

Creating a STEM Pipeline American Indian Science and Engineering Society (AISES)

Sarah EchoHawk (Pawnee), Chief Executive Officer

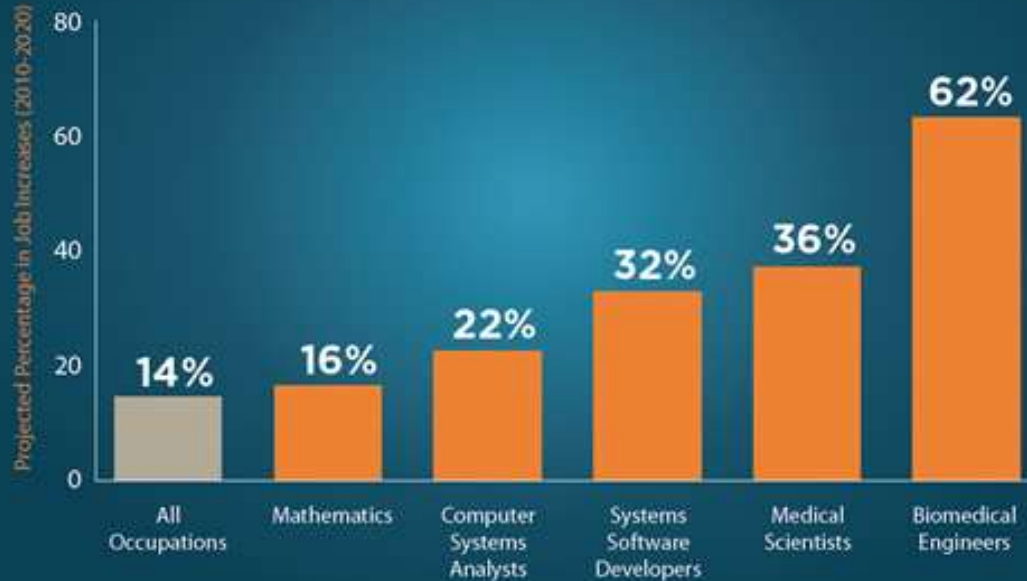


Why STEM?

- The number of jobs requiring STEM degree continues to grow but the number of students earning degrees in those fields remains level, with women and minorities severely underrepresented.
- Many jobs are going unfilled simply for lack of people with the right skill sets.
- Engineering: The U.S. now produces about **93,000 engineers** per year at the bachelor's degree level, of which **only 30,000** are from underrepresented minority populations or are women (50k Coalition Data).
- American Indians make-up **only 1%** of the those graduating with a four-year undergraduate degree in S&E (NSF Data).



PROJECTED PERCENTAGE INCREASES IN STEM JOBS: 2010-2020



AISES

Mission: Founded in 1977, The American Indian Science and Engineering Society (AISES) is a national, nonprofit organization focused on substantially increasing the representation of American Indians, Alaska Natives, Native Hawaiians, Pacific Islanders, First Nations and other indigenous peoples of North America in science, technology, engineering and math (STEM) studies and careers.

Our Programs (Who we serve):

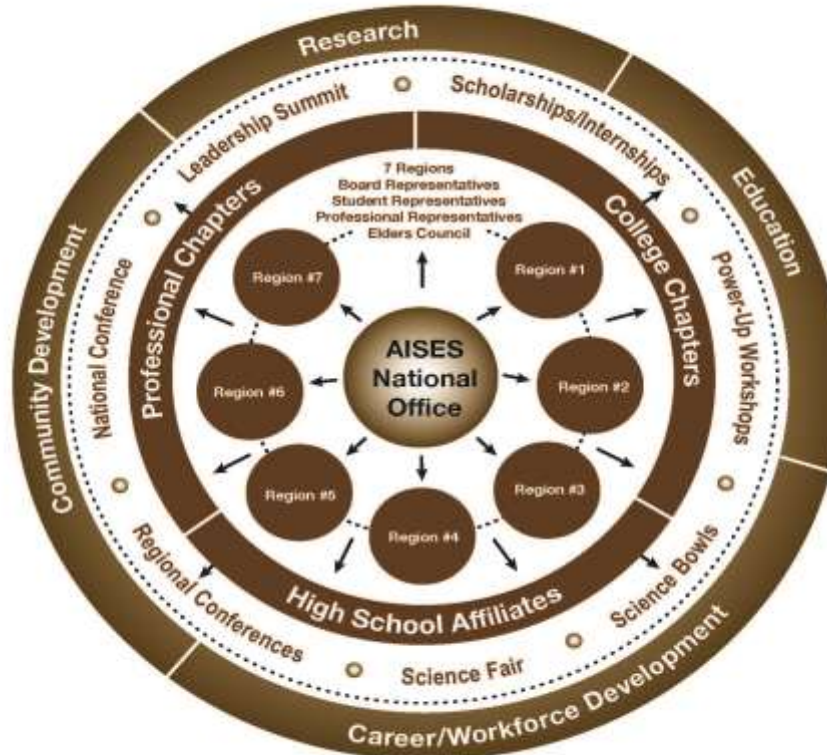
- Pre-College: “Awareness and Retention”
- College: “Access and Success”
- Professional: “Leadership and Change”

Our Impact (Our resources and our reach):

- 189 Chartered College and University Chapters Organized in 7 Regions
- 14 Professional Chapters
- 158 Affiliated Schools that enroll more than 55,000 K-12 Native Students
- Over 4,000 current members/More than 1,200 Sequoyah Fellows
- Awarded over \$10.3 million in scholarships to over 5,000 students



How AISES Works



Membership Numbers

Type	March 2016	March 2015
Pre-college	833	476
College	1442	1397
Professional	1539	1343
Retiree	166	162
TOTAL	3980	3378
<i>Sequoyah</i>	1266	1228

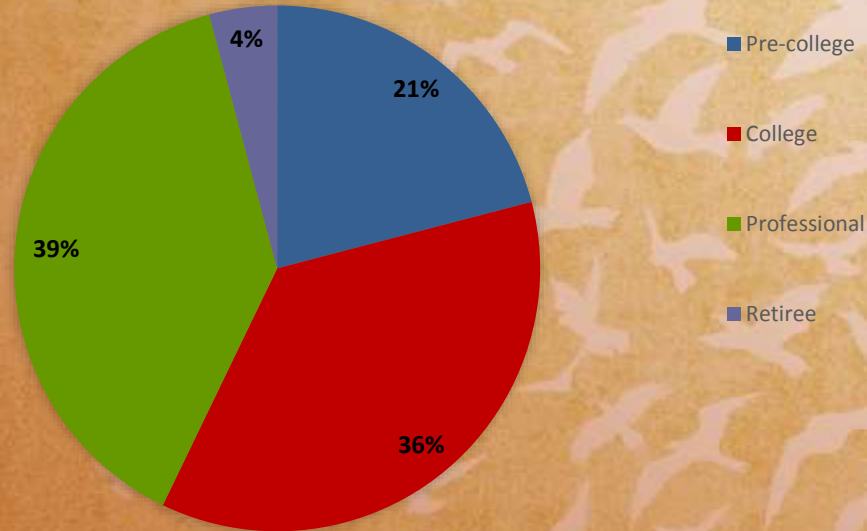
*As of April 8, 2016, Total Membership is 4,011



Membership Numbers by Type

MEMBERSHIP BY TYPE MARCH 2016

Gender	2016	2015
Male	51%	52%
Female	49%	48%

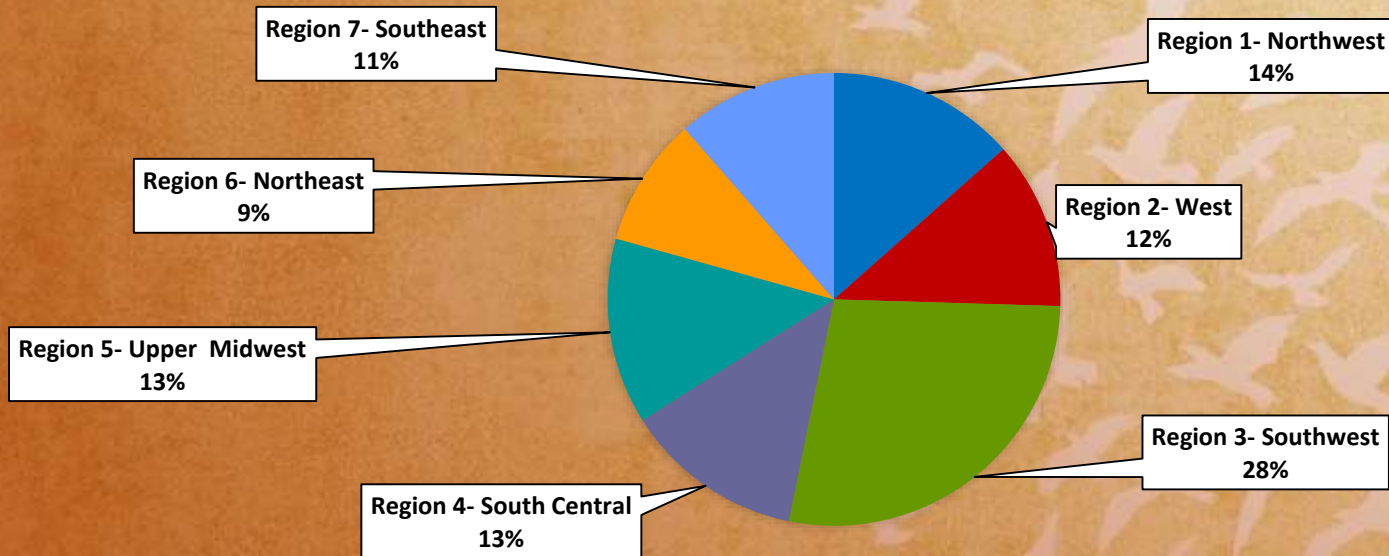


AISES 7 Regions



Membership by Region

MEMBERSHIP BY REGION MARCH 2016



AISES Structure

- 501 C 3 (Nonprofit Organization)
- Nine Board Members plus Two Student Representatives
- Four Advisory Councils
 - Council of Elders
 - Corporate Advisory Council
 - Government Relations Council
 - Tribal Advisory Council (slated for future development)
- One Subsidiary Organization – AISES Publishing, Inc.
 - Winds of Change magazine



Summary Overview of Programming

- National Conference:
Nov 2016 Minneapolis
- Leadership Summit:
April 14 – 16 in
Rochester, MN with IBM
and Mayo Clinic
- Virtual Science Fair
- Regional Science Bowls
- Scholarships &
Internships
- Power-Up Workshops (*Redeveloped*)
- Energy Challenge (*New*)
- Mobile App Competition (*New*)
- Robotics (*New*)
- Tribal Community STEM Development
(*New*)
- Pathways to STEM Faculty (*New*)
- Inventor Competition (*In Development*)
- Pathways to Industry (*In Development*)



Current Status of AISES

Revenue

- 2013=\$2.2 m
- 2014=\$2.5 m
- 2015=\$3.1 m

Staffing and Offices

- 12 staff
- Looking to add a DC position
- NM HQ Office & CO Field Office



Pre-College

“Awareness & Retention”

Programs that seek to increase awareness of STEM for Native youth, in order to retain their interest in STEM, provide opportunities for development of STEM aptitude, and forums to demonstrate continual improvement in the use of the scientific method.

- Pre-College Affiliated Schools Network
- National American Indian Science and Engineering Fair (*Virtual*)
- Power-Up Workshops
- Poster Sessions at AISES National Conference
- Educator Development Training
- Robotics
- Energy Challenge
- Tribal Community STEM Development



Undergraduate and Graduate

“Access & Success”

Programs and networks that seek to provide financial support, development opportunities, research experience, access to mentors, and a Native community of STEM professionals and others committed to success of AI/ANs pursuing higher education in STEM.

- College Chapter Network
- Scholarships (Academic & Travel)
- Internships
- Regional Conferences
- Networking
- Mentoring
- Opportunities to Present Research
- Opportunities for Chapters Capacity Building
- Leadership Development Opportunities
- Chapter, Regional and National Student Leadership opportunities



Professionals

“Leadership & Change”

Programs that provide opportunities for professional development, engagement in leadership roles, role modeling/mentoring, and advocacy.

- Professional Chapters Network
- Professional Awards
- Professional Development Opportunities
- Opportunities as SMEs
- Voice of Industry through AISES Advisory Councils
- Advocacy/Leadership Roles within Partner Organizations that facilitate alignment of resources
- Mentoring Opportunities
- Volunteering Opportunities



Strategic Partnerships & Research

National Science Foundation Projects (\$2m in funding)

- Lighting the Pathway to Faculty Careers for Natives in STEM (*Multi-Directorate*)
- ASSIST Project – Collaboration with NSBE, SWE, SHPE, SACNAS, MAES and GMIS (Engineering)
- AISES Data Compilation Project (*Research and Evaluation on Education in Science and Engineering (REESE)*)

AIREI Project – Partnership with American Indian Higher Education Consortium (AIHEC) (*Ended Dec. 2015*)

- Supports projects to foster tribal community-based energy research, technology transfer, economic development, and public education projects to connect science education and research among American Indian college students and faculty at Tribal Colleges and Universities (TCUs) with mainstream higher education institutions while helping to address Tribal community energy priorities.

Minorities in Energy Initiative - U.S. Department of Energy's Office of Economic Impact and Diversity

- Seeks to create a substantive, sustainable model that connects diverse stakeholders together to address challenges and opportunities for minority engagement in energy economic participation, STEM education, and climate change.

CHANGES - Coalition of Hispanics, African & Native Americans for the Next Generation of Engineers & Scientists)

- Working to diversify the STEM workforce and to enhance the professional development of people of color in STEM. CHANGES is also working with the U.S. Office of Science and Technology (OSTP) in finding ways to increase the number of minorities in STEM.



2016 Annual AISES National Conference

November 10 – 12 • Minneapolis Convention Center

- 2,000 participants
- College and Career Fair for High School and College Students
- Tracks for Educators, Students, Professionals, Researchers
- Pre-College, Undergraduate and Graduate Research Presentations
- Plenary Session, Workshops, Concurrent Sessions
- Awards Ceremony
- Mentoring and Networking
- Cultural Activities
- Volunteering Opportunities
- Business Meetings¹



Who AISES Partners With

Example partnerships - **This is not a comprehensive list.**

- **Federal Partners** include the US Trade and Patent Office, National Science Foundation, Department of Energy, Department of Defense, Department of Agriculture (NRCS, ARC), Bonneville Power Administration, Bureau of Land Management, Army Corps of Engineers, CIA, NAVY, NOAA, EPA, Nuclear Regulatory Commission
- **Corporate Partners** include Boeing, Lockheed Martin, Chevron, Intel, Microsoft, IBM, ExxonMobil, 3M, Northrop Grumman, Raytheon, AECOM, Chrysler
- **Non-Profit Organizational Partners** include AIHEC, Society for the Advancement of Chicanos and Native Americans in Science (SACNAS), American Chemical Society
- **Foundation Partners** include, Motorola Foundation, APS Foundation, Burlington Northern Santa Fe Foundation, CHS Foundation
- **Tribes and Tribal Enterprise Partners** include Eastern Band of Cherokee, San Manuel Band of Mission Indians, Shakopee Mdewakanton Sioux Community



Questions

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AISES National PSAs

- *Traditional Knowledge – New Ideas – A Better World*
- Comcast/NBC Universal (Bill Black) donated \$20k to produce two Public Service Announcement
- Also donated \$1.5 million in airtime – airing April, May, November and December of 2016.
- Campaign beginning this month – web, social media, direct mail and at National Conference
- Rollout via social media, web, direct mail, etc. to begin after leadership summit and be featured at National Conference.
- Link to webpage in development to view videos:
 - <http://www.aises.org/content/support-aises>

