



**UNCONVENTIONAL RESERVOIR ENGINEERING PROJECT**  
COLORADO SCHOOL OF MINES



# UREP Phase 2 Proposal

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**UNCONVENTIONAL RESERVOIR ENGINEERING PROJECT**

Advisory Board Meeting, November 13&14, 2014, Golden, Colorado

# Summary

## Duration:

2 Years: October 2014 – September 2016

## Membership Fee:

New Members: \$50,000/year with 2 year commitment

Continuing Members: \$45,000/year with 2 year commitment

## Expected Level of Funding:

\$800K - \$1M



# Focus of the Proposed Work

1. Theoretical and experimental study of phase behavior in confinement  
Bubble point, condensation point, filtration, reservoir fluid composition, ...
2. Matrix to fracture fluid transfer  
Interface conditions, coupling high and low velocity flows, modeling different scales of heterogeneity
3. Incorporating unconventional physics into flow models  
Coupled fluxes, coupled flows, phenomenological flow models, phenomenological coefficients, gradient and non-gradient driven flows, etc. ...



# Focus of the Proposed Work

## 4. EOR Research

What traps hydrocarbons in pores, how to break trapping mechanisms, how to reach trapped oil, how to make it flow...

## 5. Numerical Modeling

COZSim-UREP simulator, DSMC and LB for pore scale modeling, anomalous diffusion, ...

## 6. Pressure and production data analysis, practical issues

Analytical models, PTA/RTA tools for unconventional systems, production data analysis, drainage area/well spacing, well interference...

