

Grand Challenges

Empowering our STATE of minds.

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GRAND CHALLENGES EDUCATION COMMITTEE Agenda, April 3, 2019. Scholes Hall, Room 101

- Welcome and Introductions and Sign-in Sheet
- Committee Charge and Webpage
- Brainstorming for AY2019-2020
 - Some ideas to get us started
 - New ideas for student engagement
- Next Steps
 - Which ideas can we implement with no additional funding?
 - If we had additional funding, which other ideas would we pursue?
- Discussion of next meeting
- Adjourn

Committee Charge:

- *Leverage UNM Grand Challenges to broaden student and faculty participation in interdisciplinary research and problem-solving (at undergraduate and graduate levels).*
- *Leverage UNM Grand Challenges to strengthen instruction.*
- *Leverage UNM Grand Challenges to enrich student learning through co-curricular programs.*
- *Leverage UNM Grand Challenges to build enrollments and increase retention/graduation rates.*
- *Work closely with GC Research Teams to keep them engaged in GC education efforts.*
- *Report regular progress to the GC Steering Council.*

April 3, 2019 Attendees: Tim Schroeder, Cameron Goble, Lili Dai, Stephanie Tofighi, David Hanson (Sustainable Water Use), Jan Armstrong, Steve Borbas (Successful Aging), Tara Hackel

Ideas for Leveraging GC to Engage Undergraduate and Graduate Students

The following ideas were primarily generated and/or discussed during the April 3 committee meeting, but also include a few additions generated in conversations subsequent to the meeting.

NETWORK-BUILDING IDEAS

- **Emeritus Engagement:** Meet with groups of retired professionals to gauge their interest in engaging in and/or sponsoring various student programming elements (i.e., mentoring, scholarships, projects, proposal reviews). Meet with the UNM Retiree Association, and seek out similar groups at Sandia, LANL and Air Force Research Labs.
- **Staff Council:** Meet with leaders from Staff Council to develop strategies for Staff to engage in GC student programming.
- **Honors and University Colleges:** Meet with deans and faculty to develop strategies for incorporating GC research, practice and/or policy into Honors and UC courses.
- **Undergraduate Research Programs:** Meet with existing undergraduate research programs (i.e., McNair, FYRE, MARC) to connect student participants to GC researchers.
- **UROC (Undergraduate Research Opportunity Conference):** Work with UROC Committee to identify which student presentations and posters are connected to the Grand Challenges, and then develop methods for showcasing and connecting those (possibly including a GC UROC Award for Best Poster).
- **UNM Alumni Association:** Meet with Alumni staff and leaders to develop strategies for engaging alumni in Grand Challenges research, education and community outreach.

IDEAS AT NO ADDITIONAL COST

- **Student Organization GC Committee:** Create a committee of representatives from UNM students organizations interested in furthering the aims of the GC research projects.
- **Student and Community Dialogues:** Host drop-in dialogue sessions (including online) where GC researchers can meet with interested students and other stakeholders to discuss their research.
- **GC Researcher Shadowing:** Create shadowing opportunities where undergraduate students could spend a day with Grand Challenges researchers and/or graduate assistants.
- **Grand Challenges Exhibits:** Partner with UCAM and OVPR to create an exhibit for each Challenge in a UNM public location (i.e., library, SUB, Domenici). Exhibit would include posters focusing on articulating the challenge, describing the research, illustrating the technology, and introducing the research teams.
- **Journal Club:** Convene regular meetings where undergraduate and graduate students could read and discuss journal articles related to the Challenges, focusing on articles written by UNM researchers where possible.

IDEAS AT LOW ADDITIONAL COST

- **GC Classroom-Based Activities:** Encourage instructors to incorporate small/low-cost activities in current courses by providing supplies and materials costs.
- **Grand Challenges Course Infusion Mini-Grants:** Individual faculty members infuse substantial GC engagement into existing courses, especially at the lower division level. (Cheaper but less extensive cross-silo collaboration than Faculty Fellows model).
- **Co-Curricular Infusion:** Infuse GC research or exploration into existing student support programming (including research and community outreach).
- **New Student Orientation:** Introduce students to the value of the GC projects, and provide pathways for interested new students to become more involved in research, outreach or education.
- **Other Existing Events:** Engage students in discussing/exploring the three grand challenges at existing student events.
- **Grand Challenges Researcher Mentor Program:** Pair interested undergraduate and graduate students with members of GC research teams to provide informal engagement with a challenge.
- **GC Undergraduate/Graduate Workshops:** Leverage Grand Challenges to teach students essential research skills, possibly including “How to Present Your Research to the Public” and “How to Capitalize on Big Data.” Partner with organizations or departments who already provide similar services.
- **Datasets:** Work with GC teams and UNM libraries to make GC research datasets available to UNM instructors for use in their classes (for instance, in statistics classes) and to make these data sets available to the public through a citizen science framework.

IDEAS AS MODERATE ADDITIONAL COST

- **Grand Challenges Undergraduate Fellows:** Engage students with one or more GC in ways connected to specific academic disciplines (for instance, C&J students could communicate research practices and findings via social media; Fine Arts students could create mechanisms to engage the public in a GC; Political Science students could create opportunities for peers to explore policy implications of a GC).
- **Grand Challenges Faculty Fellows:** Cohort of faculty members learning about and incorporating GCs into the curriculum and instruction of existing courses, and/or creating special topics GC courses (possibly including add-on 1-credit courses to provide additional research engagements).
- **Grand Challenges Academic Learning Communities:** Encourage faculty to teach courses via interdisciplinary student learning communities that address one or more challenge. These courses could be offered as Freshman Learning Communities, or as stand-alone projects.
- **Field Research Site Visits:** Using the STEM University model, introduce students to elements of GC research, and take them to visit research sites. These site visits could be connected to classes or made available as co-curricular engagements.

IDEAS AT HIGH ADDITIONAL COST

- **GC Transfer Summer Bridge:** Develop summer research experiences that introduces transfer students to one or more challenges.
- **GC Summer Research Academies:** Develop summer research experiences that engage students (undergraduate and graduate) in research projects that connect to or support one or more challenges.
- **GC Assessment Assistantships:** Hire Graduate Assistants to help develop, sustain and publish online a system for measuring and analyzing the impact of GC research and student engagement.
- **Thesis/Dissertation Fellowships:** Provide scholarships to students who are working on theses or dissertations that connect directly to the Challenges.