



2009 DOE Nuclear Energy University Programs Workshop

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U.S. Nuclear Regulatory Commission
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Two Grant Programs:

- **\$15M program includes:**
 - Faculty Development
 - Fellowships and Scholarships
 - Trade School/Community College Scholarships
- **\$5M program focuses upon:**
 - Courses, studies, training, curricula
 - Disciplines pertaining to nuclear safety, security, and environmental protection, etc. deemed critical to the NRC mission

2009 Awards

- **\$15M:**
 - 130 proposals; 59 awards (45%)
 - An estimated 350 students will receive a scholarship or fellowship
 - Expected award date: August 2009
- **\$5M:**
 - 130 proposals; 43 awards (33%)
 - Award completion date: August 2009
- **OVERALL: 102 awards made to 70 institutions in 29 states, DC, and Puerto Rico** ³

Award Parameters

- **Scholarships**: Up to 2 years @ up to \$10K per year per student (\$200K max. per award)
- **Fellowships**: Up to 4 years @ up to \$50K per year per student (\$400K max. per award)
- **Faculty Development**: Three years @ up to \$150K per year when matched at \$50K per year by the university (\$450K max. per award; competitively renewable for 3 additional years)
- **Trade School/Community College Scholarships**: One year at up to \$10K per student (\$150K max.)
- **Curriculum Development**: Up to 2 years, no maximum but typically up to \$200K per year (new for 2010)
- **ALL awards are made to the institution not the individual**

FY 2009 \$15M Scholarship Awards (18)

- **Louisiana State**
- **Georgia Tech**
- **New Mexico**
- **Utah State**
- **Illinois**
- **Texas A&M-Kingsville**
- **Alcorn State**
- **SC State**
- **NC State**
- **Bloomsburg**
- **Purdue**
- **City University of NY**
- **Oregon State**
- **Colorado School of Mines**
- **Idaho State**
- **Francis Marion**
- **Texas-Austin**
- **South Carolina**

(\$2.910M)

FY 2009 \$15M Fellowship Awards (15)

- **Texas A&M**
 - **Virginia Tech**
 - **New Mexico**
 - **Texas-Austin**
 - **Maryland**
 - **Pittsburgh**
 - **Penn State**
 - **Polytechnic of Puerto Rico**
 - **NC State**
 - **Duke**
 - **Michigan**
 - **Ohio State**
 - **Tennessee**
 - **Missouri-Columbia**
 - **Wisconsin**
- (\$5.465M)**

FY 2009 \$15M Faculty Development Awards (11)

- **Penn State**
- **Oregon State**
- **City University of NY**
- **Cal-Berkeley**
- **Utah State**
- **Maryland**
- **Virginia Tech**
- **Tennessee**
- **Michigan**
- **Rensselaer Polytechnic Inst.**
- **Florida**

(\$4.8M)

FY 2009 \$15M Trade and Community College Scholarships (15)

- Florence-Darlington Technical College (TC)
- Wharton County Junior College (JC)
- Lakeshore TC
- Texas State TC
- Central Virginia Community College (CC)
- Idaho State
- Linn State TC
- Victoria County JC
- Aiken TC
- Lake Michigan College
- Brazosport College
- Columbia Basin College
- North Georgia TC
- New Mexico JC
- Central Florida CC

(\$1.825M)

FY 2009 \$5M Curriculum Development - 1st Year Awards (21)

- Alabama A&M
- Florence Darlington
- Florida Memorial
- Francis Marion
- Howard
- Indian River State College
- Louisiana State
- MIT
- Rensselaer Polytechnic Institute
- Roger Williams
- Texas A&M
- Texas State College – Waco
- City College of NY
- Penn State
- Cincinnati
- Missouri-Columbia
- UNLV
- Texas – Permian Basin
- Wisconsin
- Worcester Polytechnic Institute
- Clemson

(\$2.557M)

FY2009 \$5M Curriculum Development - 2nd and 3rd year Awards (22)

- | | |
|--|---|
| <ul style="list-style-type: none">• Catholic• Georgia Tech• Polytechnic (NY)• Rochester Institute of Technology• Texas A&M• Tuskegee• Puerto Rico – Mayaguez• Rhode Island• Tennessee• Texas – Austin• Virginia Commonwealth• Wilberforce | <ul style="list-style-type: none">• Alcorn State• Duke• New Mexico State• Rutgers• Southern Polytechnic State University• Texas Southern• Cal – Berkeley• Denver• Illinois• Pittsburgh |
| (\$1.324M) | (\$.836M) |

A Few Examples of Faculty Development Research

- **Degradation of fuels – Penn State**
- **Plasticity and damage mechanisms of polycrystalline materials used in nuclear applications– Utah State**
- **Computational/theoretical reactor physics for analyzing core neutronics and burnup – Virginia Tech**
- **Bundle core design, reload licensing and operational management of LWRs – Tennessee**
- **Measure and model properties of radiation from electron beams generated in high intensity laser-plasma interaction – Michigan**
- **Experiments and modeling of two-phase gas-liquid flow - Florida**
- **Degradation of materials from corrosion and high-energy particle irradiation – California - Berkeley**

Examples of Curriculum Development Projects

- **Nuclear Criticality Safety**
- **Biological Effects of Radioactivity**
- **Interdisciplinary Nuclear Power Operations**
- **Advanced Nuclear Environmental Engineering and Science**
- **Environmental Impact Assessment Involving Nuclear Materials**
- **Radiation Protection Physics and Radiation Biology**
- **Graduate Certificate Program in Nuclear Power Engineering**
- **Introduction to Nuclear Reactor Physics**
- **Materials for Advanced Nuclear Energy**
- **Radiation Instrumentation**

Omnibus Language

- **The Omnibus legislation provided DOE, NRC and NNSA \$5M each (from the \$15M each) for an “Integrated University Program”**
- **“Support multi-year research projects that do not align with programmatic missions but are critical to maintainingnuclear engineering and science”**
- **To implement congressional language, NRC, DOE, and NNSA met in early June to coordinate our efforts**
- **For FY 2009, NRC awarded \$5M for research projects through its Faculty Development Program**
- **Coordination among the three agencies is planned for FY 2010**

Take Aways

- **FY 2009 congressional language authorized NRC grant program for 10 years**
- **NRC grant announcements are planned to be issued earlier than past years so awards can be made sooner in 2010**
- **OMB wants grants to be for “nuclear research and development “ not “nuclear education”**
- **FY 2010 curriculum grants will be for two years with all funding provided in the first year (no mortgages)**
- **NRC Grant Workshop Day in Dallas, Texas, September 24th, as part of the “MSI: Creating a Presence” Workshop being held September 21-24, 2009**

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