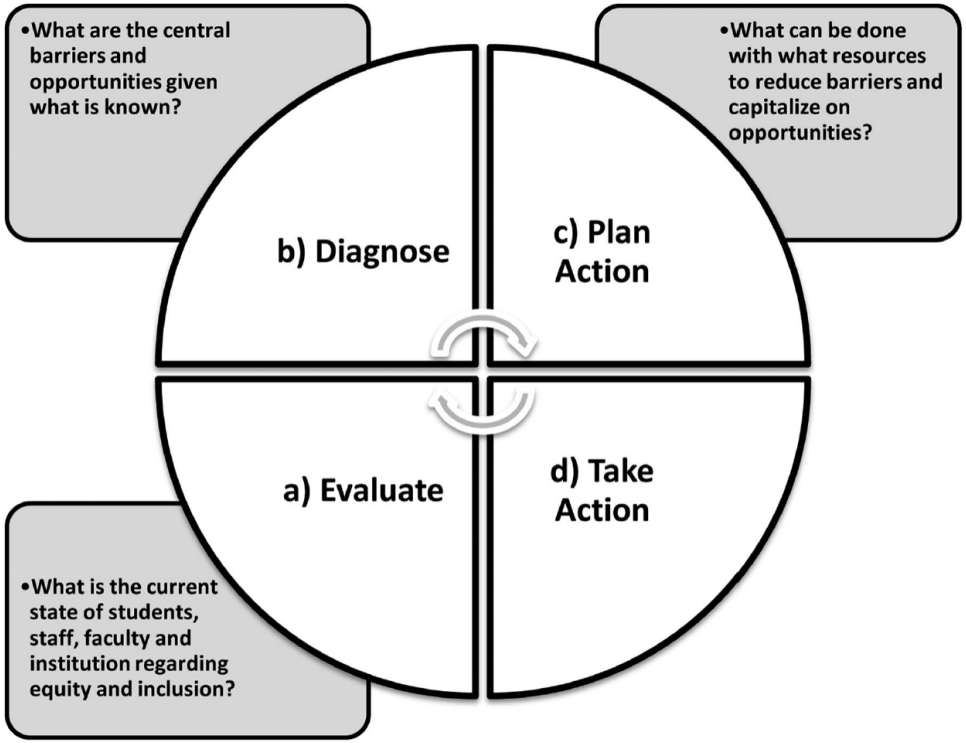
- Democratic Outcomes Guide Engagement: Offers guidance to geoscience faculty or professionals interested in public engagement. Reflect on professional goals and activities and align them with goals for democracy (i.e. informed public, local power, meeting community needs, justice) that guide engagement activities.

Wittenberg students meet with their Representative. Political and community engagement supports students and democracy

https://serc.carleton.edu/integrate/teaching_materials/civic_engagement/index.html

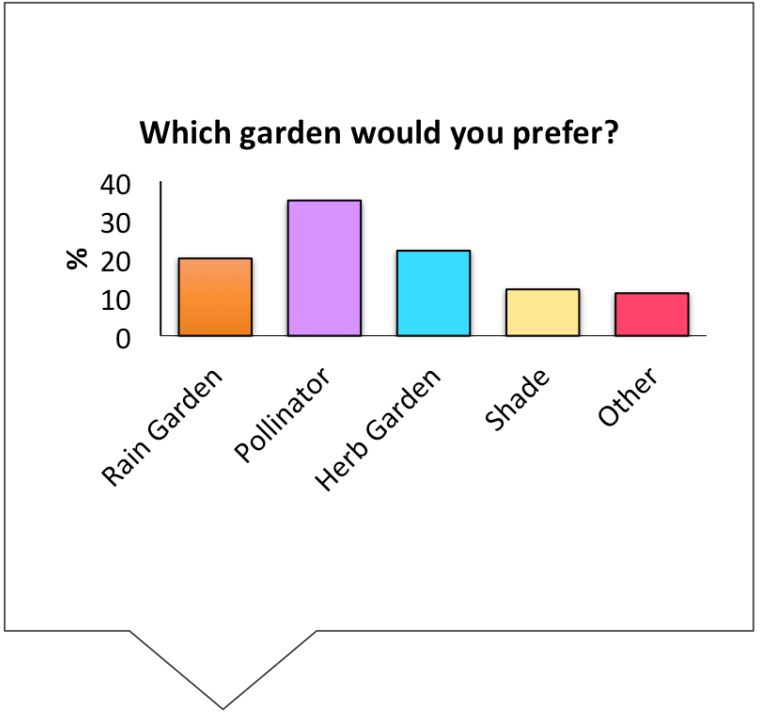
- Develop Locally-Relevant Talking Points: Considers how your research or consensus documents may be presented with local concerns in meetings with representatives.
- Political Activities for Your Course: Features starting-place activities that help students explore policy and environmental justice issues. Activities explore the complexity of communication, decision making, and empowerment of underrepresented and marginalized constituents.

Engage students & communities



Estrada, Mica et al. *Improving underrepresented minority student persistence in STEM*, 2016

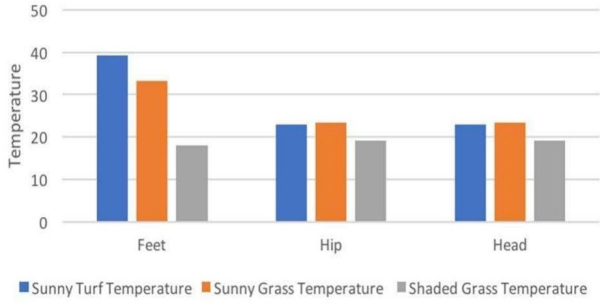
STAGE	Introductory	Advanced
Listen: Learn Priorities & Challenges	• Explore community perspectives on earth issues (news, local websites) • Identify or diagram how community priorities fit within broader challenges (*State of the Cities, Critical Issues*)	• Invite community partners to class to learn priorities • Attend community-hosted event • Explore legislation, regulations, and code ordinances • Survey community



STAGE	Introductory	Advanced
Plan Action	• Use case studies to understand decisions • Collect or find existing locally-relevant data (temporal, spatial) • Explore toolkits for earth decision-makers	• Conduct local research project with partners • Explore legislation, regulations, and code ordinances that may be barriers to community problem-solving & identify path forward

PocketLab Weather (™)

Figure 3: Comparison of average temperatures of sunny grass, shaded grass, and turf at various heights in relationship to the human body.

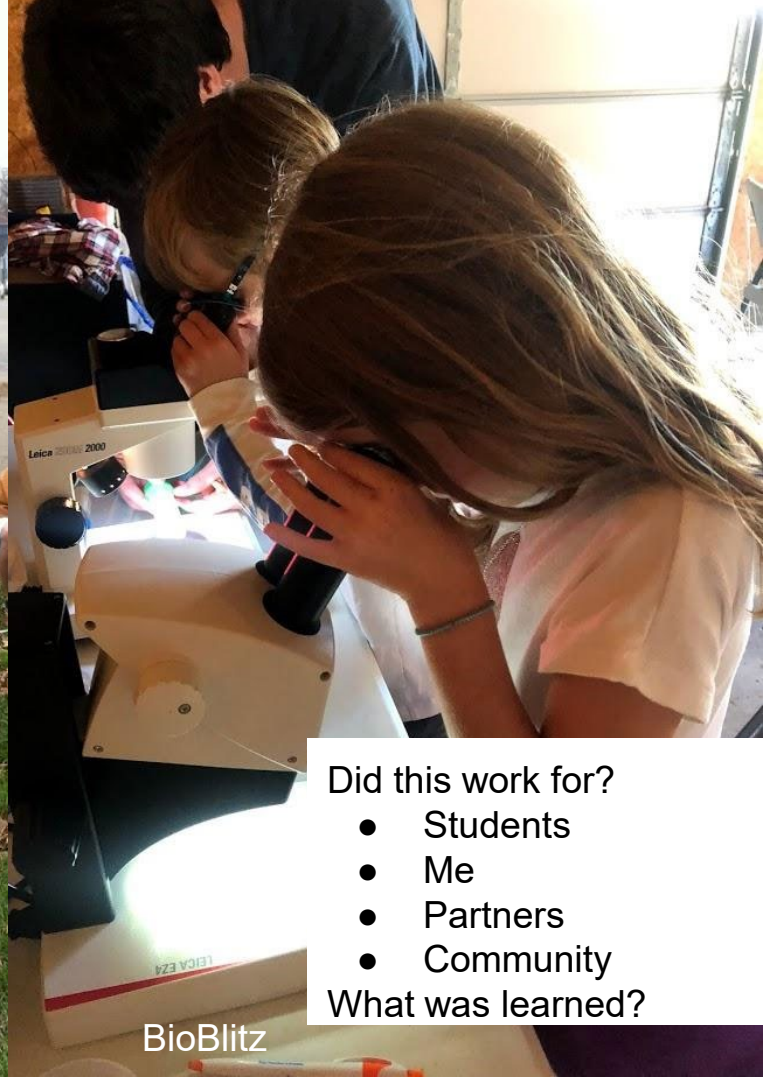


STAGE	Introductory	Advanced
Take Action	• Connect data analyses to locally relevant decision-making • Write an Op-Ed or fact sheet (e.g. climate action in my community)	• Share literacy & research products in right formats • Empower community attendees in personal or policy actions (e.g. rain garden design)

Evaluate & Evolve

Antioch University Farm

Springfield Resident



BioBlitz

Did this work for?

- Students
- Me
- Partners
- Community

What was learned?

Thank You!
Sarah Fortner, sfortner@wittenberg.edu; @erthsarah

Will you be at AGU?

Sign up for Engaging environmental justice in geoscience courses, December 10th

1. **Develop framework for bringing together EJ & geoscience learning**
2. **Share examples, strategies and tools**
3. **Build confidence in including EJ**
4. **Support individual design**

https://serc.carleton.edu/integrate/workshops/ej_geocourses/index.html