Response & Short Term Recovery

# Basic Research

- Response for the next event --- very little understanding of sequence of events (fundamental earthquake predictability).
- Social science – risk communication in a very different way. What information, health status, responding to the on-going event.
- Earthquake physics – multiple faults – opportunity to study subsurface structure image – earthquake cycles.
- Simulation of nuclear materials – where do they go – how to model sediments. Input from the air, where do they come from.
- Interplay between media information versus message to community - Social media, media knowledge – how to take advantage of these media for effective response (instead of negative effect).

# Basic Research

- Decision support – information, interplay of varying data sources
- Rapid response in social network for mega cities.
- In depth surveys (on victims)
- Maximum damage – modeling the worst-case scenario, what damage would result, how the region can sustain or not able to sustain – multi-disciplinary effort in all effort. Situational awareness. How do we trust the model results? How should we validate the models? We need confidence in these models so that decision can be made.
- Recovery: decision made during response may have long-term (and recovery) impact. Safety, land-use, finance, economic (long term impact of general community well-being)

# New Data Generated

- Questions regarding access to online data, how that may help them to cope. (20% response rate)
- New data (through interviewed and surveyed) on timeline of evacuation, response to radiological event, screening, etc (good response rate)
- Cultural difference?



# Uniqueness

- Decision – social median, and the sequence of events
- Simulation of nuclear materials – where do they go – how to model sediments. Input from the air, where do they come from. What isotopes?
- Traffic data is owned by private companies. ITS combined data from these companies (for the 1st time), using sensors from the internet. How do we leverage combined (existing) data from individual sites for global decision?
- Supply-chain collapsed (unique suppliers) – rapid recovery is needed. Business continuity – need more basic research.

# Focused Research

- Modeling and analytics in processing heterogeneous data for decision-making and policy-making
  - In Japan, traffic data is owned by private companies. ITS combined data from these companies (for the 1st time), using sensors from the internet. How do we leverage combined (existing) data from individual sites for global decision? What is the power of our current analytic skills?
- Simulation of nuclear materials – where do they go – how to model sediments. Input from the air, where do they come from. What isotopes?
- Supply - Chain resilience (Japan is a good example)
  - Supply-chain collapsed (unique suppliers) – rapid recovery is needed. Business continuity.
- Emergency response: preparedness and training

# Focused Research

- Psychological impact (individual vs community vs age-groups vs cultural difference)
- Short-term and long term recovery through community engagement and decision-making process. [[Engagement of all stakeholders, especially the citizens who are the ones being displaced, and will have to live in the new community.]]

# Importance

- Exploiting/leveraging existing community structures and local capabilities for rapid response (training)
- Emergency response effort links to local community, groups, embedded organizations and individuals.