

STATEMENT  
OF THE  
AMERICAN INDIAN HIGHER EDUCATION CONSORTIUM  
TO THE UNITED STATES SENATE - COMMITTEE ON APPROPRIATIONS  
SUBCOMMITTEE ON COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES

MARCH 25, 2016

This statement focuses on the National Science Foundation (NSF) and National Aeronautics and Space Administration (NASA).

On behalf of this nation's 37 Tribal Colleges and Universities (TCUs), which compose the American Indian Higher Education Consortium (AIHEC), thank you for the opportunity to express our views and recommendations regarding the National Science Foundation's TCU Program (NSF-TCUP) and the National Aeronautics and Space Administration's Minority University Research and Education Project (NASA-MUREP) for American Indian and Alaska Native STEM Engagement Program (MAIANSE) for Fiscal Year 2017 (FY 2017).

**SUMMARY OF REQUESTS**

**National Science Foundation (NSF) - Education and Human Resources Directorate (EHR):** Since Fiscal Year 2001, a TCU initiative has been funded and administered under the NSF-EHR. This competitive grants program enables TCUs to enhance the quality of their STEM instructional, research, and outreach programs. TCUs that have been awarded an NSF-TCUP grant are expected to complete a comprehensive program needs analysis and to develop a plan for addressing both their institutional and NSF goals, with a primary goal being significant and sustainable expansion and improvements to STEM programs. Through NSF-TCUP, tribal colleges have been able to establish and maintain programs that represent a key component of the career pipeline for the American Indian STEM workforce. *We urge the Subcommittee to fund competitively awarded NSF-TCUP grants at a minimum of \$14,000,000.*

**National Aeronautics and Space Administration (NASA) – NASA Headquarters, Office of Education - Minority University Research and Education Programs (MUREP):** In 2014, the NASA-MUREP program initiated two competitive grant programs to enhance the range of STEM education and research opportunities open to 34 eligible TCUs: (1) Earth Systems, Technology, and Energy Education for MUREP (ESTEEM); and (2) the TCU Experiential Learning Opportunity program. Together, these programs comprise MUREP's program for American Indian & Alaskan Native STEM Engagement (MAIANSE). Activities funded under these programs help to address critical science education and research needs of TCUs, are helping to build the Native (and national) STEM workforce, and enhance the economic development of tribal communities. *We strongly urge the Subcommittee to fund the NASA MUREP program for American Indian & Alaskan Native STEM Engagement (MAIANSE) at, or above, the FY 2014 level.*

**Tribal Colleges and Universities: "DOING SO MUCH WITH SO LITTLE"**

TCUs are an essential component of American Indian/Alaska Native (AI/AN) education. Currently, 37 TCUs operate more than 75 campuses and sites in 16 states, within whose geographic boundaries 80 percent of all American Indian reservations and federal Indian trust land lie. They serve students from well over 250 federally recognized tribes, more than 85 percent of whom receive federal financial aid – primarily Pell grants. In total, the TCUs annually serve 160,000 AIs/ANs and other community members through a wide

variety of academic and community-based programs. TCUs are public institutions accredited by independent, regional accreditation agencies and, like all U.S. institutions of higher education, must regularly undergo stringent performance reviews to retain their accreditation status. Each TCU is committed to improving the lives of its students through higher education and to moving AI/ANs toward self-sufficiency. To do this, TCUs serve many roles in their reservation communities, functioning as community centers, libraries, tribal archives, career and business centers, open access computer labs, summer camps, community farms, economic development centers, GED training and testing centers, child and elder care centers, and more.

The federal government, despite its direct trust responsibility and binding treaty obligations, has never fully funded TCU institutional operations as authorized under the Tribally Controlled Colleges and Universities Assistance Act of 1978. Yet despite funding challenges, TCUs are leading the nation in preparing AI/AN nurses and more recently, in preparing teachers for our Native schools. For example, in 2014, half of all AI/AN special education teachers in Montana graduated from Salish Kootenai College. TCUs train other professionals in high-demand fields, including agriculture and natural resources management, human services, IT technicians, and building tradesmen. By teaching the job skills most in demand on our reservations, TCUs are laying a solid foundation for tribal economic growth, with benefits for surrounding communities, and the nation as a whole. But that is not enough. TCU leadership understands that we must do more – we must move beyond simply workforce training. Today, TCUs are tackling the tougher – but much more significant – issue of job creation, because we know that to break the cycle of generational poverty and end the culture of dependency that grips so much of Indian Country, simply preparing students for a very limited labor market is not enough. We must create new industries, new businesses, and a culture of self-sufficiency and innovation. Our job creation initiative is focusing initially on advanced manufacturing, through a partnership with the U.S. Department of Energy, National Laboratories, TCUs, and industry.

Tribal colleges continually seek to instill a sense of hope and identity within Native youth, who one day will lead our tribal nations. Unfortunately, the high school drop-out rate for Native students remains around 50 percent. To help address this alarming reality, TCUs are partnering with the Department of the Interior's Bureau of Indian Education to help create a lasting "college-going culture" in Indian middle and high schools. TCUs are reaching back to create a bridge for Indian students as early as elementary school, encouraging them to abandon any notion of dropping out of high school and instead, to think that the natural course is to finish high school and go on to the local TCU. In addition, TCUs offer Dual Credit courses for high school students, provide math teachers for local high schools as a strategy for improving course delivery, host Saturday academies, after school programs and summer camps for middle and high school students, and at the other end of the spectrum, they offer GED training and testing.

As noted earlier, the TCUs' operations funding is insufficient, and their budgets are further disadvantaged because, on a per student basis, the colleges receive funding for only about 85 percent of their academic enrollments. Approximately 15 percent of the TCUs' collective enrollments are non-Indian students living in the local community, but TCUs receive federal funding based only on Indian students, defined as members of a federally recognized tribe or the biological children of enrolled tribal members. While many TCUs do seek funding from their respective state legislatures for their non-Indian, state-resident students (often referred to as "non-beneficiary" students) successes have been, at best, inconsistent. Given their locations, often hundreds of miles from another postsecondary institution, TCUs are open to all students, Indian and non-Indian, believing that education in general, and postsecondary education in particular, is a catalyst to a better economic future for their areas.

A recent independent, economic impact study proves this, illustrating that TCUs create lasting value from multiple perspectives: students, society, and taxpayers. TCUs elevate their students' lifetime incomes, and this in turn benefits society as a whole by increasing the region's economy and generating a wide array of savings through improved lifestyles. The increased employment benefits taxpayers through increased tax receipts and a reduction in the need for welfare and unemployment benefits. In fact, every dollar spent is quadrupled in the lifetime income of students; society gains over five times the investment in added income and social savings; and the taxpayers get back almost two and a half times the investment. In short, the TCUs are a very sound investment of federal funds.

### **JUSTIFICATIONS:**

- **National Science Foundation/Tribal Colleges and Universities Program (NSF-TCUP) in the Education and Human Resources Directorate:** American Indian students have the highest high school drop-out rates in the country. Those who do pursue postsecondary education often require developmental classes before beginning their studies in earnest. Placement tests administered at TCUs to first-time entering students indicate that 71 percent required remedial math. Of these students, our data indicate that while 63 percent successfully complete the course, many do not do so in one year. Without question, a large proportion of the TCUs' already limited resources is dedicated to addressing the continual failings of K-12 education systems.

To help rectify this, TCUs have developed strong partnerships with their K-12 feeder schools and are actively working, in large part through support from NSF-TCUP grants, to engage young students in community and culturally relevant science and math education and outreach programs. These efforts include weekend academies and summer STEM camps that reinforce and supplement the instructional programs that K-12s are able to provide.

For the past 15 years, NSF-TCUP has provided essential capacity building assistance and resources to TCUs. In the years since the program began, NSF-TCUP has become the primary federal program for building STEM capacity at the TCUs. NSF-TCUP has served as a catalyst for capacity building and positive change at TCUs and the program can be credited with many success stories. Today, American Indians and Alaska Natives are more aware of the importance of STEM to the long-term survival of tribes and tribal communities, particularly in areas such as renewable energy and technology-driven economic development.

The NSF-TCUP, administered by the Education and Human Resources Directorate, is a competitive grants program that enables TCUs to develop and expand critically needed science and math education and research programs relevant to their respective communities. Through this program, TCUs that have been awarded an NSF-TCUP grant have been able to enhance their STEM instructional offerings, workforce development, research, and outreach programs.

For example, NSF-TCUP funds have allowed Northwest Indian College (NWIC) in Bellingham, WA to cultivate a comprehensive science education program that, beginning at the high school level, provides a range of mentoring, peer tutoring, research, service learning, and academic enrichment opportunities that help to grow the next generation of American Indian scientists, science teachers, and leaders. A new NSF-TCUP grant awarded to NWIC is producing a collaborative research partnership for

geoscience education with Western Washington University (WWU). This collaborative is designed to increase and modify the geosciences curriculum at NWIC and establish an educational continuum that will facilitate the articulation of NWIC graduates into the graduate geoscience curriculum at WWU. A shared research agenda will be developed between the two institutions that uses the Bellingham Bay ecosystem as a theme for scholarly studies and place-based instruction. Administrative changes at both institutions will include student mentoring, articulation agreements, co-listed courses, and cross-cultural faculty development.

Despite its advances and successes, funding for the NSF-TCUP program has been stagnant. Therefore, not all of the TCUs have had an opportunity to benefit from this program; in fact the percentage of proposals funded has declined each year beginning in 2004. *We urge the Subcommittee to fund competitively awarded NSF-TCUP grants at a minimum of \$14,000,000.*

- **National Aeronautics and Space Administration (NASA) Office of Education/Minority University Research and Education Programs (MUREP) and American Indian & Alaskan Native STEM Engagement (MAIANSE):** College of Menominee Nation (CMN) in Keshena, Wisconsin is one of four tribal colleges to win three-year grant awards designed to improve teaching and learning about global climate change. For this project, CMN is working in collaboration with Argonne National Laboratory, University of Wisconsin-Milwaukee and UW-Platteville, National Council for Science and Environment, and of course, NASA. The overarching goals of the CMN project are to explore climatic factors that affect photovoltaic module performance, and to design an evaluation tool for comparing different solar energy systems. The project has three main objectives: (1) to provide an experiential learning opportunity for four to six STEM students to construct a user-friendly solar energy system evaluation tool, including cost analysis and investment payback schedule; (2) to establish innovative teaching curricula that meld STEM concepts with climate change literacy resulting in combined social science and physical science courses with wide student appeal; and (3) to develop an educational train-the-trainer model as a training outlet for TCU faculty and local middle school teachers to learn how to incorporate climate change topics in the classroom. The project is intended to advance discovery and understanding of climate-related research while promoting teaching, training, and learning of STEM principles. The results of this research will advance knowledge and understanding of the short- and long-term performance of solar energy systems, thereby allowing consumers to make educated choices about solar module return on investment for residential and commercial energy. One of the goals of the MAIANSE programs is to create a diverse and highly skilled climate-related workforce. *Continuation and expansion of these NASA programs will give more TCUs the opportunity to increase their capacity and advance the NASA mission in Indian Country. We strongly urge the Subcommittee to fund NASA-MUREP MAIANSE programs at a minimum of \$3,500,000.*

## **CONCLUSION**

Tribal Colleges and Universities provide access to quality higher education opportunities, including STEM-focused programs, for thousands of American Indians and Alaska Natives. The modest federal investment that has been made in TCUs has paid great dividends in terms of employment, education, and economic development. Continuation of this investment represents one of the most cost-effective strategies for enabling Tribal (and national) STEM-based economic development.

We greatly appreciate your past and continued support of the nation's Tribal Colleges and Universities and your thoughtful consideration of our FY 2017 appropriation request.