

Outside Witness Testimony  
**SENATE APPROPRIATIONS COMMITTEE HEARING ON “DRIVING  
INNOVATION THROUGH FEDERAL INVESTMENTS”**

Michael R. Gottfredson, President  
University of Oregon  
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Chairwoman Mikulski, Ranking Member Shelby, Senator Merkley, and Committee Members, I am Michael Gottfredson, President of the University of Oregon.

I want to thank the Chairwoman and all members of the committee for the opportunity to submit testimony about the federal government-university partnership that has been at the heart of our nation’s economy for so long.

Government supports higher education based on the idea that economic and social mobility for individuals results in the betterment of society. It is this theory of the relationship between the government and individuals that impressed Abraham Lincoln, who took time out from the Civil War in 1862 to sign the Morrill Act, the legislation that created land grant universities, and who in 1863 signed the Act of Incorporation that created the National Academy of Sciences. To this day, this national commitment made in wartime undergirds the federal-higher education partnership that has continued to make our nation’s future so eternally bright.

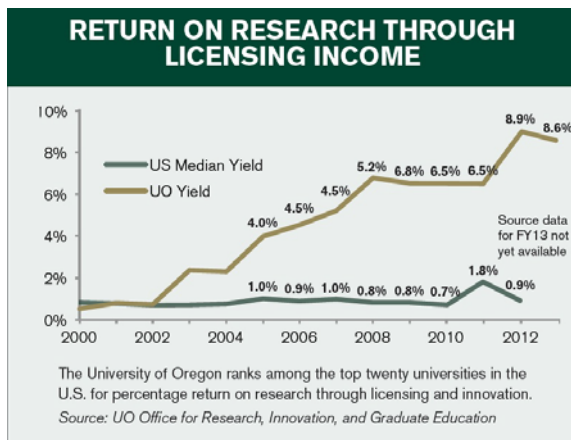
The federal government has many responsibilities, foremost among them is the safety and security of our people. The *economic* security of the United States is threatened by the erosion of federal support for research and higher education, added cuts due to sequestration, and the greater investments being made by other countries. The attention this hearing brings to issues of innovation is important and an opportunity for policy makers to make the case for closing the innovation deficit — the widening gap between the level of government funding for research and higher education and what that investment needs to be if the U.S. is to remain the world’s innovation leader.

The state of Oregon’s economy is especially susceptible to economic downturns. With a large land mass, small population, straitened public budgets, and an economy historically based on natural resources, our state is also increasingly known for its world class tech industry, varied exports and manufacturing activity, and our sustainability principles. The state of Oregon greatly benefits from the presence of four research universities located along the Willamette Valley corridor whose missions of education, service, discovery and innovation contribute in remarkable ways to the economy.

Collectively, the University of Oregon, Oregon State University, Portland State University and Oregon Health & Science University attracted more than \$500 million in research grants in 2013. The ability of our institutions to inspire this federal investment through sponsored research was a protective factor for our economy particularly during the recession that began in 2008 and the provision of American Recovery and Reinvestment Act funds for research.

The federal government’s commitment to student aid is also essential to our state and our ability to nurture and prepare talent to contribute to the nation’s future prosperity. In 2012–13, more than \$23 million in Pell Grants was awarded to 5,394 University of Oregon students. Almost 38 percent of Oregon residents attending the University of Oregon receive some Pell Grant support. Lower income students at Oregon’s largest universities benefited from \$100 million dollars in Pell Grants during the 2011–12 school year. Without that financial help, more than 22,000 students at Oregon State University, the University of Oregon, and Portland State University would face a greater struggle to pay for college.

Thanks to federal support for research and higher education, *the University of Oregon has been able to make positive contributions to Oregon’s economy.* We are proud that the University of Oregon is among the top universities in the nation for translating discovery into practical applications per federal research dollar invested. In 2013, 22 UO-affiliated companies created 275 jobs, which added \$27.3 million to the state’s economy.



We appreciate that the Portland Business Alliance and chambers of commerce located in Eugene, Albany, and Springfield have endorsed principles for reauthorization of the America COMPETES Act. In our state, we are building an innovation culture that will leverage federal investment to create jobs and new economic activity.

One example of such enterprise is the **Oregon Nanoscience and Microtechnologies Institute (ONAMI)**. ONAMI is Oregon’s first Signature Research Center. A deep collaboration among Oregon universities, the Pacific Northwest National Laboratory (PNNL), industry, and the investment community, ONAMI accelerates research and commercialization of materials science and related device, and system technologies in Oregon. Since 2004, awards to ONAMI research members have grown four-fold, the number of companies using its NanoNet facilities have grown three-fold, and companies in ONAMI’s gap fund portfolio have raised over \$130 million in leveraged funds. Since 2005, ONAMI member researchers have filed 294 Invention Disclosures and received 43 Patents in nanoscience or microtechnology. Licenses and licensing revenue are also climbing.

The University of Oregon is a founding member of ONAMI and leads the **Safer Nanomaterials and Nanomanufacturing Initiative**. Research under the initiative merges the principles of green chemistry and nanomaterials design and synthesis strategies to produce safer nanomaterials and more efficient nanomanufacturing processes. The result is the production of nanoparticles and nanostructured materials for applications in fields such as photovoltaics, nanoelectronics, and sensors.

A long-term federal commitment to this strategy is required because it is simply not practical to test all significant permutations of nanoparticles (composition, size, shape, surface functionalization, etc.) in bioassays to assess safety.

The University of Oregon and Oregon State University have joined together to use federal innovation investments to strengthen the state and nation's economic security through the Center **for Sustainable Materials Chemistry**. Oregon State University leads this research initiative, which is a collaboration chiefly between Oregon State University and the University of Oregon with additional partners at Washington University (St. Louis), Rutgers University, University of California, Davis, and University of California, Berkeley.

The Center for Sustainable Materials Chemistry is an NSF-sponsored Phase II "Centers of Chemical Innovation" program that expands upon one of the key successes of Phase I (2008-2011), the joint OSU-UO Center for Green Material Chemistry. The Center offers several student and professional development opportunities in the areas of education and science outreach. Industry is engaged through sponsored research programs and student internships. The Center offers unique programs to train the next generation of innovators, while also promoting the translation of basic research for societal benefit. The Center conducts curiosity-driven and use-inspired research to enhance the sustainable chemistry tool box with new methods and new techniques that will advance the scientific enterprise and transform the next generation of products while preparing students to become the next generation of green chemists.

A final example of how federal innovation investments grow the economy involves the establishment of Oregon's **Regional Accelerator & Innovation Network (RAIN)**. The Oregon Legislature in 2013 provided funding to the University of Oregon and Oregon State University for RAIN. Oregon RAIN leverages the regional strengths of the South Willamette Valley to generate innovation-based companies. Partners include the state of Oregon, University of Oregon, Oregon State University, the Eugene Area Chamber of Commerce and the South Valley Regional Solutions Center, as well as the cities of Eugene, Springfield, Corvallis and Albany, and economic development organizations. Mixed-use spaces near existing university research facilities provide a mix of fully equipped labs and offices, financing assistance and business consultation services. RAIN provides emerging companies with the human resources and infrastructure they need to succeed and helps researchers and technologists spin off new private companies that create jobs for Oregonians.

These are just a few of the ways that Oregon institutions have applied federal support to power the economy, nurture talented people, and create jobs and new economic activity.

But, more remains to be done. Oregon's research institutions suffered a \$68 million reduction in research grants as a result of sequestration in 2013. While I am proud of the significant commitment my institution makes to student aid and our ability to leverage the Federal Pell Grant program through the University of Oregon's Pathway Oregon program, I am acutely aware that eroding federal support for student aid threatens educational attainment. The single greatest threat to an Oregon student's ability to finish a degree is financial insecurity.

Thank you for showcasing the ways that the federal government drives innovation through federal investment. Your commitment is impressive. It is in keeping with the animating spirit of public higher education that has fueled our nation's prosperity ever since federal legislation created land grant universities and the national commitment to public research universities. Higher education is the key to individual social and economic mobility, and as a consequence, to

the general public interests of our society. I thank you for holding this hearing and look forward to a renewed partnership to close the innovation deficit.

Contact information: University of Oregon President Michael R. Gottfredson is available at [pres@uoregon.edu](mailto:pres@uoregon.edu) or 541-346-3036.