

Climate Impacts Breakout Group

What are the biggest impacts of climate change on ecosystems and human societies? (and where, when, how, on whom)

Remember convergent and cross-cutting themes: climate justice, policy, communication, arts, etc.

Moderator: Karen Fisher-Vanden

Note-taker: Lara Fowler

Grand Challenge: Impacts

- Convergent Research Opportunities (thematic)

Where do climate researchers have opportunities to align their efforts?

- Current Penn State Assets and What Makes Us Unique

What is available at Penn State? What are our unique strengths?

- Barriers to Action

What, if anything, hinders your ability to further your climate work?

- Exemplar “success stories”

Where have you seen climate work shine?

- Recommendations and Next Steps

What do you see as opportunities for climate work at Penn State?

Grand Challenge: Impacts

Convergent Research Opportunities:

- Interdisciplinary work - time consuming
 - Different terminology, authorship, norms
- Internal barriers that disincentives inter-disciplinary work
- Need for larger public outreach
 - Stakeholders
 - Larger public policy outreach
- Good opportunities to work on deliberative structures, outreach
 - Need more fora to meet across disciplines
 - Obstacle – not knowing each others' methods

Grand Challenge: Impacts

Assets/Unique Strengths (part 1):

- Basic climate/physical science of climate that informs key climate impacts
 - Paleoclimatology
 - Ice group– assessments of future sea level rise
 - Climate change on extreme weather (fire, water resources, etc.)
- Social/political/ethical/humanities/art
 - within College of Liberal Arts, other units
 - Barriers: how do we specifically integrate with other areas across campus?
 - Justice, diversity- e.g., infrastructure near rivers (oldest parts of region- most compromised, under structure). Lower incomes, more impacted (flooding, higher sewer bills in Allegheny County)
 - Environmental history, justice (geography, literature, comp lit, sociology)
 - Penn State has strengths in areas humanities and outreach and that building collaborations with the physical sciences could be very powerful.
 - Democratic deliberation (McCourtney Institute), Business School's sustainability initiatives
 - Council for deans/directors- build on for P&T
- Geodesign program- landscape architecture
 - Framework for how to address land use issues- applies to everyone's problem
 - WHERE- most important- help tie this together (everything has a location)
 - Important for climate justice
- Public health
 - Particulate emissions, toxics– impacts on different populations, justice questions
 - Need to integrate into larger picture
 - Public Health <https://med.psu.edu/phs>
- [See next slide for more]

Grand Challenge: Impacts

Assets/ Unique Strengths (part 2)

- Extension
 - MWON- e.g., Allegheny County
 - Compile technical report to share with public
- Integrated assessment work- strong
- Exploration, use, extraction of fossil fuels- learn how to have conversation about making transition in society
- Community engagement
 - Engagement with stakeholders in community
 - SCRiM, PSIRC, more
 - Broader public policy work to key decision makers (Congress, etc.)
- Connections with other universities (George Mason, etc.)
 - Existing relationship with other universities – power of institutions to influence broader systems (higher ed- potential for systematic change)
 - Contact for GMU colleague: bauger@gmu.edu and the general email for the Office of Sustainability is gogreen@gmu.edu
- There's also a USDA Agricultural Research Service lab on campus, and we have scientists working on climate change impacts on agriculture from multiple angles. We have strong interactions with Penn State currently, but are always looking for more.
- Physical locations:
 - Asset in PA: ~97% of state is within 50 miles of 1 of our 23 campuses
 - Shaver's Creek- collect data, do research, partner, outreach (display data), programs
- Courses that allow for cross disciplinary engagement (e.g., climate communication)
- library collections should be considered by all an asset for anyone seeking to understand the historical impacts and causes of climate change (see sites.psu.edu/eartharchives)

Grand Challenge: Impacts

Barriers: (part 1)

- Funding opportunities
- Huge learning curve
- Time
 - To develop proposals, start a project, learn from each other
 - Integrate students
 - Hard to get publications out as fast - harder w/ interdisciplinary team
 - Dis-incentive for junior faculty, students
 - Challenge to integrate interdisciplinary models – lot of years
- Culture
- Money
 - NSF funding, other types of funding may not incentivize interdisciplinary work
 - Opportunity coming from NSF changes to integrate technology (links w/ industry – industrial partners)
- Internal incentives: (pushing towards individual work and reward)
 - Collaborative authorship is less valued in humanities (internal incentives)
 - To do work right, need interdisciplinary team
 - **P&T committees**- individual vs. group work (hard to get individual pubs on a team project)
 - Need different kind of evaluations- look at Council on Deans/Directors (who writes letters, mentorship, ways of getting junior scholars on board, more workshops, more senior researchers reaching out to not just build teams, but fund, support, put together
 - For both biophysical and social science and humanities –
 - Barrier: same thing mentioned as unique. History and ongoing strength in exploration and exploitation of fossil fuels
- Taking advantage of our locations (extension, Shaver's Creek, more)

Grand Challenge: Impacts

Barriers (part 2):

- Connecting research w/ outreach
 - Opportunity for broader impacts (esp. minority communities– disproportionate impact from climate)
- Fossil fuel research
 - Fossil fuel industry funding influences what departments see as successful and promising research (and education) programs (sequestration, efficiency, exploration), which de-emphasizes and politically disempowers other research areas (solar, batteries, etc.).

Grand Challenge: Impacts

Success Stories: (see also assets above)

- Dual degree program – seminar series really helpful in encouraging students to collaborate in moving forward
- Good assets:
 - Campus system
 - Shaver's Creek, Science U
 - Extension

Grand Challenge: Impacts

Recommendations/Next Steps: write notes here

- Workshops to allow people to meet/greet
- P&T incentives
- Teaching release
- Seed money
 - to promote interdisciplinary teams, junior faculty (help bring them into existing grants - e.g. integrated impacts)
 - Apprenticeship type program
- Interdisciplinary review policy for grant proposals (foster connections, provide broader review opportunity)
 - Read grants, review – can you imagine yourself in this network? How does this research connect?
- Workshops on topics like career grants for NSF
 - Look for opportunities on pooled money for specialized programs
 - Mentoring – including interdisciplinary approach
 - Think about changing culture

- Chats:
 - Is there a directory or compendium citing research interests or foci of faculty throughout the university? (I am fairly new to PSU and off campus.)
 - I like this idea! A proposal also includes enough specifics that researchers can read them and identify where they could contribute. Love it. I have multiple ideas that could benefit from humanities and social sciences (I have some collab grants in the works).