

# USGS NSF GRIP Opportunity

● <b>USGS Center:</b>	Eastern Energy Resources Science Center
● <b>Project Title:</b>	Tuscaloosa Marine Shale Assessment
● <b>Project Hypothesis or Objectives:</b>	<p>The Tuscaloosa marine shale (TMS) of southwest Mississippi is potentially an important source of unconventional self-sourced tight oil. As part of its mission, the USGS is studying quality and quantity of undiscovered hydrocarbons reservoired in the TMS, with final assessment scheduled for September 2017. To-date our evaluation suggests source rock quality in the TMS is poor to moderate [avg. &lt;1.0 wt.% total organic carbon (TOC)] and indicates gas-prone kerogen dominates. However, light oil is the dominant produced hydrocarbon from the TMS. In the underlying Lower Tuscaloosa we have identified local occurrence of organic-rich (~8.0 wt.% TOC) oil-prone shales which may potentially source some hydrocarbons produced from the TMS. To test this hypothesis, the intern will collect and analyze oils produced from the TMS and from conventional Lower Tuscaloosa reservoirs. Data from oil analyses will be compared to data from source rock extract analyses of the TMS and underlying shales to determine the source of the produced hydrocarbons.</p>
● <b>Duration:</b>	12 months
● <b>Internship Location:</b>	Reston, VA
● <b>Area of Discipline:</b>	Geology
● <b>Expected Outcome:</b>	<p>Demonstration of oil-source rock correlations in the TMS petroleum system may significantly modify understanding of the TMS as a self-sourced unconventional reservoir and improve the planned USGS assessment. The intern will gain experience in the USGS team assessment process and work environment and receive credit for their individual contributions in assessment reports and publications.</p>
● <b>Special skills/training Required:</b>	<p>The intern will need to work independently to determine potential sampling locations and planning for field logistics. Strong communication skills and academic training in organic chemistry</p>

and petroleum geology are required. Prior coursework in petroleum geochemistry is strongly desired.

- **Duties/Responsibilities:** The intern will identify wells from which to sample oils by using the proprietary IHS database and thru contact with industry representatives. The intern will travel to southwest Mississippi for oil collection and package and ship collected oils to the USGS Energy Analytical Laboratories in Denver. The intern will compile and examine existing oil and source rock geochemistry data. Upon receipt of USGS analytical data from collected oils, the intern will compare oil analyses to source rock analyses to determine oil-source rock correlations.

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