



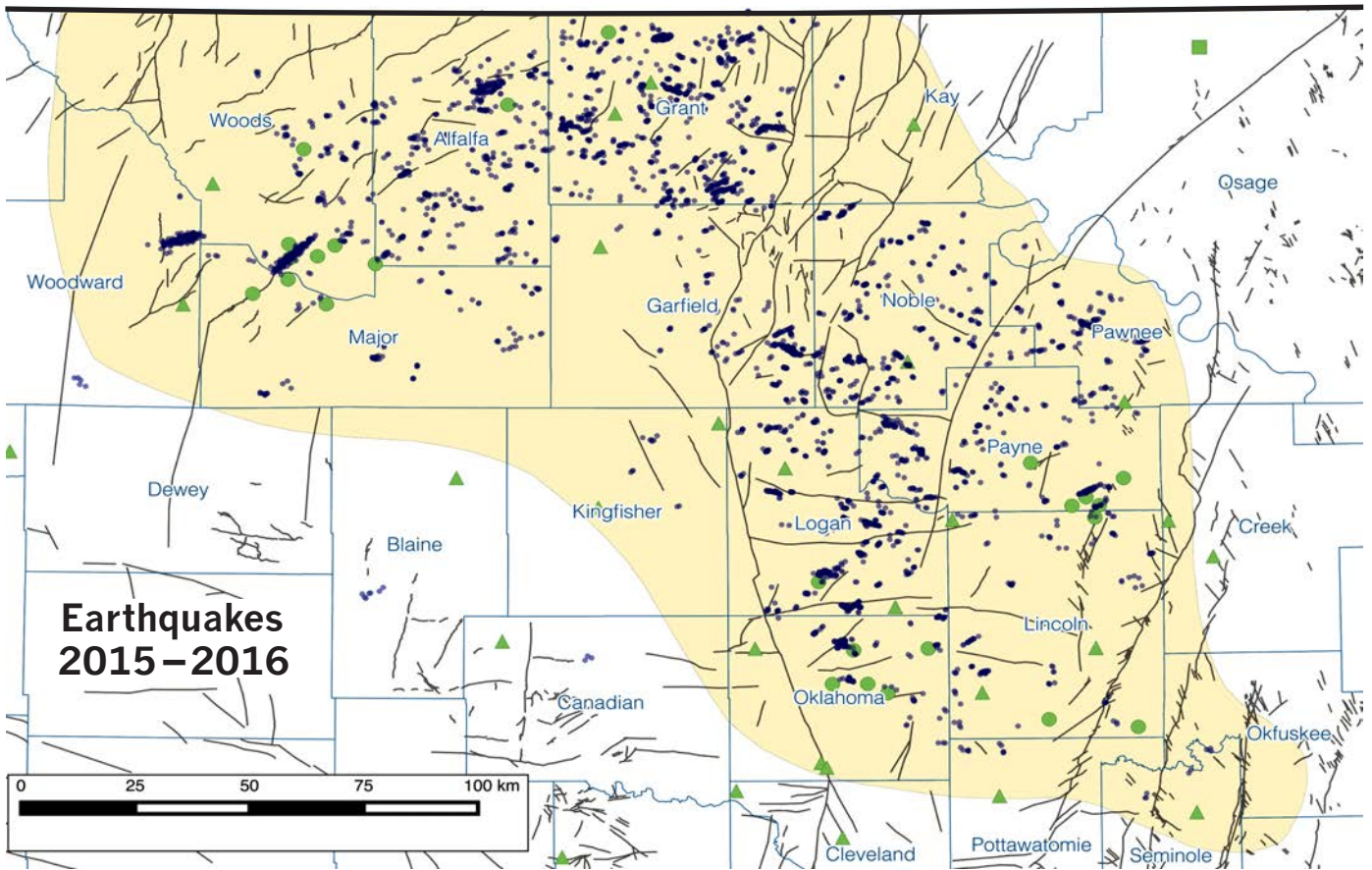
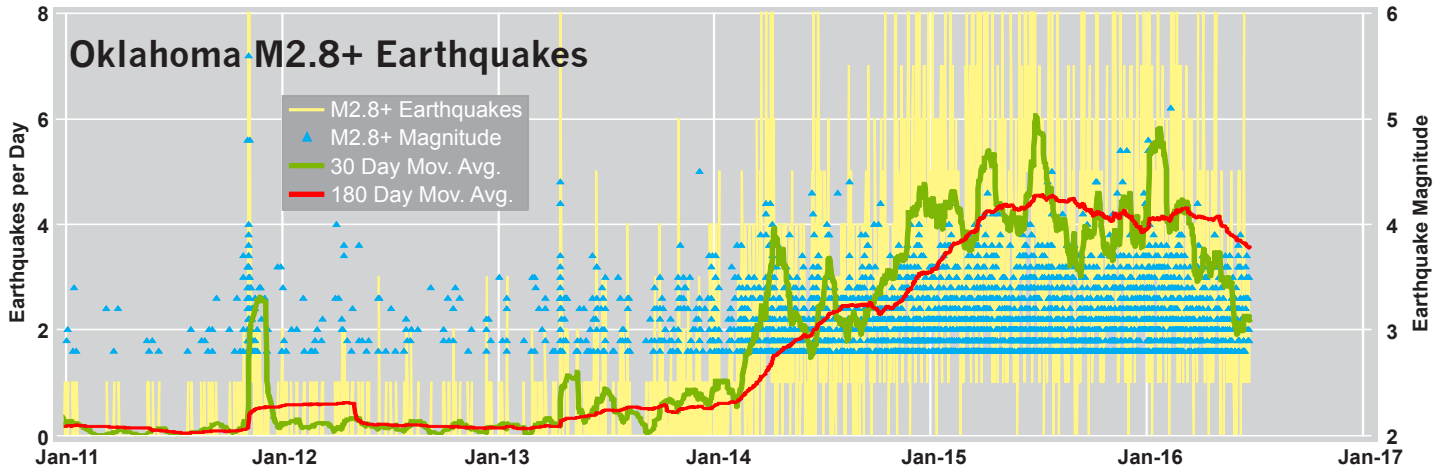
U.S. DEPARTMENT OF ENERGY



NATIONAL ENERGY TECHNOLOGY LABORATORY



Office of the Secretary of Energy & Environment



Sponsored by the Oklahoma Geological Survey

The University of Oklahoma  
MEWBOURNE COLLEGE OF EARTH AND ENERGY

**WORKSHOP:**  
**SEISMICITY IN OKLAHOMA**  
September 7 & 8, 2016  
Moore Norman Technology Center

# WORKSHOP AGENDA: DAY 1

## Date/Time

## Title

SEPT. 7, 8:00-8:30 am **Welcome:**

Mike Stice - Dean of MCEE

Mike Teague - Oklahoma Secretary of  
Energy & Environment

Jeremy Boak - Director of OGS

Kyle Murray - OGS

• Welcome to Oklahoma, OU, Norman

• Briefing on the Coordinating Council

• Welcome and Introduction to the Workshop

• Format and Design of Panel and Discussion Sessions

SEPT. 7, 8:30-10:00 am **Session 1: Networks and Monitoring, Moderated by Todd Halihan from Oklahoma State University**

Jefferson Chang - OGS

Oral

• State of the Network

Scott Ausbrooks - AR GS

Oral

• Developing Criteria to Characterize and Classify  
Discreet Clusters of Earthquakes from 2009-2015

Alexandros Savvaidis - TX BEG

Oral

• TexNet-Texas Seismological Network:  
A Contemporary Approach for Monitoring the  
Earthquake Activity in Texas

Sara Dougherty - USGS

Oral

• LArge-n Seismic Survey in Oklahoma (LASSO):  
Probing Injection-Induced Seismicity with a Dense Array

**COFFEE BREAK & POSTERS 10:00-10:30 am**

SEPT. 7, 10:30-12:00 pm **Session 2: Data Acquisition and Management, Moderated by Steve Tipton from ALL Consulting**

Chen Chen - OU

Oral

• 3D Velocity Model and Earthquake Relocations in Central  
Oklahoma

Rex Buchanan - KS GS

Oral

• Induced Seismicity in Kansas: Events and Responses

Tim Baker - OCC

Oral

• OGCD Presentation of Dashboard Software of  
Seismicity/Disposal Volumes

Jackson Haffener - OU

Oral

• Spatio-Temporal Correlations between Wastewater Disposal  
and Seismicity in Oklahoma

David Brown - OGS

Poster

• Methodology for 3D Spatial Analysis of Okla. Earthquakes

**LUNCH BREAK & POSTERS 12:00-1:00 pm**

SEPT. 7, 1:00-2:30 pm **Session 3: Fluids and Pressure, Moderated by Hal Macartney from Pioneer Natural Resources**

Caitlin Barnes - OSU

Oral

• Pressure Migration Predictions in USGS Areas of  
Potentially Induced Seismicity

Matthew Weingarten - Stanford

Oral

• Are We Past Peak Pressure in Oklahoma? A Hydrogeologic  
Evaluation of Reduced Saltwater Injection Rates on  
Induced Seismicity

Kayla Kroll - LLNL

Oral

• Mitigating Induced Seismicity Through Active Pressure  
Management in Simulation-Based Studies

Kyle Murray - OGS

Oral

• Monitoring of Fluid Levels and Pressures in the  
Arbuckle Group

**COFFEE BREAK & POSTERS 2:30-3:00 pm**

SEPT. 7, 3:00-4:30 pm **Session 4: Seismological Data Analysis, Moderated by Rex Buchanan from the Kansas Geological Survey**

Tim Sickbert - OSU

Oral

• Progress, Status & Plans: Oklahoma Earthquake Research  
at OSU

Xiaowei Chen - OU

Oral

• Seismogenic Processes of Induced Sequence in  
Central Oklahoma

Colin Pennington - OU

Oral

• Seismological Analysis of the Prague Earthquake Sequence

Jacob Water - TX BEG

Oral

• A Myriad of Mechanisms for Inducing Texas  
(and Oklahoma) Earthquakes in the Last Century

Noor Ghouse - OGS

Poster

• B-Values in Oklahoma

Rob Skoumal - USGS

Poster

• Seismicity Induced by Hydraulic Fracturing in Oklahoma

# WORKSHOP AGENDA: DAY 2

## Date/Time

## Title

SEPT. 8, 8:30-10:00 am **Session 5: Geological and Reservoir Characterization, Moderated by Kyle Murray from the Oklahoma Geological Survey**

Jordan Williams - OGS	Oral	• Defining Formation Level Details in the Arbuckle Group
Stacey Evans - OGS	Oral	• Characterization of Fluid Migration and Alteration in Basement Rocks of Northern Oklahoma
Anjana Shah - USGS	Oral	• Influence of Subsurface Geology on Induced Seismicity in Oklahoma
Gabriel Machado - OU	Oral	• Evaluation of Basement from 3D Seismic Surveys

### **COFFEE BREAK & POSTERS 10:00–10:30 am**

SEPT. 8, 10:30-12:00 pm **Session 6: Structure and Stress, Moderated by Meg Coleman from the U. S. Department of Energy**

Will Levandowski - USGS	Oral	• Imaging Complex Crustal Structure and Stress in Oklahoma and Southern Kansas
Ze'ev Reches - OU	Oral	• Intraplate Seismicity in Oklahoma: Interplay of Tectonic and Anthropogenic Effects
Rall Walsh - Stanford	Oral	• Probabilistic Assessment of Potentially Active Oklahoma Faults
Kevin Crain - OGS	Poster	• Gravity Effect of the Upper Basement

### **LUNCH BREAK & POSTERS 12:00–1:00 pm**

SEPT. 8, 1:00-2:30 pm **Session 7: Hazards and Ground Motion, Moderated by Tom Robins from the Oklahoma Secretary of Energy and Environment's Office**

Morgan Moschetti - USGS	Oral	• Ground Motions from Induced Earthquakes in Oklahoma and Kansas
Charles Mueller - USGS	Oral	• Modeling Seismic Hazard from Induced Earthquakes
Dan McNamara - USGS	Oral	• Characterization of Newly Reactivated Faulting and Potential Shaking Hazard to National Strategic Infrastructure Near Cushing, Oklahoma

### **COFFEE BREAK & POSTERS 2:30–3:00 pm**

SEPT. 8, 3:00-4:00 pm **Session 8: Engineering and Built Environment, Moderated by Kris Nygaard from Exxon-Mobil**

Scott Harvey - OU	Oral	• Post-Earthquake Bridge Inspection Protocol for the Oklahoma Department of Transportation
Abbie Liel - CU	Oral	• Risks of Damage to the Built Environment from Induced Seismicity

SEPT. 8, 4:00-4:30 pm **Wrap-Up Session: What Have We Learned? Where Do We Go From Here? Moderated by Kris Nygaard from Exxon-Mobile and Kyle Murray from the Oklahoma Geological Survey**



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