Governor's Office of Energy Development

FY2016 Building Block Request

Utah Energy Research Triangle

$200,000 [One-time]

Dr. Laura Nelson, Executive Director

Utah Energy Research Triangle

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- **One-Year Competitive Research Grants addressing issues faced by Utah's energy sector**

- ***FACULTY*** level collaborative research (Three $128k awards)
- Faculty-mentored ***STUDENT*** research (Four $15k awards)

Background on the Research Triangle

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- First cycle **funded by:**
  - *Utah Cluster Acceleration Partnership Grant: $200K*
  - *Office of Energy Development: $45K*
  - *Utah Science, Technology & Research Initiative: $200K*
- Grants awarded in **May of 2014**

*The Energy Research Triangle Program (UERT) is a **Priority of Governor Herbert, as outlined in his 10-Year Strategic Energy Plan** (2011). UERT is directed and managed by the Governor's Office of Energy Development*

U of U, USU, and BYU Professors Conducting Research to Advance Utah's Energy Sector

- **Principle Energy Issues Grants [Three $128K One-Year Awards]**
  - ERT professors must address issues or innovations critical to Utah's energy development future
  - Projects addressing Waxy Crude, Advanced Coal, Winter Ozone, Productive Use of CO2

"Our labs have operated so well together that we are currently making plans to target federal grant applications. We believe that ***continuation of the Energy Research Triangle is highly important in providing direction and support for research on Utah issues*** *as well as linking the U of U, Utah State, and BYU."*

– Dan Ess, Ph.D.

Fostering the Next Generation of Energy Industry Leaders

- **Energy Leadership Scholars Grants [Four $15K One-Year Awards]**
  - One student at each of the three universities, and one tribal member.
  - Students become invested in finding solutions for Utah's natural resource sector, specifically energy development

*"A program like the Governor's Energy Leadership Scholars program is unique in that **students can come up with the research ideas themselves, and then carry out practical application-based research on issues that affect their community and state**. It's very hard to overstate the value of a program such as this."*

– Taylor Sparks, Ph.D.

Case Study: *A Path to Unlocking the Potential of Uinta Basin Waxy Crude*

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- Current blending of waxy crude for transport is ~15% waxy and 85% light, which requires huge amounts of light to move Basin waxy.
- In UERT funded research Dr. Roehner has discovered that ***Anadarko's condensate can be blended at a rate of 70% waxy and 30% condensate.***
- Not only does this invert the waxy-light ratio, but it does so with a light product that's locally available in meaningful quantities.
- Should it continue to prove commercially viable, ***this UERT-funded advance could be a game-changer.***

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Characterization of Waxy Crude Deposition in Pipelines

"The results generated through the ERT project will act as a seed to attract industrially based funding from local and national companies in an effort to continue to study the Uinta Basin crude oils."

- Michael Hoepfner, Ph.D.

Computer Modeling of Winter Ozone Formation in the Uintah Basin

"Because of the UERT project, Prof. Hansen (BYU) and myself (USU) realized that our groups could work together on certain aspects of the chemistry of ozone formation at low temperatures, and have been notified by the Utah Division of Air Quality that we will be awarded an additional grant for this work."

- Marc Mansfield, Ph.D.

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Materials for layered photovoltaics using protein enclosed nanocrystals

"My coursework has been of great worth and provides the basis for my understanding, but nothing has taught me more about what it actually means to be a physicist than researching in Dr. Colton's lab. There is only so much you can learn from a book, and so much more that you can learn from hands on experience working on a meaningful project in your field." – Stephen Erickson

Questions?

Dr. Laura Nelson
Executive Director, Governor's Office of Energy Development