Public Research University Data and Trends: U.S. and Montana

National Landscape

Public research universities educate and train a large proportion of the Nation's scientists and engineers, awarding 34% of all baccalaureates and more than half of the doctoral degrees conferred by U.S. universities in 2009. In 2009, public research universities performed over 60 percent of the $32.6 billion of academic R&D funded by the Federal Government. In FY 2010, research at public universities led to 436 new start-up companies, 2,654 new technology licenses, 10,904 applications for new patents, and 2,625 patents.

Enrollment and Funding

Enrollment at the Nation's 101 major public research universities[1] has been on the rise, increasing by nearly 13 percent between 2002 and 2010, and enrollment among *all higher education institutions* is projected to increase an additional 16 percent by 2019. For Montana's 1 major public research university,[2] enrollment increased 6 percent between 2002 and 2010.

In all but seven states,[3] appropriations have either declined or have not kept pace with enrollment and inflation, and inflation adjusted state funding per enrolled student dropped an average of 20 percent nationally at major public research universities between 2002 and 2010. In Montana, funding per enrolled student declined 20 percent to $4,645 during this period. Among all 50 states in 2010, Montana ranked number 45 in per-student funding for its major public research university. Trends in enrollment and per-student funding for public research universities for all 50 states can be found in the table on pages 20-21 of the NSB companion report or via a sortable version of this table available for download on the companion report Web site.

State Appropriations and Tuition

State appropriations contribute to the ability of the Nation's major public research universities to charge, on average, over $30,000 dollars less in tuition and fees for state residents than their private counterparts. If per-student state appropriations continue to decline, tuition prices likely will increase in order to maintain the education, research, and service missions of public research universities. Ongoing tuition increases and a greater reliance on tuition and fees from out-of-state and international students to offset declining state appropriations are likely to adversely impact the ability of students from lower- and middle-income families to access an affordable, world-class science and engineering education.

Education and Research Capacity

Reductions in the revenue of public universities and gaps in salary between public and private research universities also have the potential to lead to an outflow of talented faculty and students at public research universities and a reduced research capacity. This could result in a greater concentration of talent and R&D in fewer geographical locations, and at fewer universities, with smaller and less diverse student bodies. This trend also could have a substantial negative impact on economic and workforce development at the local, state, and national levels.

Science and Engineering Indicators 2014

In future editions of *Science and Engineering Indicators*−the National Science Board's (NSB) biennial report on policy neutral, quantitative information about U.S. science, engineering, and technology−the NSB intends to expand the treatment of higher education institutions while providing greater depth of analysis specific to public research universities. The NSB seeks to present consistent and well-defined data on higher education that will facilitate comparisons over time and provide a factual basis for sound policy deliberations.

Other Montana-based Data: Additional Montana-related data and trends can be found in chapter 8 of *Science and Engineering Indicators 2012*, regularly published data updates on the National Center for Science and Engineering Statistics (NCSES) Web site, and in the NCSES state profiles.

Contact: To download an electronic copy of the report, *Diminishing Funding and Rising Expectations: Trends and Challenges for Public Research Universities*, please visit the NSB companion Web site. If you have any questions regarding the companion report or the data discussed above, please contact Dr. Matthew Wilson at mbwilson@nsf.gov or 703-292-4510. To learn more about the NSB, please visit the NSB Web site.

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[1] The 101 major public research universities were either among the top recipients of academic R&D funding in the country or the leading recipients in their state.

[2] Montana's major public research institution(s): Montana State University

[3] The following states did not experience a per-student funding decline between 2002 and 2010: New York (+72%), Wyoming (+62%), Alaska (+10%), North Dakota (+4%), Louisiana (+3%), Delaware (+1%), and North Carolina (0%).