

UNIVERSITY OF WYOMING
Energy Science Graduate Stipends and Fellowships
From the Office of Academic Affairs
NOVEMBER 1, 2011

2011 Session Laws, Chapter 88, Section 346(d)(ii)(D)

To the Joint Appropriations Committee, Joint Minerals, Business and Economic Development
Committee and Governor Mead

During its 2011 session, the legislature appropriated \$6,247,930 in Abandoned Mine Lands funds to UW's Office of Academic Affairs for energy science graduate stipends and fellowships. The funds are to be expended over multiple years with no more than \$1 million expended per year.

For FY 2011-12, approximately \$350,000 in graduate stipends was allocated through a competitive proposal process. The funds were held to a reduced level in the inaugural year because of UW's intent to recruit new, highly talented students and the optimum time for doing so is during the fall semester. In future years, annual expenditures will be ramped up toward \$1 million as the program is better aligned with the graduate student recruiting season. Moreover, all future funding will support students newly recruited to UW. The infusion of academic talent is expected to have a significant impact on energy research in several fields.

The legislation also stipulated that, through Grade Point Averages (GPA) and Graduate Record Examine (GRE) scores, "only highly qualified candidates are awarded energy science graduate stipends or fellowship opportunities." UW addressed this provision by examining the GRE scores for the students under consideration. The scores of the stipend and fellowship recipients were *extremely high*, with an average score of 1330 and several over 1400. To place these in context, the minimum GRE score for admission to UW is 900, and a score of 1100 represents a strong student in engineering and the sciences.

The legislation required UW to set minimum GPA and GRE scores; they were 3.0 and 1200 respectively. Since all applicants took the GRE, scores from that test are a better indicator of the relative strengths of applicants than GPAs, which can vary considerably in how universities determine them. As a result, GRE scores were given greater consideration in assessing applicants than GPAs. As noted above, the scores of the graduate students who received stipends were well above the minimums, other than a student from France who had a 2.93 GPA but an outstanding GRE score of 1370. The GRE score clearly demonstrated his considerable abilities and raised the question of whether his rather low GPA reflected differences in how grades are given in the two countries.

For FY2011-12, UW supported 14 students through the Energy graduate assistant (GA) program. The competition was keen as a total of 70 proposals were submitted. In determining awards, UW emphasized programmatic breadth, both in terms of energy

topics as well as departments and colleges. A breakdown of GA support by college includes:

Agriculture and Natural Resources	4
Arts & Sciences	6
Engineering and Applied Science	3
Business	1

The energy science GA stipends permit UW to pursue important energy research for the state while raising the stature of graduate education by recruiting outstanding graduate students. The awards support fundamental research in enhanced oil recovery, chemistry, carbon-dioxide sequestration, coal bed methane, nuclear power, wind, reclamation, wildlife and energy economics. The summaries below offer some additional details about the students and nature of their research.

College of Agriculture and Natural Resources

Of the four graduate students, two are pursuing masters of science degrees in agriculture and applied economics; one in plant science, agronomy and restoration ecology; and one in renewable resources and soil science. Their research topics are economic efficiencies of conservation easements, water produced from coaled natural gas, and noxious and evasive weeds.

College of Arts and Science

Of the six graduate students, two are pursuing doctorates in chemistry and one each in geology and geophysics, mathematics and statistics. One student is working toward a master's degree in geology and geophysics. They are assisting with research in thermodynamic cycling in high surface area materials, enhanced solar cell efficiency, carbon sequestration in brine reservoirs and saline aquifers, coal combustion, and fission processes for nuclear fuel reactors.

College of Business

This graduate student is pursuing a doctorate in economics and finance and researching market structures for non-renewable resources.

College of Engineering and Applied Science

These three students are working toward doctorates in chemical and petroleum engineering and mechanical engineering. They are researching recoveries of residual oil, wind plant development and hydrocarbon recovery.