STATEMENT OF THE AMERICAN INDIAN HIGHER EDUCATION CONSORTIUM
PREPARED FOR THE U.S. HOUSE OF REPRESENTATIVES - COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES

April 28, 2017

On behalf of the nation's Tribal Colleges and Universities (TCUs) that collectively are 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 2018 (FY 2018).

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 participating TCUs to enhance the quality of their STEM instructional, research, and outreach programs. Those TCUs that have been awarded an NSF-TCUP grant are required 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 $15,000,000.***

- **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 eligible TCUs: (1) Earth Systems, Technology, and Energy Education for MUREP (ESTEEM); and (2) the TCU Experiential Learning Opportunity (TCU-ELO) 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 $3,500,000.***

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, public libraries, tribal archives, career and business centers, open access computer labs, summer camps, community farms, economic development centers, GED or HiSET 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, since 2014, half of all AI/AN special education teachers in Montana have been graduates of 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 focuses initially on advanced manufacturing, through a partnership with the U.S. Department of Energy, National Laboratories, TCUs, and industry.

As noted earlier, the TCUs' operations funding is insufficient, and their budgets are further disadvantaged because, unlike other institutions of higher education, TCUs receive funding on a per student basis for only a portion of their academic enrollments. Approximately 15 percent of the TCUs' collective enrollments are non-Indian students; however, TCUs receive federal operating funds 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 operating funds from their respective state legislatures for their non-Indian, state-resident students (also 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.

TCUs are a solid investment of federal funds. In August 2015, an economic impact study on the TCUs, conducted by Economic Modeling Specialists International (EMSI), revealed that the known TCU alumni impact is $2.3 billion, which supports 28,778 jobs in the nation. From a taxpayer's perspective, the study concluded that the total monetary benefits to taxpayers compared to their costs (equal to the federal funds the TCUs received during the analysis year) yields a 2.4 benefit-cost ratio. In other words, for every federal dollar invested in the TCUs, the

taxpayers receive a cumulative value of $2.40, over the course of students' working lives. The average annual rate of return is 6.2 percent, a solid rate of return that compares favorably with other long-term investments. On an individual basis, TCU students see an annual return of investment of 16.6 percent, and the vast majority of TCU-trained workers remains in Indian Country and contributes to the local economy. TCUs benefit taxpayers through increased tax receipts and reduced demand for federal social services; a win all-around.

REQUEST 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 63 percent required remedial math. Of these students, our data indicate that while 67 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 appropriate 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.

NSF-TCUP provides critically important capacity building assistance and resources to TCUs. 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 for many success stories. Today, American Indians/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 recently awarded NSF-TCUP to NWIC has produced a collaborative research partnership for geoscience education with Western Washington University (WWU). This partnership is designed to increase and modify the geosciences curriculum at

NWIC and establish an educational continuum that facilitates the articulation of NWIC graduates into the graduate geoscience curriculum at WWU. A shared research agenda is being developed between the two institutions that uses the Bellingham Bay ecosystem as a theme for scholarly studies and place-based instruction. Programmatic changes at both institutions will include student mentoring, articulation agreements, co-listed courses, and cross-cultural faculty development, intended to make the transition seamless.

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 very important program. *We urge the Subcommittee to fund competitively awarded NSF-TCUP grants at a minimum of $15,000,000.*

- **National Aeronautics and Space Administration (NASA) Office of Education/Minority University Research and Education Programs (MUREP) and American Indian & Alaskan Native STEM Engagement (*MAIANSE*):** Under the MAIANSE program umbrella, NASA has established the Tribal College and University Experiential Learning Opportunity (TCU-ELO) program. This modest program makes awards through cooperative agreements to assist TCUs and their program partners in creating experiential learning opportunities for students. In 2014, the TCU-ELO competition resulted in three TCUs being awarded three-year cooperative agreements. Southwestern Indian Polytechnic Institute (SIPI) in Albuquerque, NM, is one of the three TCUs to secure an award. Under its cooperative agreement with NASA, SIPI students and local tribal high school students engage in hands-on projects through which they learn computer programming, computer networking, microcontrollers, microprocessors, sensor technology, 3D printing, and design engineering. The program employs a network of mentors ranging from peers and near-peers to professional scientists and engineers, all of whom are available to support participating students as they work to achieve their science and engineering education and career goals. The project director Dr. Nader Vadiee, selected by the Carnegie Foundation for the Advancement of Teaching and the Council for Advancement and Support of Education (CASE) as the 2009 New Mexico Professor of the Year, is planning to expand the program should additional funds be secured through NASA-ELO, to be shared with other TCUs where it can be replicated. Continuation and expansion of the TCU- ELO program will give more TCUs the opportunity to increase their capacity and to advance the NASA mission in Indian Country.

CONCLUSION

Tribal Colleges and Universities provide access to high-quality, culturally appropriate postsecondary 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 advancing 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 2018 appropriation request.