Embanking on Grand Challenge Research
A Challenge and an Opportunity
The Many Pressures on the Research Enterprise

- Growing Competition for Federal Research Funding
- Increasingly Burdensome Compliance Requirements
- Cuts to State Funding for Public Higher Education
- Concerns about College Affordability
- Political Polarization about the Value of Higher Education
- Politicization of the Role of Science in Public Policy
Funders Seeking Transformative Impact

Affinity to Issues, Not Institutions

How Next Generation Donors Consider Philanthropic Investments

1) Setting Goals
First decide philanthropic goals, then search for potential recipients

2) Evaluating Organizations
Conduct research and due diligence before deciding what to support

3) Solving Problems
Fund efforts that address root causes and attempt systematic solutions

4) Analyzing Results
Prefer information on proven effectiveness or measurable impact

Donors Are Impact-Centric

62%
Want information on how the organization plans to use the gift

75%
Want information on results achieved with their gift

64%
Want stories about people who were helped


1) Survey participants were individuals aged 21 to 40 years-old who were “currently or potentially active in their families’ significant philanthropic processes and/or who are wealth creators themselves and currently or potentially active in their own philanthropy.”
Universities Require New Capabilities to Be Successful

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<th>New Types of Problems</th>
<th>New Funding Approaches</th>
<th>New Institutional Capabilities</th>
<th>New Competitive Dynamics</th>
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<td>Large in scope</td>
<td>Small number of deep-pocketed funders</td>
<td>Large teams</td>
<td>Larger institutional investment</td>
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<td>Complex causes</td>
<td>Placing a small number of ‘big bets’</td>
<td>Specialists from multiple disciplines</td>
<td>Bigger partnership networks</td>
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<td>Require new technologies, treatments or policies</td>
<td>Assessing proposals on potential impact rather than disciplinary standards</td>
<td>Cross sectoral collaboration</td>
<td>Proactive outreach/ marketing</td>
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<td>Local community impact</td>
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<td>Translation of research to outcomes</td>
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<td>Global relevance</td>
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<td>Community outreach</td>
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## Defining Big Ideas

Ensuring Success By Clarifying What is Expected

A Big Idea Should:

- Transform the University and the world
- Make the University unique in the marketplace
- Focus on where the University is good but could become better
- Include areas where the University is emerging as a leader

A Big Idea Should Not:

- Be defined *solely* by a capital project
- Bundle together smaller ideas
- Solely feature a naming opportunity
- Lead to slow, incremental improvement

Source: EAB interviews and analysis.
The Impetus for Trying Something New

$1B in Research Expenditures, But Impact Could Be Greater

- **Missed Opportunities**
  Funding opportunities where UCLA seemed well positioned but no one applied

- **Diversifying Funding**
  Traditional sources (NIH and NSF) becoming increasingly competitive. Grow the pie by attracting new funding sources (industry, foundations, and individual donors)

- **Research Lifecycle Mismatch**
  Different researchers focused on different points in the evolution and application of an idea (e.g., water technology in engineering and water policy in public policy)

- **Public Recognition**
  World-class researchers in many areas (e.g. neuroscience) but not necessarily recognized as an institution with such expertise

- **Demonstrating Value**
  Legislature and public questioning the value of investment in university research and education

Source: EAB interviews and analysis
There were people who had the potential to give us more money, but we weren’t presenting them with the right vision. We realized that we have so many priorities, there are no priorities.”

Michelle Popowitz, Assistant Vice Chancellor for Research & Executive Director for UCLA Grand Challenges
UCLA Sets Out SMART+ Grand Challenges

Sustainable Los Angeles Grand Challenge
(Announced Nov 2013)

Goals:
• Create the roadmap to transition Los Angeles County by 2050 to 100% renewable energy, 100% locally sourced water, and enhanced ecosystem health and human health
• Work plan has been developed and research is underway

Depression Grand Challenge
(Announced Oct 2015)

Goals:
• Cut the burden of depression in half by 2050 and eliminate it by the end of the century
• Four components: 100k subject study, discovery neuroscience, treating depression, understanding and eliminating the stigma associated with depression
Sustainable LA Grand Challenge

Connecting Multidisciplinary Talent to Regional Challenges

Why UCLA?

- Expertise across relevant areas:
  - climate change mitigation and adaptation
  - renewable energy, energy efficiency
  - water quality and supply
  - transportation, urban planning, architecture, urban design
  - environmental health and conservation, law and policy
  - social and ecosystem sciences

- Diverse and talented students: undergraduate, graduate, and postdoctoral scholars

- Demonstrated history of delivering technology breakthroughs, policy innovations, and comprehensive strategies

- Ability to use the UCLA campus as a test bed

Funding Goal: $150M
Collaborators: 150+ faculty staff from 30 centers and 30+ departments

Source: http://grandchallenges.ucla.edu/; EAB interviews and analysis
Depression Grand Challenge

Leveraging World Class Neuroscience to Make a Difference

Why UCLA?

- Leaders in:
  - Neuroscience, behavioral science, genetics
  - Economics, public health
  - Engineering, business, medicine, public policy
  - Humanities, storytelling, and the arts

- All of the experts are within 10-minute walk of each other on our single campus site

- Diverse patient population served by the UCLA Health System facilitates the recruitment of a representative research cohort of unprecedented size

Funding Goal: $525M over first 10 years
Workforce: 100+ researchers from 25+ departments

Source: [http://grandchallenges.ucla.edu/](http://grandchallenges.ucla.edu/); EAB interviews and analysis
# Anatomy of a Winning Proposal

## The Precision Health Initiative at Indiana University

1. **Addresses a compelling problem or challenge whose resolution will significantly benefit the people of Indiana and beyond**
   
   “Understanding and optimizing the prevention, onset, treatment, progression and health outcomes of human diseases”

2. **Has defined, achievable goals that deliver tangible benefits to the people of Indiana and beyond**
   
   The initiative “will seek to cure at least one cancer and one childhood disease, as well as find ways to prevent one chronic illness and one neurodegenerative disease.”

3. **Can attract the external competitive, philanthropic, corporate, and/or government funding necessary to sustain the work to successful completion**
   
   Partners include Eli Lilly and Co., Roche Diagnostics, Cook Regentec, Deloitte, Regenstrief Institute, and IU Health

4. **Requires a multidisciplinary team that reaches across departments, schools, and in most cases, campuses**
   
   IU School of Medicine, IU Bloomington, and IUPUI all involved

5. **Strategically leverages IU strengths and existing resources**
   
   Incorporates five research clusters

### Additional Considerations

- Experienced team leader: Anantha Shekhar, Associate Vice President for Clinical Affairs at IU and Executive Associate Dean for Research at the IU School of Medicine—had already led two CTSAs

- Administrative support infrastructure: School of Medicine already has administrative infrastructure in place to run large collaborative research projects

Source: EAB interviews and analysis; [http://www.grandchallenges.iu.edu/](http://www.grandchallenges.iu.edu/)
“We are trying to demonstrate that IU is focused on doing research that has a felt impact. We want people to be able to say, ‘This is the reason I am glad that Indiana has this research university.’ And when we get there we will make a point of telling people about it.”

Faith Hawkins, Associate Vice President for Research, and Lead Administrator of Grand Challenges Program
Six Imperatives for Embarking on Grand Challenges

1. Select
   Choose a grand challenge that connects departmental research with a large community problem

2. Equip
   Focus on a problem your institution is uniquely qualified to address

3. Equip
   Reinforce an expert team with internal and external collaborators

4. Launch
   Remove institutional barriers to collaboration

5. Launch
   Position the challenge at the heart of strategic leadership and communication efforts

6. Launch
   Create a road map of incremental goalposts for measuring success

Source: https://www.eab.com/research-and-insights/university-research-forum/white-papers/six-imperatives-for-embarking-on-grand-challenges