

resource

Online Quarterly RPSEA Member Newsletter

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President's Perspective

Projects remain our focus. With 42 FY2007 projects underway and 19 of our 29 FY2008 projects underway, our first two years' programs are nearly fully in R&D, and our 10 remaining 2008 projects are either certified or nearly so. The response to our recent 2009 solicitations has been strong and the list of proposals is impressive. Our program managers are hard at work as we speak coordinating the review and selection process, and we are eagerly anticipating the selection results in the first quarter of 2010.

Our 2010 draft Annual Plan is making its way through the approval process at NETL and DOE, and we anticipate approval in the very near future to clear the way for our 2010 solicitations. We hope to issue the 2010 RFPs soon after the 2009 selections are determined.

Our projects also are beginning to yield results, which are being disseminated through many avenues, including our UDW TAC meetings, our poster sessions and other events. All of these events can be found on our website calendar in addition to individual e-mail notifications. If you aren't on the e-mail distribution list and would like to be, please contact Danette.

Natural gas remains a hot topic in the national energy debate, and our work at lowering costs and reducing impacts is critical in that regard. In addition to the valuable work under EPCA 2005 Section 999, RPSEA is also participating in other activities to leverage the extensive network of the RPSEA organization. One of the most exciting of these is the work in conjunction with the recent climate conference in Copenhagen described below.

As always, thank you for your valuable support and contribution to this important public/private partnership. This model, proving itself out now in the tangible results being generated, is the future of O&G R&D. The industry led model, working in close cooperation with the research community, provides the relevancy so important to taxpayers. It is your efforts that make it work.

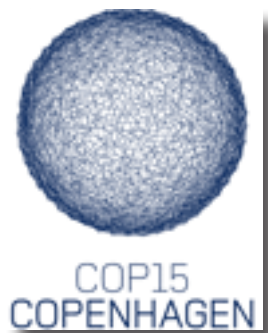


C. Michael Ming
President

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RPSEA's Presence at the 2009 United Nations Climate Change Conference

RPSEA is pleased to announce its support in partnership with the Worldwatch Institute and the American Clean Skies Foundation, with generous support from The Fleischaker Companies, for a presentation made at the United Nations Climate Change Conference 2009. Vello A. Kuuskraa, president of Advanced Resources International, Inc., and a member of the Board of Directors and the Strategic Advisory Committee for the Research Partnership to Secure Energy for America (RPSEA), presented his outlook on *Worldwide Gas Shales and Unconventional Gas: A Status Report* in Copenhagen, Denmark on December 12, 2009. His talk was part of a panel on "The Evolving Role of Natural Gas: An Industry Perspective" during the special Saturday afternoon session on Natural Gas, Renewables and Efficiency: Pathways to a Low-Carbon Economy, in support of the climate change meetings and negotiations underway in Copenhagen.



Kuuskraa's talk discussed how the discovery and development of gas shales and other unconventional gas resources in North America have led to a "paradigm shift" in the outlook for natural gas and the much larger role it could play in reducing emissions of CO₂. Using the North American experience as the example, he discussed how the development of gas shales and unconventional gas could provide similar impacts on energy security and CO₂ emission reductions in Europe, China and other areas with large, prospective gas shale basins. Other presenters included Christopher Flavin, president of the Worldwatch Institute, Aubrey McClendon, CEO of Chesapeake Energy, and Senator Timothy E. Wirth, president of the United Nations Foundation.

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RPSEA's Unconventional Resources Program Wins Best Project Award at the 24th World Gas Conference

At the 24th World Gas Conference, The Global Energy Challenge: Reviewing the Strategies for Natural Gas, held in Buenos Aires, Argentina, the Research Partnership to Secure Energy for America (RPSEA) Unconventional Resources Program was recognized with a best project award for the *New Albany Shale Gas* project. RPSEA's Team Lead, Unconventional Resources Kent Perry presented at the conference, which was attended by more than 3,500 attendees from 83 countries around the world.



The International Gas Union (IGU) hosts the event every three years, which comprises all domains of the gas industry, from the wellhead to the end user, covering special important features, sustainable development, market integration, regulation, and research and development. It is the purpose of IGU to continue in its contribution to a sharper insight on the new key energy and natural gas industry challenges, involving every representative stakeholder in this process, including governments and policymakers.

The *New Albany Shale Gas* project is being performed by a research team led by the Gas Technology Institute and includes Amherst College, University of Massachusetts, ResTech, Texas A&M University, Pinnacle Technologies, West Virginia University and the Texas Bureau of Economic Geology to develop techniques and methods for increasing the productivity of New Albany shale gas wells to a level where the otherwise noncommercial gas resource may become commercially viable.

The primary goal of this project is to identify technical hurdles to successful development of this large gas resource and, through a focused research effort, resolve those issues. All the necessary aspects of developing a shale resource are being integrated into this project. The New Albany shale will require careful consideration of well drilling geometries, accurate formation characterization and completion practices to ensure optimum gas recovery.

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Fellowship/Scholarship Program Recipient Spotlight

RPSEA created the Fellowship/Scholarship Program to establish long-term, industry/education partnerships. RPSEA members Schlumberger and Strata Production Company designate financial resources through RPSEA to award multiple scholarships to the following member universities: Colorado School of Mines, Louisiana State University, New Mexico Institute of Mining and Technology, Stanford University, Texas A&M University, The University of Texas at Austin, The University of Oklahoma and West Virginia University. The most promising students with studies relevant to the oil and gas industry are awarded fellowships to help with their education and/or research activities. Through private funding from these two members, \$240,000 is established for these member universities to provide much needed support for 16 students per year for three years.



New Mexico Institute of Mining and Technology (NMT) graduate student Benjamin Dickinson was awarded a fellowship through the Fellowship/Scholarship Program for the 2008-09 school year. RPSEA spotlights Mr. Dickinson this quarter in the following interview, while wishing him success in his final year at NMT.

1. What was the title of your dissertation?

Sensitivity of Fracture Network Permeability within Flat Lying Lenticular Formations

2. Where did your project take place?

Socorro, New Mexico

3. What school were you attending during the fellowship?

New Mexico Institute of Mining and Technology

4. What was your degree and major while working on the fellowship?

Masters of Science in Petroleum Engineering

Prospective Graduation: May 2010

5. What was the time frame spent on the entire project?

I began working on the project in June 2009, and I will have it completed in May 2010.

6. Why did you pick this focus for your project?

I chose this topic because it incorporated aspects of applied simulation, engineering and geology. Although my research is a small part of a much larger field project, the basis of my study will provide valuable information on the analysis and development of fracture sensitivities.

7. What were the major accomplishments of your project?

The goals of my research were to develop insight on fractured reservoir characterization and the effect of fracture network parameters on reservoir performance.

8. How did RPSEA help you achieve your project goals?

The fellowship I received from RPSEA eased the burden of education related costs and gave me an edge on the successful completion of my project.

9. How have you grown both personally and professionally from your fellowship with RPSEA?

The support from the fellowship has helped me develop an understanding of the impact RPSEA has on both a local and national scale. Professionally, this program has granted me opportunities to attend conferences, network with industry personnel and discuss my project and its relation to concerns faced by industry today.

10. What is your role today?

Currently, I am a research assistant and will be finishing up my last semester of graduate school in the spring (2010) at New Mexico Tech.

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Unconventional Resources Project Highlight

Petrophysical Studies of Unconventional Gas Reservoirs Using High-Resolution Rock Imaging

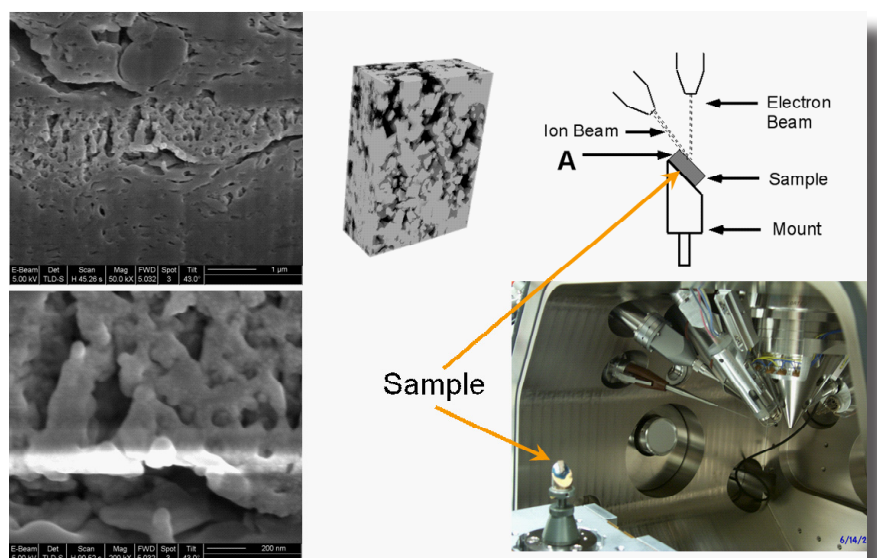
Principal Investigator: Dr. Dimitriy Silin, Lawrence Berkeley National Laboratory

Partners: Lawrence Berkeley National Laboratory, Schlumberger Limited, BP America, Inc., Chevron Corporation

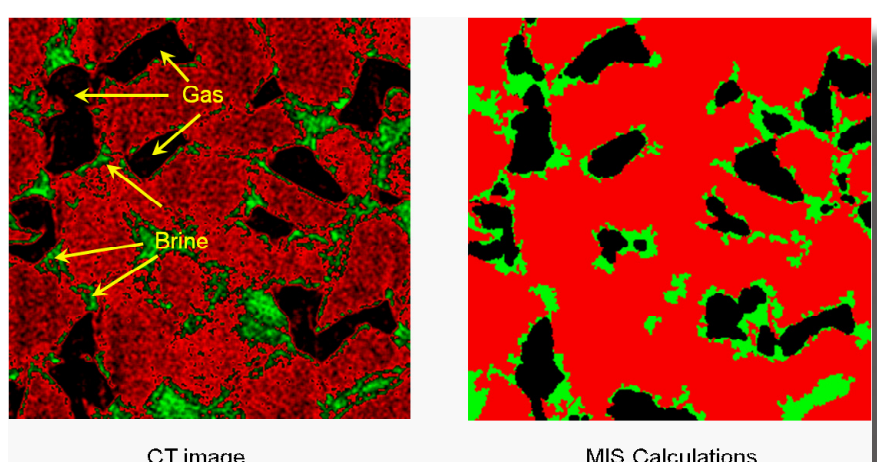
At the ATCE 2009 conference held in New Orleans in October, Dr. Dimitriy Silin with Lawrence Berkeley National Laboratory gave a poster session in the RPSEA booth.

The objective of the project is to determine the physical mechanisms that limit gas recovery from tight rock formations and the means of extending this recovery as far into the future as possible. The approach being used is to acquire high-resolution 3D images of gas-bearing shale rocks using Advanced Light Source (ALS) facility and Focused Ion Beam (FIB) technology and analyze these images using Maximal Inscribed Spheres-type (MIS) methods in order to estimate gas shale and tight sand flow properties at different conditions.

Focused Ion Beam (FIB)



MIS: Pore-Scale Verification



CT image

MIS Calculations

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From the image above it can be seen that the saturation distribution calculated using the maximum inscribed spheres method is close to that of the actual CT image.

Ultra-Deepwater Project Highlight

Ultra-High Conductivity Umbilicals: Paradigm Chance in Conductors Using Carbon Nanotubes

Principal Investigator: Dr. Enrique Barrera, Rice University

Partners: NanoRidge Materials, Inc., Technip, DUCO, Chevron Corporation, Rice University

Project Goal: Develop an electrical conductor suitable for use in under sea umbilicals that has conductivity greater than copper and allows for tie-back distances approaching 100 miles.

Need: When considering high power requirements and long umbilical tie-back distances, nanotechnology is a new technology that could enable high power transfer for long tie-back distances where lightweight and high power transfer is required.

Project Concept: Develop a conductor utilizing carbon nanotubes imbedded in a polymer.

Challenges:

1. Obtain conductive carbon nanotubes.
2. Integrate the carbon nanotubes into a suitable polymer.
3. Use alignment and extrusion techniques to maximize the conductivity of the cable.
4. Develop methods to connect the polymer cable to conventional conductors.

Project Deliverables:

1. Produce a one foot long conductor that has 4X the conductivity of copper (2.4×10^{-6} ohm cm).
2. Produce a report documenting the program results.
3. Identify remaining technical hurdles.

Results:

1. Produced polymer wire containing carbon nanotubes with measured conductivity of 1×10^{-1} ohm cm.
2. Conducted a workshop reviewing the project results. (December 10, 2009)
3. Developed a technique to extrude polymers containing carbon nanotubes while applying an electric field.

Next Steps:

1. Prepare technical report.
2. Develop plan to move forward with enhancing conductivity.

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Calendar of Events

2/11-12	NAPE Expo, Houston
3/2	Ultra-Deepwater Floating Facilities TAC Quarterly Meeting, Bellaire, TX
3/3	Ultra-Deepwater Subsea Facilities TAC Quarterly Meeting, Bellaire, TX
3/4	Ultra-Deepwater Flow Assurance TAC Quarterly Meeting, Bellaire, TX
3/9	Ultra-Deepwater Drilling & Completion TAC Quarterly Meeting, Houston
3/10	Ultra-Deepwater Systems Engineering TAC Quarterly Meeting, Houston
3/11	Ultra-Deepwater Joint Geoscience and Reservoir Engineering TAC Quarterly Meeting, The Woodlands, TX

Click here for more information, to register and view the [complete calendar](#).

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