



NICE-T / TCU-ELO Joint New PI Orientation:

Evolution of NASA's Tribal Engagement



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- Strengthening NASA and the Nation's future workforce
- Attracting and retaining students in science, technology, engineering and mathematics, or STEM disciplines
- Engaging Americans in NASA's mission



- The Office of Education strives to ensure that underrepresented and underserved students participate in NASA education and research projects to assist more of these students in their pursuit of STEM careers.
- The Higher Education Program will continue to focus on the Minority University Research and Education Program, or MUREP

Minority University Research Education Project (MUREP) Information



- MUREP engages underrepresented populations through a wide variety of initiatives.
- Multiyear grants are awarded to assist Minority Institution faculty and students in research of pertinent missions.
- MUREP focuses on recruiting underrepresented and underserved students in STEM disciplines through completion of undergraduate or graduate degrees in support of their entry into the scientific and technical workforce

For more information:

<http://www.nasa.gov/offices/education/programs/national/murep/home/index.html>



- Administered by NASA's Office of Education
- Implemented at the 10 field centers
- MUREP increases the Agency's responsiveness to federal mandates related to minority institutions and Underrepresented and Underserved communities
 - America COMPETES Reauthorization Act of 2010
 - <http://www.govtrack.us/congress/bills/111/hr5116>
 - Committee on Science, Technology, Engineering, and Math Education (CoSTEM)
 - <http://www.whitehouse.gov/administration/eop/ostp/nstc/committees/costem>



- Minority Serving Institutions Executive Orders (EO)
 - EO 13532: Historically Black College or University (HBCU)
 - EO 13555: Hispanic Serving Institutions (HSI)
 - **EO 13592: Tribal College or University (TCU)**
 - EO 13515: Asian American and Native American Pacific Islander – Serving Institutions (AANAPISIs)

Geographic Distribution of Tribal Colleges





NASA's goals for TCUs are to:

- enhance their technical expertise;
- increase the participation of underrepresented and underserved students in science, technology, engineering and mathematics (STEM) disciplines; and
- provide opportunities to participate in NASA-related education and research projects.

The NASA TCUP is guided by Executive Order 13592: “Improving American Indian and Alaska Native Educational Opportunities and Strengthening Tribal Colleges and Universities.”

NASA is highly committed to ensuring the broadest participation of TCUs in the Agency's research and education programs as well as its overall mission.

PREVIOUS TCUP COOPERATIVE AGREEMENT(S)



- **Overall goal:**
 - To expand opportunities for TCU students in the nation's STEM workforce through
 - Information exchange
 - Capacity building
 - Infrastructure development
 - Research experience
 - Outreach

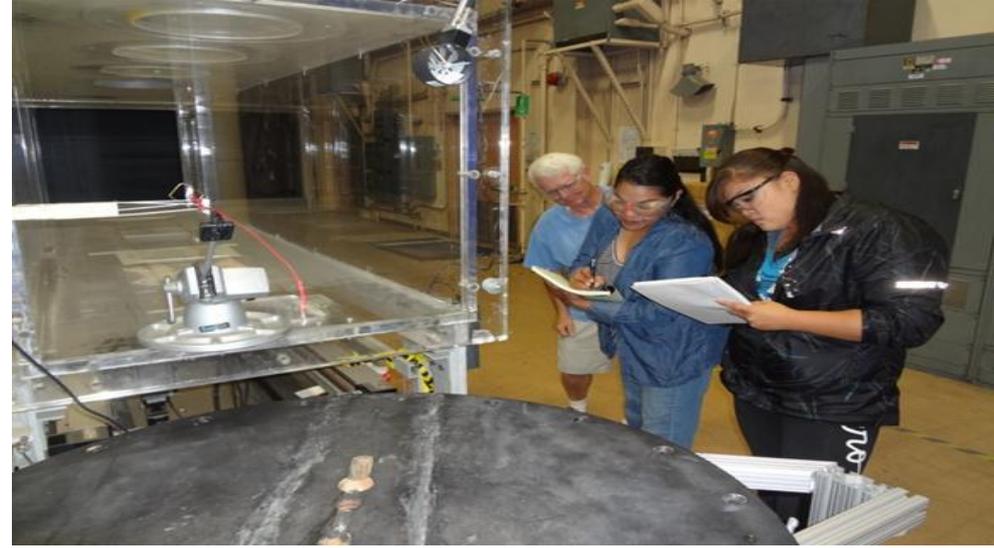




Results over 3 year period:

- **EXTERNSHIP PROGRAM (Kiksapa Consulting)**
 - Over 70 TCU students participated
 - Over 36 TCU faculty participated and/or served as mentors
- **SCIENCE MISSION: CUBESAT (Salish Kootenai College)**
 - 15+ TCU students participated in building and testing the flight unit for delivery (MARS mission)-year long
- **INTERNSHIPS at NASA Centers (AIHEC)**
 - Over 50 TCU students completed 6 to 10-week internships at multiple NASA Centers

VISUALS





2013-2014 Tribal College & University – Experiential Learning Opportunity (TCU-ELO)

The goals of the TCU ELO are to utilize NASA's unique contributions in collaboration with tribal colleges and universities and tribal-serving institutions to improve the overall quality of the Nation's STEM (Science, Technology, Engineering and Mathematics) education by:

- Increasing learner's involvement and interest in STEM
- Expanding outreach activities between NASA and TCUs in the creation of experiential learning opportunities for students
- Providing opportunities to engage in NASA-related STEM scientific research and engineering activities



2013-2014 NASA INNOVATIONS IN CLIMATE EDUCATION – TRIBAL (NICE-T)

The goals of the NICE-T are to use NASA's unique contributions to climate and Earth system science, through collaboration with tribal institutions, to improve the quality of the Nation's STEM (Science, Technology, Engineering and Mathematics) education to:

- Increase the level of climate literacy and engagement of the United States public
- Create a diverse, highly skilled, and motivated future workforce in climate-related sciences
- Advance the understanding of how to effectively teach global climate change concepts



NICE-T

- COLLEGE OF MENOMINEE NATIONS
- FOND DU LAC TRIBAL & COMMUNITY COLLEGE
- SALISH KOOTENAI COLLEGE
- TURTLE MOUNTAIN COMMUNITY COLLEGE

Budget =~ \$1M/year – 3 years

TCU-ELO

- CHIEF DULL KNIFE COLLEGE
- HASKELL INDIAN NATIONS UNIVERSITY
- SOUTHWESTERN INDIAN POLYTECHNIC INSTITUTE

Budget =~ \$.7M/year – 3 years



TYPES OF ACTIVITIES:

- YEAR-LONG ROBOTICS PROGRAMS
- DEVELOPMENT OF CLIMATE CHANGE COLLEGE COURSES
- INTEGRATING TRADITIONAL ECOLOGICAL KNOWLEDGE (TEK) AND S.T.E.M.
- ENHANCED MATH AND SCIENCE CURRICULUM SUPPORT AT THE HIGH SCHOOL & TCU LEVELS
- CONSTRUCTION OF SOLAR ENERGY EVALUATION TOOL
- SUMMER INQUIRY-BASED RESEARCH PROJECTS ON CLIMATE IMPACTS, APPLYING GIS TRAINING



Indigenous Peoples Climate Change Working Group

- support TCU, undergraduate, research projects on tribal relevant climate change issues
- convene semiannual climate change workshops

Transitioning 2yr Students to 4yr/Graduate Institutions

- American Indian Science & Engineering Society (AISES)

First Nations Rocketry Competition

- Northwest Indian College



- ❖ **American Indian Higher Education Consortium (AIHEC)**
- ❖ **American Indian Science & Engineering Society (AISES)**
- ❖ **Interagency Working Group on Indian Affairs (IWGIA)**
- ❖ **Native American Advisory Committees (NAAC)**
- ❖ **Society for Advance of Hispanics/Chicanos & Native Americans in Science (SACNAS)**
- ❖ **State Space Grants**



THANK YOU



Backup Slides



- **Kiksapa Consulting, Inc.**
 - ***“Preparing Indian Country for Climate Change Through Technology, Education, and Research”***
 - “Externships” & Internships ***at TCUs***
 - TCU faculty training (i.e. climate change, GIS)
- **American Indian Higher Education Consortium (AIHEC)**
 - ***“NASA-AIHEC Summer Research Experience (SRE) at NASA Centers”***
 - NASA Center internships/SRE
- **Salish Kootenai College**
 - ***“Attracting Tribal College Students to NASA-focused STEM Careers Through Participation in Flight Missions”***
 - Engineering & science students from SKC & TCUs with faculty build, test, produce flight-ready CubeSat mission (***at SKC***)