Bold Challenges

Integrating social and technical research to meet societal needs

Dawn Tilbury
Associate VP Research - Convergence Science
Professor, Mechanical Engineering

https://boldchallenges.umich.edu/
Addressing unmet needs

- Aligning our strengths with strategic research priorities signaled from federal agencies and other key partners (e.g., OUD, Gov Relations)
- Focused on topics around “future communities” linking social (e.g., equity) and technical (e.g., new technologies) aspects
- U-M is very strong in seeking single PI-driven funding but underperforming in large team-based mechanisms
- Specific needs for research teams to be successful in large-scale programs:
  - Facilitated support as teams evolve
  - Integration of social and technical expertise from the beginning
  - Staff support (admin and project management)
  - Connections w/ expertise across units and external community (industry, communities)
  - Resources, including seed funding and time
  - Continuity of support
Aligning U-M strengths with external opportunities

- Healthy adaptation to climate change
- Sustainable and equitable solutions for the housing crisis
- Resilient, equitable & carbon-neutral infrastructure
- Universal access to healthy water
- Better health outcomes through better built environments
- Smart health care systems for equitable access
- Universal access to healthy water
- Better health outcomes through better built environments
- Smart health care systems for equitable access
- Universal access to healthy water
- Better health outcomes through better built environments
- Smart health care systems for equitable access
- Universal access to healthy water
- Better health outcomes through better built environments
- Smart health care systems for equitable access
Approach

- Winter/Spring 2021: Whiteboarding exercises, established advisory group
- Summer 2021: Solicited input from research leaders across U-M and external partners; announced Dawn Tilbury as AVPR - Convergence Science
- Fall 2021: Announced initial stages of program:
  - Six high-level “big idea” topics at the intersections of sustainability, infrastructure and/or health
  - Four phases of the Research Accelerator program, from original concept development, through team formation, value creation, and continuing support
  - OVPR investing one-time funds and working in partnership with several units on campus to leverage existing resources, networks, facilitators, and staffing
- Winter 2022: Hold first workshops, launch pilot incubation phase
- Spring/Summer 2022: Launch next phases of facilitated team support
- Fall 2022: Continuing workshops, support phases
POLLINATION
Facilitated networking & idea generation including external partners

TEAM FORMATION
Team building & research problem focusing with staff support

INCUBATION
Value creation forum: semester-long workshop for a cohort of teams

NURTURE
Continued support of promising research teams & ideas through proposal submission and beyond

ACTIVITIES
● Workshops
● Round-tables

OUTCOMES
● New connections
● Focused research ideas & directions

SCALE
● 3-6 workshops/sem.
● ≈12 teams
● $12k total

ACTIVITIES
● Joint research projects
● Regular meetings
● Engagement with external partners

OUTCOMES
● Strong social.tech team with broad partnerships (industry, community, etc)

SCALE
● 1 semester
● 6 at a time (=30 total)
● ≈$40k/team

ACTIVITIES
● Value creation process
● Working as teams to refine vision/scope

OUTCOMES
● Focused value proposition
● Cohort feedback

SCALE
● 1+ semester
● 6-12 at a time
● ≈$40k/team

ACTIVITIES
● Continued research
● Proposal development

OUTCOMES
● Proposal submissions
● White papers / publications

SCALE
● 1 semester
● 6 at a time (=30 total)
● ≈$40k/team

SCALE

3-6 workshops/sem.
≈12 teams
≈$12k total

1 semester
6 at a time (=30 total)
≈$40k/team

1+ semester
6-12 at a time
≈$40k/team
Goals and Outcomes

Benefits to participants

- Meet new potential collaborators (internal and external)
- Access non-traditional resources like staffing, time (vs just seed funding)
- Receive support for work that needs to be done (meetings, tracking agenda, coordinating drafts, etc.)
- Connect to broader engagement activities with campaign, government relations, etc.
- Have the opportunity to form teams that can pursue large-scale external funding, and to do team-based research that can make a lasting impact

Selection criteria

- Diversity of team (career stage, demographics, mix of social and technical expertise)
- Willingness to participate in the full process (workshops or otherwise)
- Evidence of past funding and expertise related to one of the six challenge areas
- Potential of the research problem to create scientific impact that will have societal contribution in one of the challenge areas
Campus Partnerships

Council of Institutes Steering Committee
- Comprised of representatives from partnering cross-campus centers & institutes
- Co-sponsor Pollination workshops, encourage/select internal & external participants
- Recommend selections for follow-on phases (Team Formation, Incubation, Continuation)

Dean’s Advisory Group
- Encourage relevant faculty to apply for upcoming workshops and/or follow-on phases of the research accelerator.
- Provide school/college perspective on implementation and faculty incentives
- Advise on progress and impact of overall initiative

Implementation Group
- Several teams working in concert including Research Development and Innovation Partnerships teams in OVPR, Office of University Development, Government Relations, and others
- Center for Academic Innovation co-facilitating workshops; also engaging with staff in other centers/institutes
- Synergistic and supportive of upcoming campaign planning process and groups/themes.
- Working closely with DC office on federal opportunities and partnerships as teams develop (e.g., white papers).
Partner Institutes/Centers*

- Center for Academic Innovation
- Center for Global Health Equity
- Center for Social Solutions
- Center for Sustainable Systems
- Center on Finance, Law & Policy
- Ginsberg Center
- Graham Sustainability Institute
- Institute for Global Change Biology
- Institute for Healthcare Policy & Innovation
- Mcity
- Population Studies Center
- Poverty Solutions
- Michigan Center for Infectious Disease Threats
- Michigan Institute for Clinical & Health Research
- Michigan Institute for Data Science
- National Center for Institutional Diversity
- Science, Technology, and Public Policy Program
- U-M Water Center

*note: faculty do not have to be affiliated with one of the above centers to participate
Upcoming dates/deadlines

Office hours (no registration required):
- Wed, Nov 3rd: 9:30 a.m. - 10:30 a.m. (join)
- Fri, Nov 12th: 10:00 a.m. - 11:00 a.m. (join)

Application deadlines:
- Wed, Nov 17th: Winter 2022 Incubation phase applications due (apply here)
- Wed, Dec 1st: Winter 2022 Pollination phase applications (First round) due (apply here)

First round of pollination workshops:
Interested faculty to apply by 12/1 as noted above
- Mon, Jan 24, 2022: Healthy Adaptation to Climate Change
- Mon, Jan 31, 2022: Better Health Outcomes Through Better Built Environments
- Tues, Feb 8, 2022: Resilient, Equitable & Carbon-Neutral Physical Infrastructure

Second round of pollination workshops (Spring 2022, dates TBD):
- Sustainable and equitable solutions for the housing crisis
- Universal access to healthy water
- Smart health care systems for equitable access

Deadlines for Team Formation (Summer 2022) and Pollination (Second Round) will be in Winter 2022.

For more information: visit boldchallenges.umich.edu/ or email Bold-Challenges@umich.edu