



We study the state and evolution of pressure, stress, deformation, and fluid migration through experiments, models, and field study. We are dedicated to producing innovative concepts that couple geology and fluid flow.

1. Experimental: Analyze fabric, acoustic, electrical, and material properties of mudrocks: 0.1-100 MPa.
2. Modeling: Develop and apply coupled models to link realistic rheologies, deformation, stress (shear & normal), and pore pressure
3. Field Study: Analyze pore pressure, stress, deformation in thrust belts and in the sub-salt.

Website: <http://www-udc.ig.utexas.edu/geofluids/>

Contacts: pflerings@jsg.utexas.edu, john.germaine@tufts.edu, mariakat@mail.utexas.edu

Annual Consortium Meeting

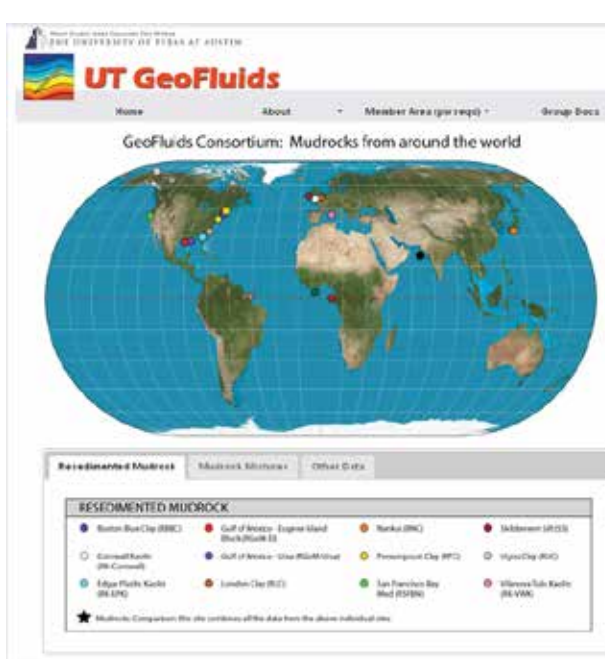
Deliverables:

- Online presentations
- Online database of experimental program
- Publications
- Online software
- Spreadsheets, handbooks



2021 Consortium Meeting
100 attendees representing
9 different companies

Online
GeoFluids
database



Transferring technology
at the annual meeting and workshop

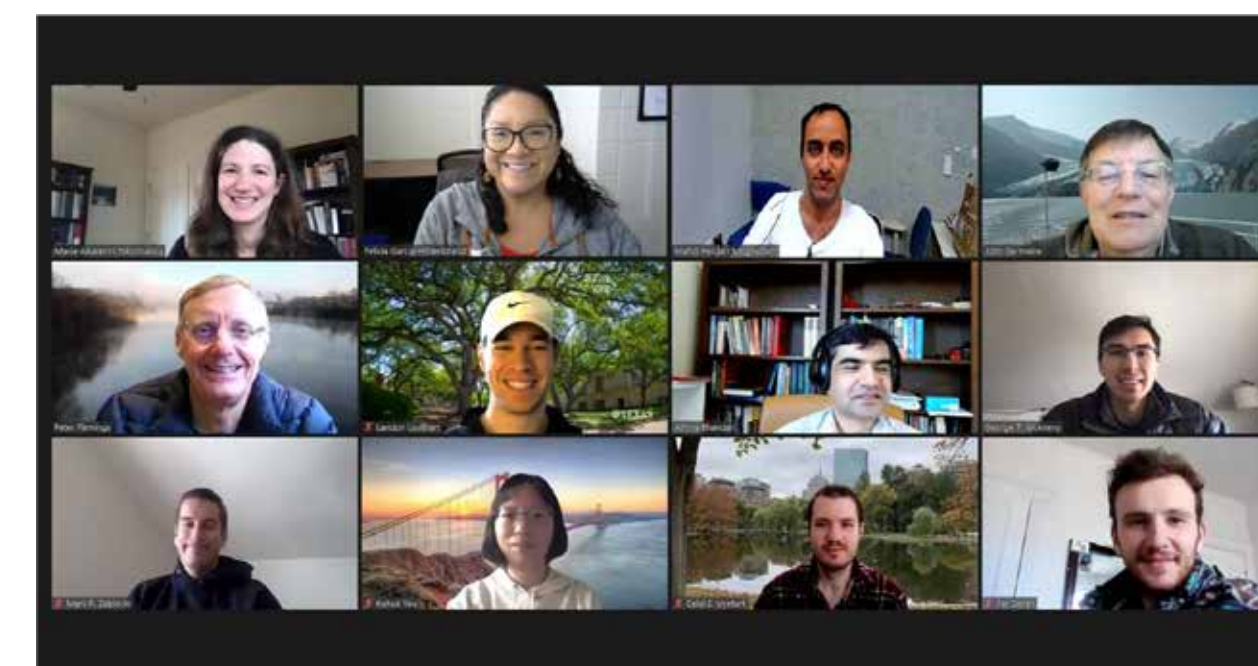
UT GeoFluids: A team effort of UT Geoscientists and Tufts Geotechnical Engineers

GeoFluids Co-Directors

Peter Flemings
Professor
Jackson School
of Geosciences
The University of Texas
at Austin



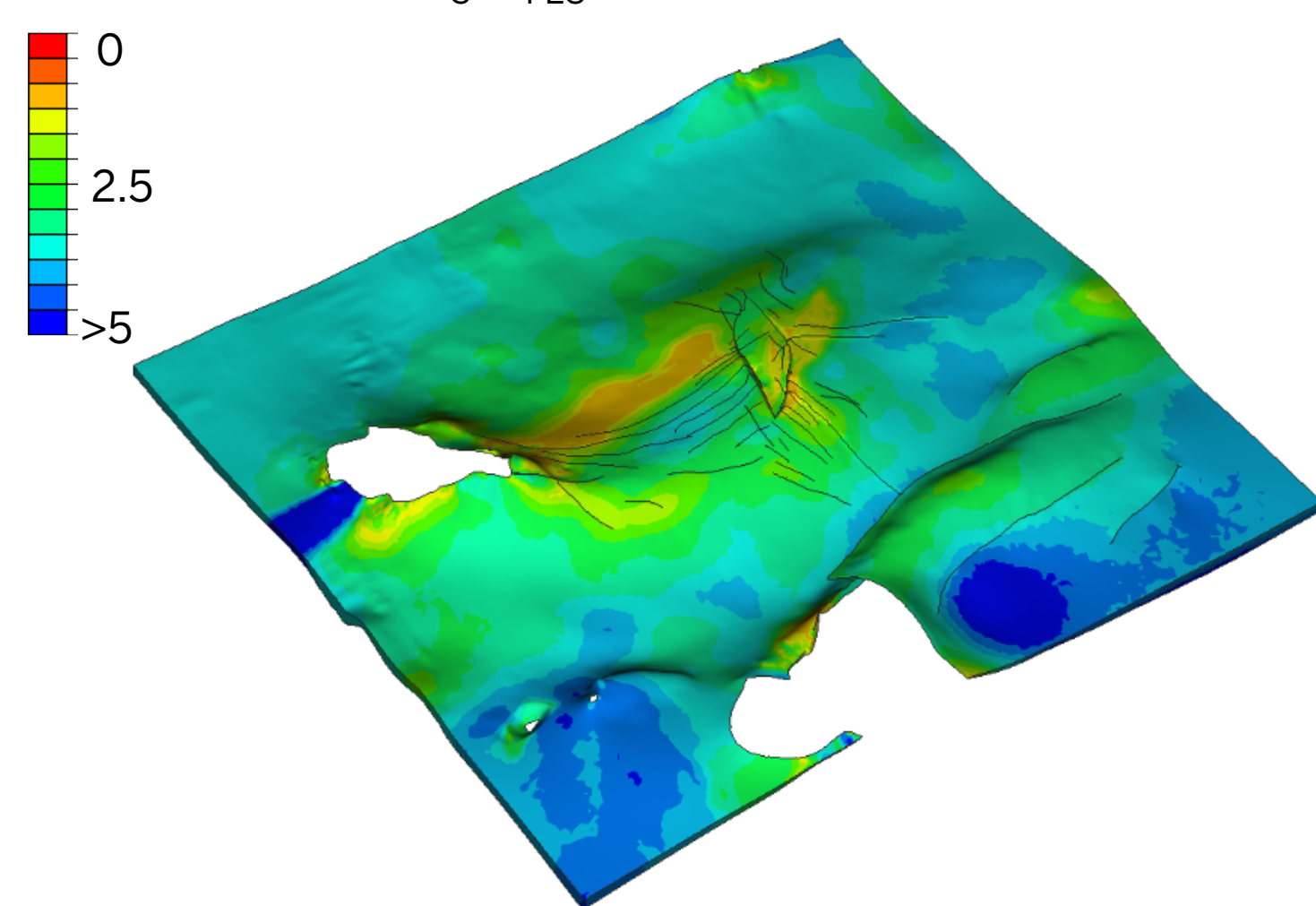
Jack Germaine
Research Professor
Department of Civil and
Environmental Engineering
Tufts University



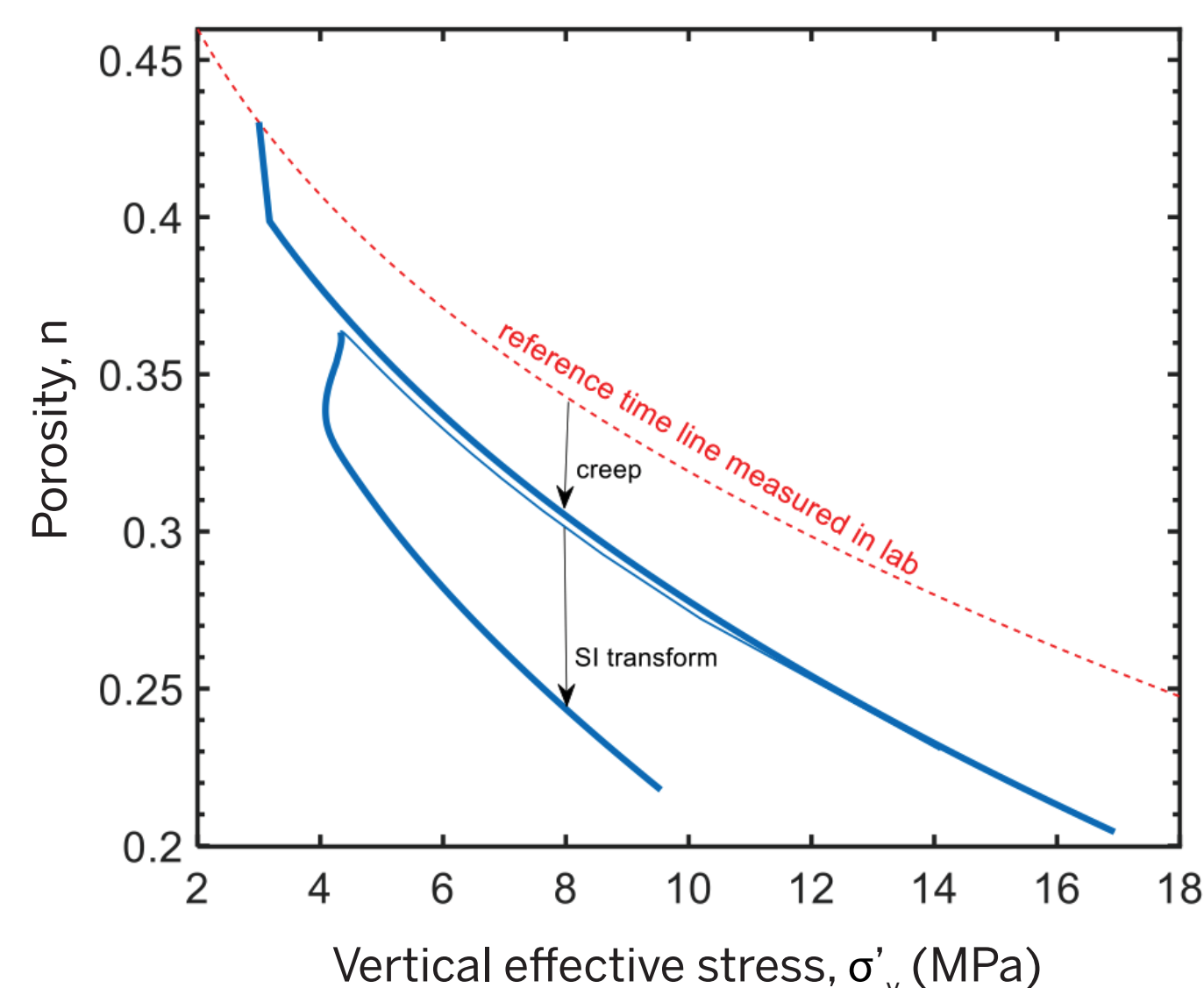
4 Research Scientists
7 Graduate Students
4 Staff/Technical Support

Geomechanical Modeling

Drilling window, $\sigma_3 - u_{FES}$ (ppg)

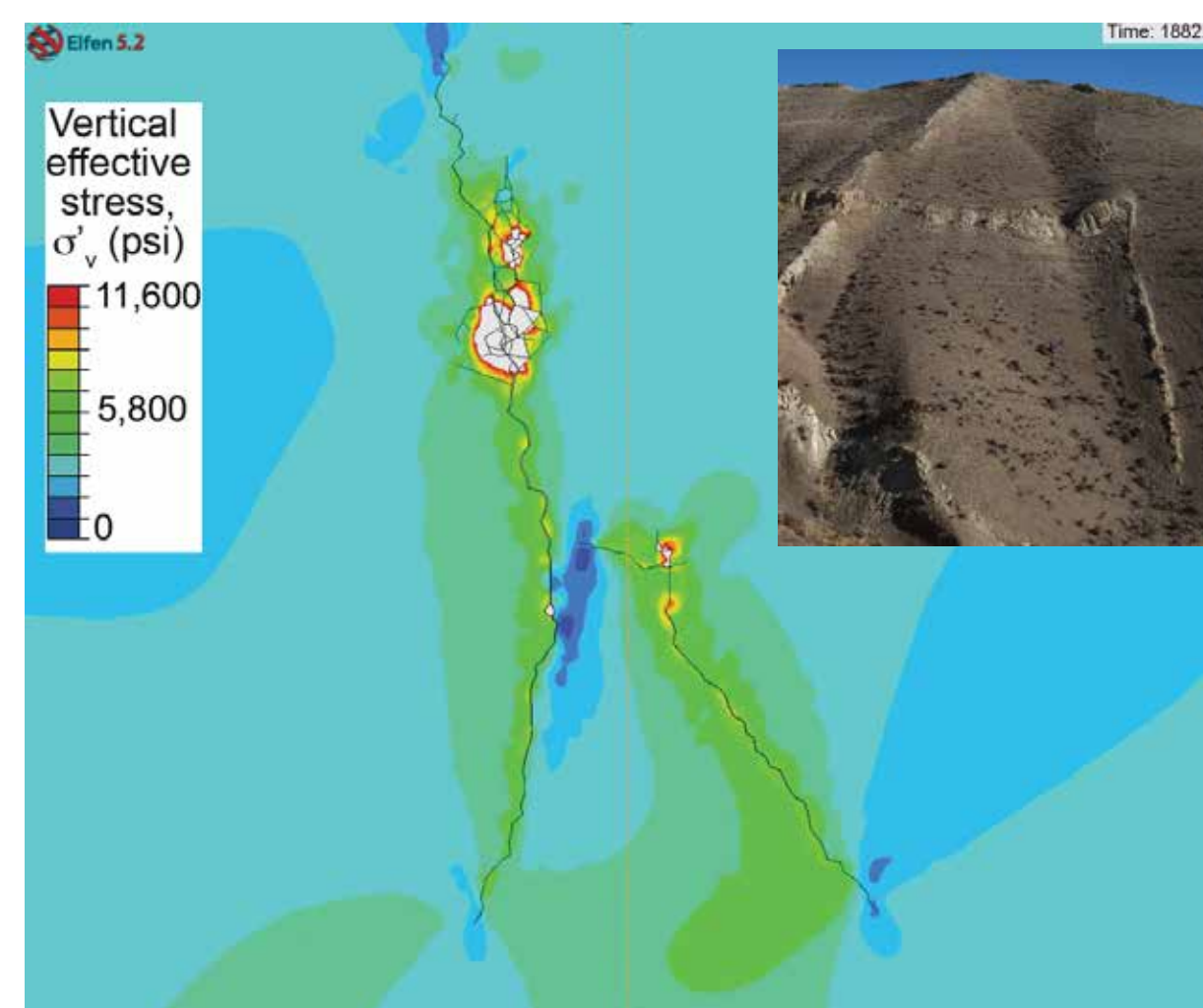


3D FES pressure and stress prediction at Mad Dog

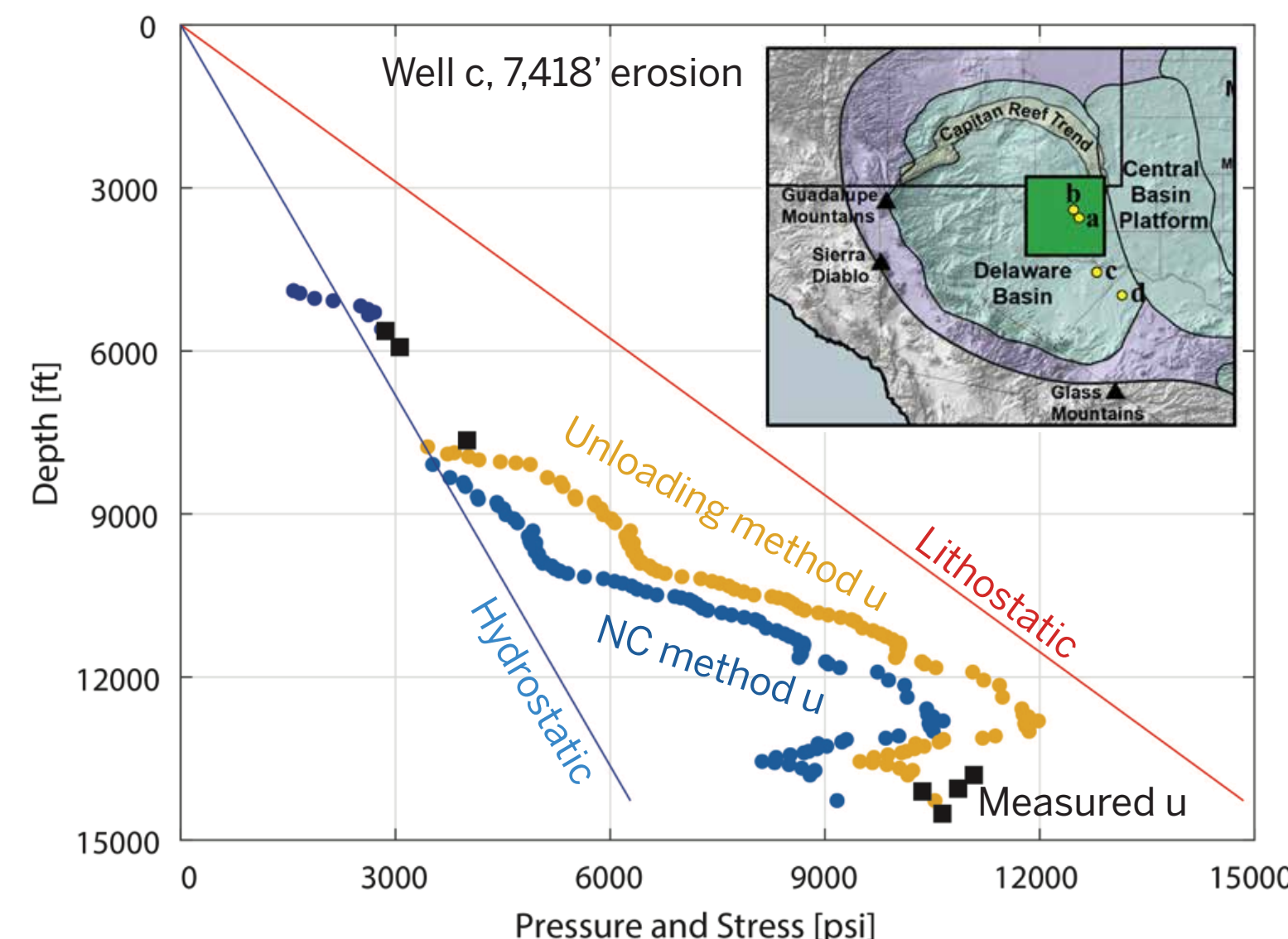


Incorporation of creep and smectite-illite transformation to model field compaction

Field Studies

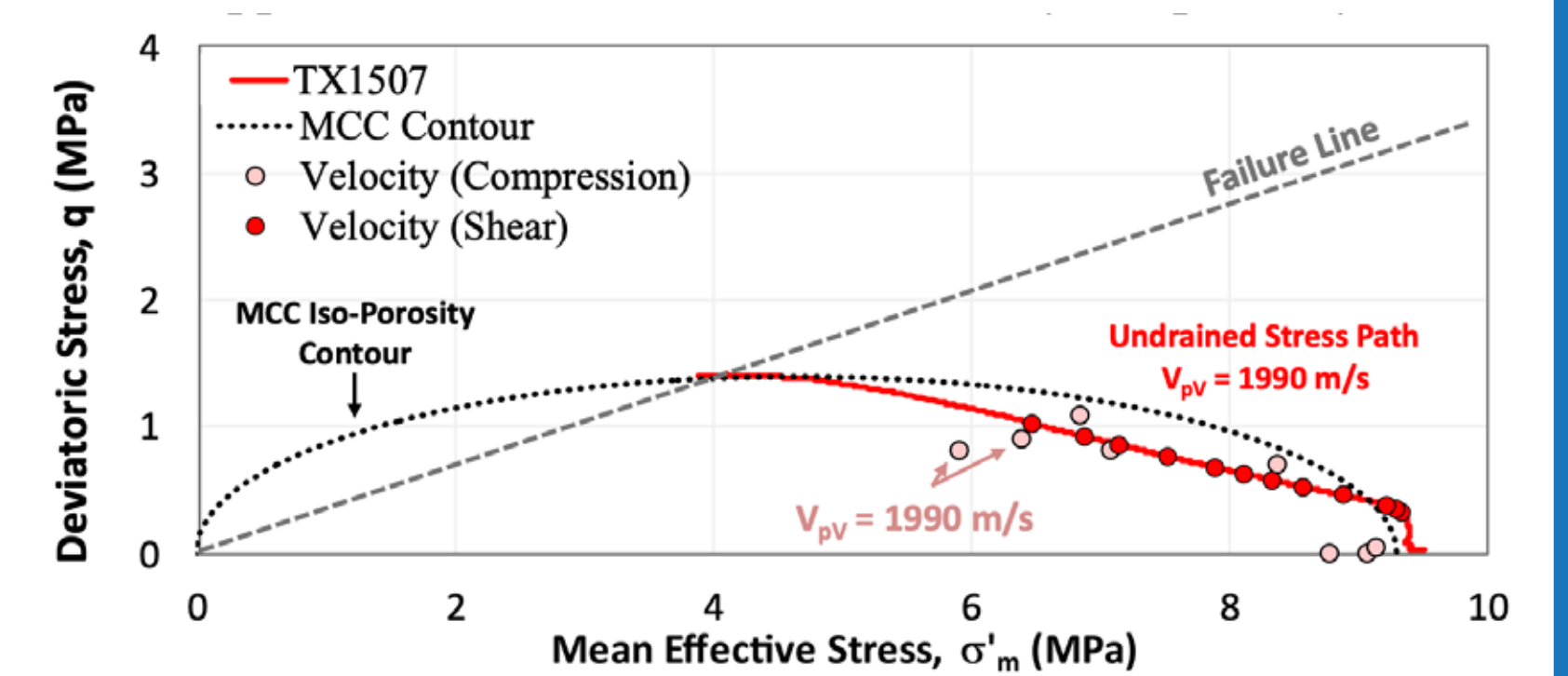


Injection geometries reflect stress perturbations caused by the injection

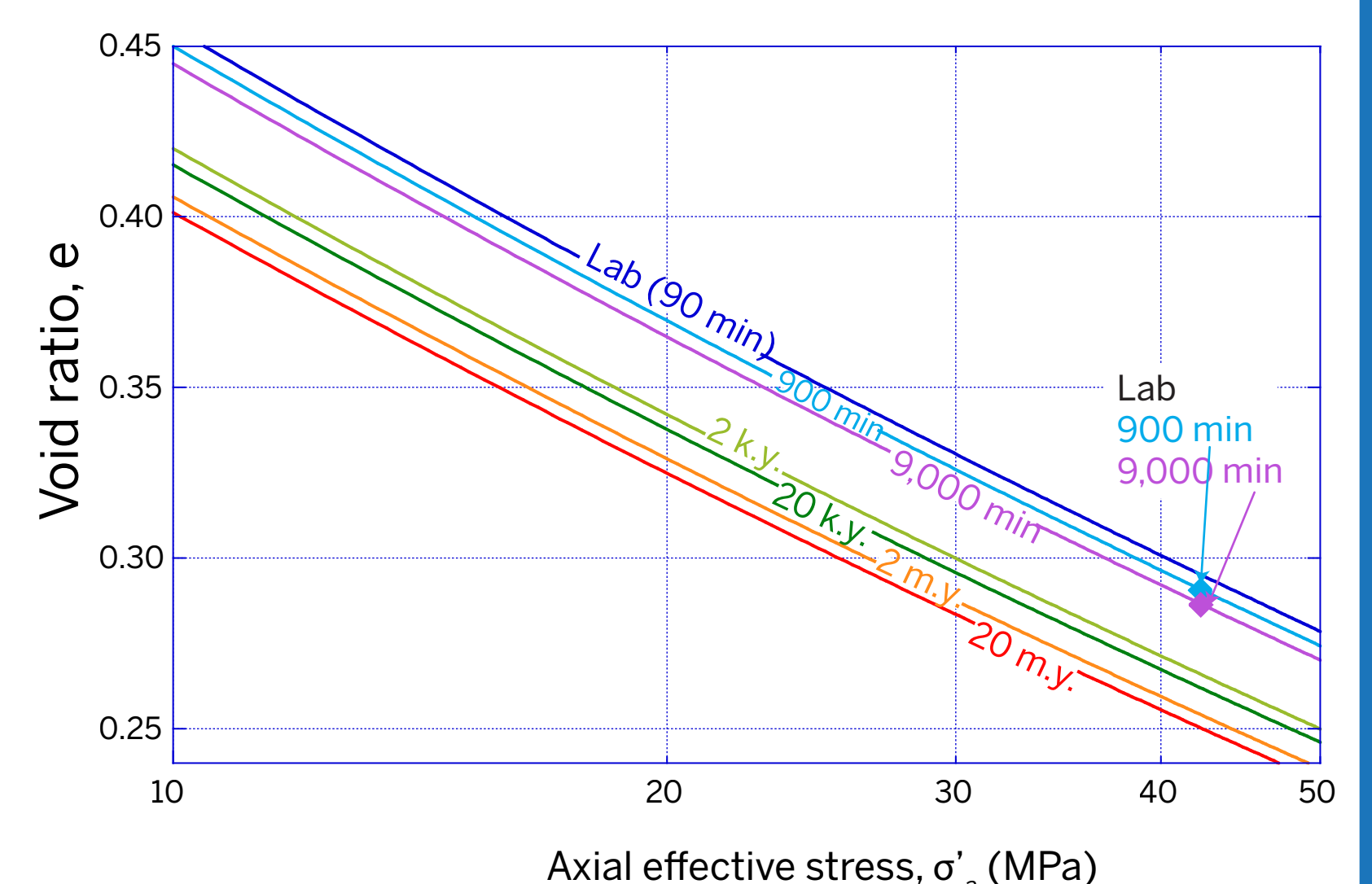


Pressure prediction in Delaware Basin incorporating behavior during unloading

Experimental



P- and shear-wave velocities along drained compression and undrained shear paths



Mudrock creep behavior: Lab measurements and field predictions