

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.



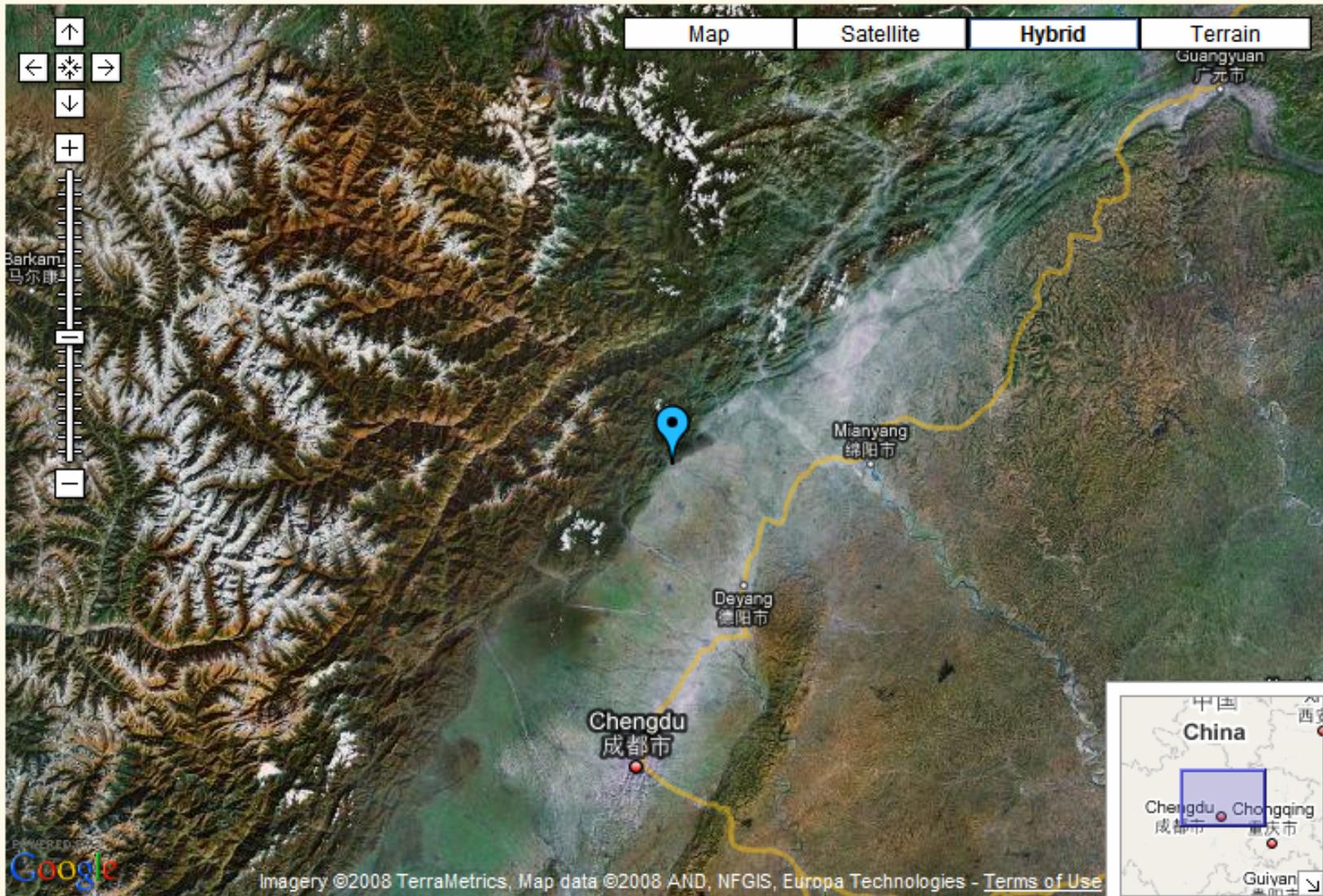
Potential Regional Focus

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.





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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.

