UC–China: Emerging Collaborations on Earthquake Relief and Response

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Overview

• How do UC–China collaborations in Sichuan fit into the broader context of our system–wide China strategy, the “10+10”?  
• What is the broader scope of earthquake–related challenges we can and should be addressing, for the benefit of both California and China?  
• Status of our emerging efforts
UC–China: Strategic Advantages

• The unique scope and scale of our research capacity: 10 campuses, 3 national labs, hundreds of existing collaborations.

• Richly interconnected UC “family” in China, and vice versa.

• Our entrepreneurial character and track record in building multi-sector partnerships for research, development and delivery.

• The deep historical, economic, and cultural ties between China and California.
The 10+10: Our Core Approach

Working with premier partner institutions in China we are developing “grand challenges” approaches to integrating research and education in service to society. Elements include:

1. Identifying interdisciplinary challenges of vital importance to the health, welfare and economic vitality of both China and California;
2. Pulling together new partnerships which include academia, government, industry and non-profit sector in both regions;
3. Re-structuring educational experiences of our students to focus on working in binational teams to address common practical challenges.

Leading with our best research, we structure our collaborations for the long-term benefit of both California and China.
The 10+10: More Details

- Founding Chinese universities: Tsinghua, Peking University, China Agricultural University, Fudan, Tongji, Shanghai Jiaotong, Nanjing, Zhejiang, University of Ocean Sciences, and Sichuan University.
- Open to other Chinese universities – not exclusive.
- Significant core support from Chinese Ministry of Education and China Scholarship Council; support from other organizations in China and US on a project-by-project basis.
- Wide variety of research themes under development, e.g. green energy and transportation; clinical neurosciences; digital media and the arts; sustainability of wilderness areas: Yosemite–Jiuzhaigou collaboration, etc.
UC–China Earthquake Collaborations: Status and Prospects

• Initial “scoping” visit: May 19, 20, 2008. Planning discussions at Sichuan University, including with President Xie Heping.
• First UC “reconnaissance” team visits Sichuan: June 24 - July 6.
• Representatives from 5 UC campuses, Lawrence Berkeley National Lab, PG&E, California Geological Survey.
• Extensive meetings at Sichuan University; fieldtrips to Mianzhu, Dujiangyan, Zipingpu Dam, Yingxiu, Hongkou.

“Roadmap” for collaborations under development:
– Shorter term vs longer term
– Urban vs rural
– Wide interdisciplinary breadth, mapping to enormous interest of faculty and students
Themes for Collaboration

In addition to more “earthquake-specific” areas, such as seismology, structural engineering, geotechnical engineering etc., high priorities include:

• **Mental Health**: Addressing the long–term aftermath of the disaster; Craig Van Dyke, UCSF, who was part of our reconnaissance team, worked with colleagues in China to develop a “training the trainers” approach.

• **IT for Disaster Response**: Developing more effective systems for future large-scale emergencies, in China and California. Chaitan Baru, of UCSD and the San Diego Supercomputer Center led this theme on our reconnaissance team.

• **Legal, Social, Economic, and Educational Aftermath**: Both in academic meetings and in sessions with local government in Mianzhu, collaborations in these areas, strongly emphasized.
Recovery and Re-Building Efforts

Scale of the disaster, means the opportunities to re-build in ways that are more environmentally sound, safe, and socially beneficial are enormous, both for isolated rural villages and for urban areas.

• **Rural villages:** These are areas tremendously historically disadvantaged. Potential topics include:
  – seismic safety of possible relocation sites;
  – low-cost, energy-efficient, culturally appropriate housing;
  – cost-effective, distributed water treatment technologies;
  – access to power and telecommunications;
  – re-design of rural educational systems, etc.

• **Agriculture:** Re-planning of agricultural subsystems for: more effective land and water use; agricultural bioengineering for crops and livestock; manure management for nutrition recycling, etc.
Recovery and Re-Building Efforts: Urban

Tremendous amount of mutual interest and expertise among UC and Chinese partners.

- **Urban Planning:**
  - sustainable urban land use and transportation;
  - low-cost, energy-efficient, culturally appropriate housing;
  - environmental remediation;
  - “eco-industrial” design;
  - drinking and waste water treatment technologies, etc.

For both urban and rural areas, a focus on creating better job opportunities; preserving cultural heritage, and overcoming social inequities, is crucial.

Prospects for collaborations in public health, and in medical research and education are also enormous.
Potential Regional Focus

Mianzhu: “County-level” city in Deyang. Focus of MOU with Sichuan U.

- Geographically, on edge of Sichuan basin; near epicenter
- Mixed urban, rural
- Highly developed industrial base
- One of the counties most highly affected by the quake:
  - Greatest economic losses of any county
  - One of the highest in terms of loss of life (> 11,000 deaths)

Our delegation, together with Sichuan U faculty, met with Mianzhu mayor and several vice majors to discuss possibilities for specific projects, and visited Hanwang town.
Conclusions

• Prospects for mutually beneficial collaborations are enormous;
• While initial focus is on Wenchuan quake, this should grow into a “bi-national” California-China effort on preparing for future earthquakes;
• Projects should be designed for active involvement of students, both at undergraduate and graduate levels;
• Partnerships with other communities in California will be vital to our success.