

**Calendar No. 143**

109TH CONGRESS }  
*1st Session* }

SENATE

{ REPORT  
109-94

THE MINORITY SERVING INSTITUTION DIG-  
ITAL AND WIRELESS TECHNOLOGY OP-  
PORTUNITY ACT OF 2005

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R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND  
TRANSPORTATION

ON

S. 432



JUNE 27, 2005.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED NINTH CONGRESS

FIRST SESSION

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### THE MINORITY SERVING INSTITUTION DIGITAL AND WIRELESS TECHNOLOGY OPPORTUNITY ACT OF 2005

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JUNE 27, 2005.—Ordered to be printed

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Mr. STEVENS, from the Committee on Commerce, Science, and  
Transportation, submitted the following

### R E P O R T

[To accompany S. 432]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 432) to establish a digital and wireless network technology program, and for other purposes, having considered the same, reports favorably thereon without amendment and recommends that the bill do pass.

#### PURPOSE OF THE BILL

The purpose of the bill is to establish a \$250 million per year grant program within the National Science Foundation (NSF) from fiscal years 2006 through 2010 to strengthen the ability of minority-serving institutions (MSIs), which include Historically Black Colleges and Universities (HBCUs), Hispanic-Serving Institutions (HSIs), tribal colleges and universities (TCUs), Alaska Native-serving institutions, and Native Hawaiian-serving institutions to provide instruction in digital and wireless network technologies, and enhance the nation's digital and wireless infrastructure by increasing the national investment in telecommunications and technology infrastructure at these institutions.

The bill is designed to close the "economic opportunity divide" that exists between the graduates of MSIs and graduates of other institutions of higher learning, and thus, improve the quality of education for students at MSIs. These institutions will continue to play an important role in providing the nation with a well educated and talented workforce.

The bill would allow eligible institutions the opportunity through grants, contracts, or cooperative agreements, to acquire equipment,

instrumentation, networking capability, hardware and software, digital network technology, and wireless technology/infrastructure to develop and provide educational services. The grants also would be used for such activities as campus wiring, equipment upgrades, technology training, and hardware/software acquisition. MSIs could use the funds to offer its students universal access to campus networks, dramatically increase their connectivity rates, or make necessary infrastructure improvements.

Through a peer-reviewed process, and in consultation with the Director of the National Science Foundation, eligible institutions could receive up to \$2.5 million per year with a 25 percent cost-sharing (not to exceed \$500,000). This matching requirement, though, would be waived for any MSI with an endowment of less than \$50 million.

#### BACKGROUND AND NEEDS

##### *Historically black colleges and universities*

In October 2000 the National Telecommunications and Information Administration (NTIA) released a report, *Historically Black Colleges and Universities: An Assessment of Networking and Connectivity*. The report was the product of a study to gain an overall perspective of the networking capabilities and connectivity of HBCUs, and to obtain data that would evaluate the capacity of HBCUs to function as part of the national global network. The study was sent to 118 colleges and universities. Eighty colleges (68 percent) responded.

The report found that 88 percent of the respondents had access to T-1 lines, which provide a bandwidth of a specific speed rate and capacity suitable for basic functions, from their local Internet service providers and operating companies. Forty-three percent of the respondents had Asynchronous Transfer Mode technology that allows for greater bandwidth and broader Internet technology access. Of the 43 percent that had such access, only 45 percent indicated they used the technology. Twenty-nine percent of HBCUs reported having access to wireless and 43 percent of those with access were using it.

These technology restrictions limit HBCUs' abilities to utilize existing technology applications fully and connect with other institutions of higher education. For example, many schools do not have video streaming capability. Only 17 percent of the respondents reported minimal use of collaborative groupware, online registration, e-commerce, and other applications. Fewer than 15 percent of the respondents offered distance-learning programs. HBCU connectivity with libraries, State college systems, the Federal government, and other resources remains limited.

In addition, the study found limited student computer ownership. No HBCU reported requiring computer ownership, and only 15 percent recommended that students bring their own computers to campus. Of the respondents, 60 of the schools estimated that 25 percent of their students owned computers, and 13 schools reported that no students owned computers. Over 75 percent of HBCUs indicated that their students rely on the universities to provide computers. However, only 50 percent of the respondents reported that they provide students access to computers in computer laboratories,

libraries, classrooms, and other locations, while 45 percent indicated that they had dormitory common areas with access to the campus backbone.

The NTIA report suggested that the following goals must be addressed: (1) improvement of high-speed connectivity rates; (2) a dramatic increase in student computer ownership; (3) improvement of HBCUs' strategic planning process; and (4) willingness to incorporate innovative technologies into campus networks.

#### *Tribal colleges*

Tribal colleges also have demonstrated a need for improved technology infrastructure. For example, only one tribal college currently has funding for high bandwidth connectivity. All tribal colleges have some degree of T-1 access, but most only have fractional T-1 access. In addition, the NTIA report found that tribal colleges struggle to hire and maintain computer technicians, offering salaries at half of the industry averages.

#### *Hispanic-serving institutions*

HSIs are two- and four-year colleges and universities whose Hispanic-American student enrollment is 25 percent or greater of total enrollment. Hispanics represent approximately 14.5 percent (3.6 million) of the total traditional college-age population. By 2006, Hispanic undergraduates are expected to outnumber African-American undergraduates for the first time. Over one million Hispanics will be academically prepared to attend college by 2015. In 1996, Hispanics composed 4 percent of graduate students and had particularly low representation in advanced degrees in engineering, mathematics, and computer and physical sciences. HSIs suffer technology problems similar to those of HBCUs, according to the Hispanic Association of Colleges and Universities which represents HSIs.

#### LEGISLATIVE HISTORY

S. 432 was introduced on February 17, 2005, by Senator Allen. Senators McCain, Hutchison, Lott, Talent, Warner, Grassley, Graham, Thune, Santorum, Burns, Pryor, Lautenberg, and Lincoln are co-sponsors of the legislation.

On April 14, 2005, the Committee met in open executive session and, by a voice vote, ordered S. 432 reported without amendment.

#### ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

U.S. CONGRESS,  
CONGRESSIONAL BUDGET OFFICE,  
*Washington, DC, April 27, 2005.*

Hon. TED STEVENS,  
*Chairman, Committee on Commerce, Science, and Transportation,*  
*U.S. Senate, Washington, DC.*

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for S. 432, the Minority Serving

Institution Digital and Wireless Technology Opportunity Act of 2005.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Mike Waters.

Sincerely,

DOUGLAS HOLTZ-EAKIN, *Director*.

Enclosure.

*S. 432—Minority Serving Institution Digital and Wireless Technology Opportunity Act of 2005*

Summary: S. 432 would create a new grant program at the National Science Foundation (NSF) for educational institutions that serve minority students. Eligible institutions could use the funds to improve instructional capability and infrastructure related to digital and wireless technologies. The bill would authorize the appropriation of \$250 million a year over the 2006–2010 period for this program and would require grant recipients to provide matching funds under certain conditions.

Assuming appropriation of the authorized amounts, CBO estimates that implementing S. 432 would cost \$823 million over the 2006–2010 period. CBO estimates that enacting this bill would have no effect on direct spending or revenues.

S. 432 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments.

Estimated cost to the Federal Government: The estimated budgetary impact of S. 432 is shown in the following table. For this estimate CBO assumes that the amounts authorized will be appropriated near the start of each fiscal year and that outlays will occur at rates similar to other NSF programs. The costs of this legislation fall within budget function 250 (general science, space, and technology).

	By fiscal year, in millions of dollars—				
	2006	2007	2008	2009	2010
CHANGES IN SPENDING SUBJECT TO APPROPRIATION					
Authorization Level .....	250	250	250	250	250
Estimated Outlays .....	30	130	200	228	235

Intergovernmental and private sector impact: S. 432 contains no intergovernmental or private-sector mandates as defined in UMRA. The bill would benefit eligible institutions of higher education by authorizing \$250 million per year, for fiscal years 2006 through 2010 to strengthen their capacity to provide instruction in digital network technologies. To the extent that public institutions apply for and receive these grants, any costs to state, local, or tribal governments would result from complying with the conditions of such grants.

Estimate prepared by: Federal Costs: Michael Waters; Impact on State, Local, and Tribal Governments: Sarah Puro; Impact on the Private Sector: Craig Cammarata.

Estimate approved by: Peter H. Fontaine, Deputy Assistant Director for Budget Analysis.

## REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported:

*Number of persons covered*

The Committee believes that the bill would not subject any individuals or businesses affected by the legislation to any additional regulation.

*Economic impact*

This legislation would not have an adverse impact on the nation. It authorizes funding for digital and wireless network technologies related awards to MSIs.

*Privacy*

This legislation would not have a negative impact on the personal privacy of individuals.

*Paperwork*

This legislation would require each award recipient to provide to NSF any relevant institutional statistical or demographic data as requested by NSF. Each award recipient would be required to submit an annual report to the Director of NSF detailing its use of funding. The Director would be required to submit to Congress a bi-annual report based upon an evaluation of the program including a recommendation on the need for continued Federal support of the program.

## SECTION-BY-SECTION ANALYSIS

*Section 1. Short title*

This section would set forth the short title, the “Minority Serving Institution Digital and Wireless Opportunity Act of 2005.”

*Section 2. Establishment of office*

This section would establish an office at the NSF that would be called the “Office of Digital and Wireless Network Technology” (Office) to carry out this Act. The Office would have two purposes: (1) to strengthen the ability of MSIs to provide capacity for instruction in digital and wireless network technologies; and (2) to strengthen the national digital and wireless infrastructure by increasing national investment in telecommunications and technology infrastructure at MSIs.

*Section 3. Activities supported*

This section would set forth the specific activities that may be supported via a grant, contract, or cooperative agreement under the digital network technologies program, including—

- (1) acquiring equipment, instrumentation, networking capability, hardware and software, digital network technology, wireless technology, and infrastructure;
- (2) developing and providing educational services, including faculty development, to prepare students or faculty seeking a degree or certificate;

(3) providing teacher education, library and media specialist training, and preschool and teacher aid certification to individuals seeking to acquire or enhance technology skills in order to use technology in the classroom or instructional process;

(4) implementing joint projects to provide education regarding technology in the classroom with a State or State education agency, local education agency, community-based organization, national non-profit organization, or business;

(5) providing leadership development to those with institutional responsibility for technology education;

(6) providing capacity-building technical assistance to eligible institutions through technical assistance workshops, distance learning, new technologies, and other technological applications;

(7) fostering the use of information communications technology to increase scientific, mathematical, engineering, and technology instruction and research; and

(8) developing proposals to be submitted under this Act and to develop strategic plans for information technology investments.

#### *Section 4. Application and review procedure*

Subsection (a) would require that to be eligible to receive a grant, contract, or cooperative agreement under this Act, an MSI would submit an application to the Director at such time, in such manner, and accompanied by such information as the Director may reasonably require. The Director, in consultation with the advisory council established under subsection (b), would establish a procedure by which to accept such applications and publish an announcement of such procedure, including a statement regarding the availability of funds, in the Federal Register.

Subsection (b) would require the Director to establish an advisory council to advise the Director on the best approaches for involving MSIs in the program activities described in section 3. In selecting the members of the advisory council, the Director would be authorized to consult with representatives of appropriate organizations, including representatives of eligible institutions, to ensure that the membership of the advisory council reflects participation by technology and telecommunications institutions, minority businesses, communities of eligible institutions, Federal agency personnel, and other individuals who are knowledgeable about MSIs and technology issues.

Subsection (c) would require that MSI award recipients provide the Office with any relevant institutional statistical or demographic data requested by the Office.

Subsection (d) would require the Director to convene an annual meeting of MSI award recipients for the purposes of fostering collaboration and capacity-building activities among MSIs, and disseminating information and ideas generated by such meetings.

#### *Section 5. Matching requirement*

This section would require an applicant MSI to commit to non-Federal cost sharing (directly or through donations from public or private entities) in the amount of the lesser of 25 percent or



\$500,000. This cost sharing would be waived for any institution or consortium with an endowment of less than \$50 million.

*Section 6. Limitations*

This section would make an institution that receives a grant that exceeds \$2,500,000 ineligible to receive another grant until all other eligible institutions that have applied to the program receive a grant under the Act. It also requires each grant to be administered by an eligible institution.

*Section 7. Annual report and evaluation*

Subsection (a) would require MSI award recipients to provide an annual report to the Director on its use of the grant, contract, or cooperative agreement.

Subsection (b) would require the Director, in consultation with the Secretary of Education, to (1) review the annual reports as required by subsection (a); and (2) evaluate the program on the basis of such reports every two years.

Subsection (c) would require that, in the program evaluation, the Director describe the activities undertaken by those institutions and assess the short-range and long-range impact of activities carried out under the grant, contract, or cooperative agreement on the students, faculty, and staff of the institutions.

Subsection (d) would require the Director to submit a report to the Congress based on the program evaluation, which shall include such recommendations as may be appropriate, including recommendations concerning the continuing need for Federal support of the program.

*Section 8. Definitions*

This section would define eligible institutions, using the meaning of the terms as defined by the Higher Education Act of 1965, as "HBCU and consortia thereof; HSI; tribally controlled colleges or universities; Alaska native-serving institutions; and native Hawaiian-serving institutions." In addition, any institution determined by the NSF Director, in consultation with the Secretary of Education, to have enrolled a substantial number of minority, low-income students during the previous academic year who received assistance under subpart I of part A of title IV of the Higher Education Act of 1965 for that year, would be eligible. The Director is NSF's Director, and minority business includes HUBZone small business concerns as defined in section 3(p) of the Small Business Act.

*Section 9. Authorization of appropriations*

This section would authorize appropriations of \$250 million for each of fiscal years 2006 through 2010 to carry out this Act.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, the Committee states that the bill as reported would make no change to existing law.