Regional Induced Seismicity Collaborative (RISC): Integrating Research Approaches in the Southern Midcontinent

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Seismic Activity in the Central and Eastern US

Bill Ellsworth, Stanford/USGS
Seismic Activity in Texas

All states in the southern midcontinent have similar experiences.
Many Questions Span State Borders

- Is seismicity related to the volume or rate of water disposal, or both?
- Does the zone of injection (i.e., proximity to basement) influence the potential for seismicity?
- How can we better map faults and understand their relationship to seismicity?
- Can we estimate future water production and better manage this water to mitigate induced seismicity?
- Can we reduce water production with oil and gas?
- What is the impact of the seismicity on infrastructure?
- ...

Could a regional approach to these questions lead to more consistent and thorough management strategies?
Regional Collaboration Networks

*Used by Many Other Groups to Address Regional Issues*

NOAA’s Regional Collaboration initiative is a network of NOAA country. Eight geographic regions are represented by Regions within regions and collaboration with external partners to respi

Regional Collaboration Teams:

NIH StrokeNet Regional Coordinating Stroke Centers (U24)

Regional Coordination Network Launches for Veterans, Service Members and Families
Issues that Motivate RISC:
• Data availability, reporting, and analysis vary widely among states in the U.S. southern midcontinent
• Scientific community is missing an opportunity to leverage efforts and experience

RISC Goals:
• Efficient and effective approaches for addressing geologic issues that span state boundaries
• A visible pathway for important involvement of Federal agencies
• Increased potential for meaningful collaboration between universities and state and federal entities (e.g., geological surveys, regulators, environmental agencies)
• Develop scientific theme-based framework for collaboration
• Organize workshops and meetings
• Facilitate inter-state scientific projects. Examples:
  ✓ Create RISC data portal or retrofit existing portal
  ✓ Unify seismological analyses
  ✓ Improve how fluid flow is quantified and tracked in basins that span jurisdictions
  ✓ Develop new numerical approaches to enhance causal understanding
  ✓ Communicate more effectively to stakeholders and decision makers
RISC: Opportunities to Collaborate

- Other State geological surveys
- State agencies (Railroad Commission of Texas, Oklahoma Corp Commission, etc.)
- Researchers at Federal (DOE, USGS) laboratories
- Data vendors (IHS, FracFocus, DigitalH2O, etc.)
- US EIA
Schedule:
Initial start-up on October 1, 2017

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