Trans-disciplinary Science Addressing the Human Dimension

Co-chairs:

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Major Themes 1

- **Public policy** – extremes and threshold/tipping events
- **Economy** – Social and economic valuation of the research investment
- **Communication** – method, message, understanding, perception, scientific literacy across multiple publics
- **Education** – challenges with literature, curricula, mentorship and training
- **Vulnerability** to hazards as an organizing principle
- Decision making under **uncertainty** as an organizing principle
- Challenges of **scales** (timescales and geography)
- Psychological components of **risk perception** and experience
- **Use inspired**/ understanding-driven research
- Coupling and **cascades**, complex combinations of vulnerability
- **Rapid response research capacity**
- What is the appropriate relative weight for the human dimensions work here? How do you measure parity?
- Is NCAR doing something it shouldn’t be doing? Should we lose something to devote resources to a new, exciting area?
Major Themes 2

• Sustainable futures – integrated scenarios
• Scenarios and models at urban and planning scales
• Renewable energy production and transport – obs, models
• Health effects and weather/climate interactions
• Air quality
• Connecting local/regional adaptation responses – feedbacks and diverging futures
• Enhance public relations and external communication

• Build/expand NCAR capacity as a community bridging function
• Transdisciplinary science reward structures and success metrics
• Communication of weather and climate information
• Decision making and risk perception at multiple scales
• Social Science needs to be engaged at the VERY beginning
• NCAR as a facilitator, networker, leveraging UCAR constellation to support competitive advantages
Key topics/ideas

- Vision for role of human dimensions research at NCAR
- Communication, education, and decision-making
- Climate and health
- Scenario analysis of climate/hazards/sustainability
Vision for Role of Human Dimensions

- In the longer term, how large should the role of human dimensions work at NCAR be?
  - Does NCAR start with problems or with disciplines? What balance?

- Could move toward a (greatly?) expanded role for HD research at NCAR
  - Relevance to problems being addressed
  - Human systems as important to earth systems?
  - Broader funding sources?

- Could focus on leveraging/facilitating/collaborating
  - Draw on UCAR members - UCAR strategic plan?
  - Establish relationships with existing centers of expertise
  - Partner with universities on interdisciplinary education
Communication, education, decision-making (related to climate and weather)

- Expanded NCAR role in communicating science and risks of climate/weather to public, users, decision-makers
- Incorporate both research on communication and decision-making, and outreach efforts to communicate to users
- Elements: Risk perception, messaging, understanding of the message, psychology
- Partner with universities on interdisciplinary education
Climate, weather, air quality and health

• Facilitating/informing interaction between climate and medical community, e.g. at US state level)
• Urban areas, heat waves, deer ticks, air quality...
• Small existing program with CDC already
• Primary NCAR role could be in climate, weather, air quality information (reanalysis, projections, etc.)...
• ...but also facilitating use of that information in interdisciplinary analysis of health effects
Scenario analysis of climate/hazards/sustainability

- Envisioning sustainable futures (beyond climate)
- Bridging global-local analyses for evaluating impacts and emissions/mitigation
  - Connect to ongoing climate scenario process
  - Take advantage of UCAR
- Urban areas as a particular focus?
- Socio-economic conditions underlying vulnerability to hazards/impacts
  - Long term projections difficult to do at universities