

# Yesterday, Today & Tomorrow



2019  
Annual  
Report

*American Indian Science and Engineering Society*



## AISES Council of Elders

Antoinelle Benally Thompson (Navajo)

Dr. Bret R. Benally Thompson (White Earth Ojibwe)

Rose Darden (Ute)

Steve Darden (Navajo/Cheyenne/Swedish)

Norbert Hill, Jr. (Oneida)

Phil Lane Jr. (Yankton Dakota/Chickasaw)

Cecelia Lucero (Acoma Pueblo)

Stan Lucero (Laguna Pueblo)

Dr. Henrietta Mann (Southern Cheyenne)

Artley M. Skenandore (Oneida)

Faith Spotted Eagle (Ihanktonwan Band of the Dakota/Nakota/Lakota Nation of South Dakota)

## Council of Elders in Memoriam

Andrea Axtell (Nez Perce)

Horace Axtell (Nez Perce)

Eddie Box, Sr. (Southern Ute)

Franklin Kahn (Navajo)

Mary Kahn (Navajo)

Bow Lane (Chickasaw)

Phil Lane, Sr. (Yankton Sioux)

Dr. James May (United Keetoowah Band of Cherokee Indians)

Dr. Lee Piper (Cherokee)

## AISES Board of Directors 2018-2019

Rick Stephens (Pala Band of Mission Indians)  
Board Chair

Alicia Mitchell (Cherokee)  
Board Vice Chair (Nov. 2018-July 2019)

Gary Burnette (Cheroenhaka (Nottoway))  
Board Vice Chair/Development Committee Chair

Amber Finley (Three Affiliated Tribes, Spirit Lake Dakota, Standing Rock Lakota)  
Board Secretary/Membership Committee Chair

Michael Laverdure (Turtle Mountain Band of Chippewa)  
Board Treasurer/ Finance Committee Chair

William Black  
Governance Committee Chair

Dr. Grace Bulltail (Crow Tribe, and a descendant of the Three Affiliated Tribes)  
Education Committee Chair

Barney "B.J." Enos (Gila River Indian Community)  
Governance Committee

Kristina J. Halona (Navajo)  
Nominations Committee Chair

Dr. John Herrington (Chickasaw)

Dr. Adrienne Laverdure (Turtle Mountain Band of Chippewa)

Shaun Tsabetsaye (Zuni Pueblo)  
Professional Development Committee Chair

## AISES Board of Directors 2019-2020

Gary Burnette (Cheroenhaka (Nottoway))  
Board Chair/Development Committee Chair  
Board Term: Nov 2018-2021

Michael Laverdure (Turtle Mountain Band of Chippewa)  
Board Vice Chair  
Board Term: Nov. 2019-2022

Dr. Grace Bulltail (Crow Tribe, and a descendant of the Three Affiliated Tribes)  
Board Treasurer/Finance Committee Chair  
Board Term: Nov. 2017-2020

Amber Finley (Three Affiliated Tribes, Spirit Lake Dakota, Standing Rock Lakota)  
Board Secretary/Membership Committee Chair  
Board Term: Nov 2019-2022

Deanna Burgart (Fond du Lac First Nation, Saskatchewan, Canada)  
Education Committee Chair/Governance Committee  
Board Term: Nov 2019-2022

Andrea Delgado-Olson (Ione Band of Miwok Indians)  
Board Term: Nov 2019-2022

Jodi DiLascio  
Development Committee/Governance Committee  
Board Term: Nov 2019-2022

Barney "B.J." Enos (Gila River Indian Community)  
Governance Committee  
Board Term: Nov. 2017-2020

Kristina J. Halona (Navajo)  
Nominations Committee Chair  
Board Term: Nov. 2017-2020

Dr. Adrienne Laverdure (Turtle Mountain Band of Chippewa)  
Board Term: Nov. 2017-2020

William Tiger (Miccosukee Indians of Florida)  
Governance Committee Chair  
Board Term: Nov 2019-2022

Shaun Tsabetsaye (Zuni Pueblo)  
Professional Development Committee Chair  
Board Term: Nov. 2017-2020

## Board Chair Emeritus

Rick Stephens (Pala Band of Mission Indians)  
Finance Committee/Governance Committee

## Founders

A.T. "Andy" Anderson (Mohawk)

Jerry C. Elliott-High Eagle (Cherokee/Osage)

Carol Metcalf Gardipe (Penobscot/  
Passamaquoddy)

George Thomas (Cherokee)

## Student Representatives Region 1

Brook Thompson (Yurok Tribe and Karuk Tribe)  
Portland State University - Civil Engineering/Political Science  
Rep Term: 2019/2020

Cody Kapotak (Portage Creek Village)  
University of Alaska Anchorage - Civil Engineering  
Rep Term: 2018/2019

## Region 2

Desiree Brazeau (Seneca Nation of New York)  
Loma Linda University - Occupational Therapy - Graduate  
Rep Term: 2018/2019/2020

## Region 3

Katherine Jacobs (Eastern Band of Cherokee Indians)  
Arizona State University - Finance  
Rep Term: 2019/2020

Cydney Walters (Navajo)  
University of Arizona - Environmental Science/  
Electrical Engineering  
Rep Term: 2018/2019

## Region 4

Adarius Begay (Colorado River Indian Tribes and Navajo)  
University of Oklahoma - Computer Science  
Rep Term: 2019/2020

Katelynn Morgan (Cherokee Nation)  
University of Arkansas - Civil Engineering  
Rep Term: 2018/2019

## Region 5

Makayla Mather (Tlingit and Haida Indian Tribes of Alaska)  
University of North Dakota - Environmental Geoscience  
Rep Term: 2019/2020

Sydney Schad (Cheyenne River Sioux Tribe)  
University of South Dakota - Health Sciences/Public Health Administration  
Rep Term: 2018/2019

## Region 6

Abigail Reigner (Comanche Nation)  
Rochester Institute of Technology - Mechanical Engineering  
Rep Term: 2019/2020

Adrian Riives (Sault Ste. Marie Tribe of Chippewa Indians)  
Rensselaer Polytechnic Institute - Chemistry - Graduate  
Rep Term: 2018/2019

## Region 7

McKalee Steen (Cherokee Nation)  
Vanderbilt University - Earth and Environmental Sciences  
Rep Term: 2019/2020

James Murr (Lumbee Tribe)  
University of North Carolina Pembroke - Chemistry  
Rep Term: 2018/2019

## U.S. Senior National

Jayne Sandoval (Navajo)  
Northern Arizona University - Mechanical Engineering/  
Comparative Cultural Studies  
Rep Term: 2019/2020

Steven Just (Sisseton-Wahpeton Sioux Tribe)  
University of Minnesota - Pharmacy - Graduate  
Rep Term: 2018/2019

## U.S. Junior National

Adrian Riives (Sault Ste. Marie Tribe of Chippewa Indians)  
Rensselaer Polytechnic Institute - Chemistry- Graduate  
Rep Term: 2019/2020

Jayne Sandoval (Navajo)  
Northern Arizona University - Mechanical Engineering/  
Comparative Cultural Studies  
Rep Term: 2018/2019

## Canadian Senior National

Brielle Thorsen (Saddle Lake Cree Nation)  
Queen's University - Mechanical Engineering/Applied Mathematics  
Rep Term: 2018/2019/2020

## Canadian Junior National

Joseph Calderone (Fort Nelson First Nation)  
Queen's University - Chemical Engineering  
Rep Term: 2019/2020



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STEMNATION

# LEADERSHIP

## LETTER FROM AISES LEADERSHIP

On behalf of the AISES Board of Directors, Council of Elders, staff, advisory councils, partners, members, and all those who are a part of the AISES family, we are happy to report that 2019 was another successful year. As leaders of the American Indian Science and Engineering Society (AISES), looking back at 2019, we have spent considerable time assessing our work to date while also planning for the future. In 2019, we continued to provide critically needed STEM programming and services to students and professionals, enabling them to enhance their knowledge and skills to problem solve, innovate, and build careers in academia, industry, government agencies, and tribal communities.

Here is a sampling of just some of what we accomplished together at AISES during 2019:

- Provided Indigenous STEM students over \$1 million in academic and travel scholarships.
- Completed a five-year strategic plan with the board, staff, and input from partners and members.
- Hosted the 2019 National Conference, themed “Indigenizing the Future of STEM,” in Milwaukee. After three busy days of learning, networking, and career building, the more than 1,900 participants enjoyed a traditional closing banquet with awards, recognitions, and popular entertainer SupaMan.
- Recognized five impressive STEM leaders as winners of the AISES Professional Awards.
- Supported the 31st annual National American Indian Science and Engineering Fair (NAISEF) in Stillwater, Okla., as both an in-person and virtual event.
- Welcomed three “first ever” Tribal Chapters, whose participation will increase STEM educational and professional opportunities for their communities.
- Provided support for Indigenous farmers and ranchers through the Advancing Agricultural Science Opportunities for Native Americans project.
- Convened the second meeting focused on computer science; attracting a diverse group of stakeholders from across the nation who are committed to increasing access to computer science education for Native students.
- Welcomed an impressive group of Indigenous STEM professionals from the U.S. and Canada as new board members.
- Celebrated AISES CEO Sarah EchoHawk’s recognition as a Comcast Newsmaker, where she was featured for her leadership and influence in Native STEM education.
- Honored Dr. Roger Dube (Mohawk Turtle Clan) as the 2019 winner of the Ely S. Parker Award for his 43 years of leadership, research, teaching, and contributions to STEM.
- Distributed scheduled issues of *Winds of Change* magazine, with timely articles, news of AISES members and chapters, and opportunities for readers – from pre-college through mature professionals – to gain knowledge and experience in their chosen fields.

This is just a small snapshot of some of what we accomplished in 2019. In reading this report, you will discover so much more about the increasing breadth and scale of our work. Together we have grown and expanded our reach bringing more STEM education, career resources, and support to Indigenous people.

AISES would not be here if not for our members and constituents – STEM students and professionals who are changing the world. They broaden our perspectives and inspire us to do more every day.

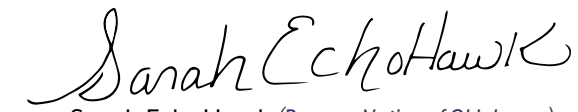
We are immensely grateful to our staff, partners, advisory councils, Council of Elders, and Board of Directors, all of whom are essential to our continued growth and success. Because of their commitment and dedication to our mission, we will continue to grow our AISES family.

As we look to the future, we are preparing for the new decade when AISES will be celebrating our 50th anniversary and continuing to fulfill our visionary founders’ dreams of a limitless future for Indigenous people in STEM.

We thank all of those who have been a part of our journey thus far and look forward to welcoming new members into our AISES family as we move into the future.



Rick Stephens (*Pala Band of Mission Indians*)  
Chairman of the Board



Sarah EchoHawk (*Pawnee Nation of Oklahoma*)  
Chief Executive Officer



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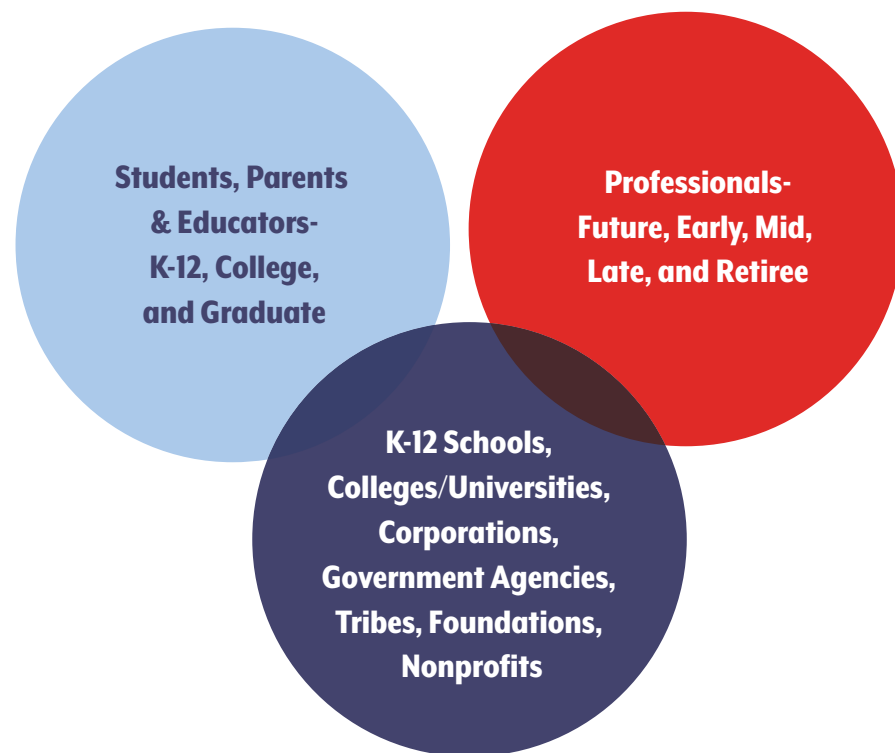
## AISES MISSION

Founded in 1977, the American Indian Science and Engineering Society (AISES) is focused on substantially increasing the representation of North America’s Indigenous people - American Indians, Alaska Natives, Native Hawaiians, Pacific Islanders, First Nations, Metis, Inuit – in STEM (science, technology, engineering, and math) studies and careers. This vibrant nonprofit currently supports individual student and professional members across the U.S. and Canada in critically needed STEM disciplines. Through chartered college and university chapters, professional chapters, tribal chapters, and affiliated K-12 schools, members benefit from diverse STEM-focused programming that supports careers and promotes student success and workforce development in multiple areas. To learn more visit [aises.org](http://aises.org).

## AISES THREE FOCUS AREAS



## WHO WE SERVE



## VALUES • STRATEGIES • PRIORITIES

### OUR VALUES

- Knowledge** - We are committed to the pursuit of knowledge and continuous growth in learning and teaching.
- Innovation** - We anticipate and embrace change and strive to learn and improve by seeking new approaches and forward thinking solutions.
- Relationships** - We actively build and continually steward transparent, honest, and ethical relationships with our partners, members and all others who are part of our extended AISES family.
- Commitment** - We do what we say we are going to do and conduct our business with the highest standards of professional behavior and ethics.
- Empowerment** - We embrace the collective power of Native people by encouraging initiative, leadership, and decision-making.
- Culture** - We honor our ancestors by carrying forward our cultural traditions and values in all that we do.

### OUR STRATEGIES

- Advancing Educational and Career Knowledge While Embracing Native Culture and Tradition
- Empowering Native People through Relationships and Innovative Resources
- Creating and Sustaining the AISES Community through a Full Circle of Support Services

### OUR PRIORITIES

- Build Awareness and Retention for Native K-12 Students, Partners, and Educators**  
Start the pathway by providing Native K-12 students, parents, and educators exposure to quality curriculum programs, and opportunities to interest and engage these audiences in STEM.
- Increase Access to and Success in STEM Higher Education**  
Continue the pathway through higher education by providing financial and academic support and opportunities to Native college students to increase the number of successful Native STEM majors.
- Provide Leadership and Promote Change to Improve Professional Opportunities in STEM**  
Support the pathway to keep Natives in STEM careers through support of professional Native STEM network and career development resources.
- Identify and Leverage Strategic Partnerships and Conduct Research in STEM**  
Illuminate the path by identifying the challenges and successes in Native STEM Workforce Development through research, data collection, and partnerships with other key STEM stakeholders.

# WHY STEM MATTERS



## Why STEM Matters

- STEM is the future of the workforce. Distance working and distance learning are to increase considerably as more companies, organizations, and institutions avail themselves of the benefits offered by these technologies. (OECD. *The Future of Families to 2030*, 2011)
- The national median wage for STEM annual salaries is \$86,980, where non-STEM occupations sits at below half - \$38,160. (Bureau of Labor Statistics, 2019)
- Employment in STEM occupations from 2018 -2028 is projected to rise by over 8% (9.7 million to 10.6 million) compared to a 5% rise in non-STEM occupations. (Bureau of Labor Statistics, 2019)
- The long-term strength of our workforce requires that the full range of STEM and non-STEM career pathways be available to all Americans. (National Science Board, *Revisiting the STEM Workforce*, 2015)
- STEM, Healthcare Professions, Healthcare Support, and Community Services will be the fastest growing occupations, but also will require high levels of post-secondary education. (Center on Education and the Workforce, 2013)
- 4 million U.S. computing-related job openings are expected by 2028. (NCWIT)

## STEM Provides Equity and Opportunity

- Bachelor's degrees are more likely to interrupt intergenerational cycles of poverty and close race-based, income-based equity gaps than any other pathway, making them especially important as an option for low-income students and students of color. (Washington STEM White Paper, 2019)
- In 2016 and 2017, median earnings for early career bachelor's degree recipients ranged from \$32,100 a year for early childhood education majors to \$62,000 for computer science majors. For those mid-career, median earnings ranged from \$41,000 to \$95,000. (College Board Report, 2019)
- The earnings path is the steepest for individuals with advanced degrees. Between 2013 and 2017, the gap in median earnings between those with professional degrees and those with bachelor's degrees was 30% for 25- to 29-year-olds and 88% for 60- to 64-year-olds. (College Board Report, 2019)

## STEM Improves Opportunities for Women and Girls

- Women's participation in the job market in the U.S. has doubled from 50 years ago. (OECD. *The Future of Families to 2030*, 2011)
- In 1977, female students accounted for 49% of all college students. By 2017, this percentage had grown to 57%. (NCES, *Digest of Education Statistics*, 2018)
- Overall, women account for a minority of the world's researchers. (UNESCO Institute for Statistics, 2019)
- AI/AN women have earned about 1,800 science and engineering bachelor's degrees each year from 2005-2014. In 2017, there were 165.92 million women in the U.S. compared to 159.41 million men. By 2024, it is projected that there will be 173.9 million women and 167.08 million men in the U.S. (Statista, 2017)
- As the demand for workers grows, women who are entering the workplace are slowly changing the wage gap with male counterparts. (OECD. *The Future of Families to 2030*, 2011)
- 50% of 2019 Intel Science and Engineering (ISEF) finalists were girls. (NCWIT)

## The Business Case for Diversity

- While STEM industries are booming, there is still a significant lack of diversity in these fields. (Women Love Tech)
- Improving ethnic and gender diversity in the U.S. technology workforce represents a massive economic opportunity, one that could generate \$470 to \$570 billion in new value for the tech industry, and could add 1.2-1.6% to national GDP. (Intel, *Decoding Diversity*, 2016)
- U.S. companies need to make a dedicated effort to achieve diversity of leadership that reflects the demographic composition of the country's labor force and population. (McKinsey & Company, *Diversity Matters*, 2015)
- A study of 1,500 employees found that nearly half said their companies could improve diversity, gender, race and ethnicity. (Built In)
- Our nation's human capital substantially grows as more women, racial and ethnic minorities, and gay and transgender individuals enter the workforce. (Center for American Progress)

## Most Native American students are not educationally prepared to undertake a STEM degree in college

- Fewer than half of students taking the SAT meet the benchmarks, with results for several races and ethnicities falling even shorter. (College Board, *Delivering Opportunities SAT Suite of Assessments Results 2016-17*)
- Only 8% of ACT-Tested American Indian and Alaska Native (AI/AN) high school graduates meet college readiness and STEM benchmarks. (ACT.org)
- Fewer than half of American Indian high school students have a full range of math and science courses available at their schools. (Department of Education)
- According to AP Program Participation and Performance data, AI/AN students consistently scored lower than the national mean in biology, calculus, chemistry, computer science, physics and statistics subjects (College Board, AP Program 2019)
- Only 3 out of 10 AI/AN students took any such Advanced Placement science course in U.S. Public Schools. (College Board, *Report to the Nation*, 2014)

# NUMBERS

## AISES BY THE NUMBERS

### Today<sup>1</sup>

- 5,900+ Individual Members
- 19 Professional Chapters
- 195 College/University Chapters
- 3 Tribal Chapters
- 222 K-12 Affiliated Schools enrolling more than 55,000 Native Students
- \$12+ Million in Academic Scholarships



### 2019<sup>2</sup>

- Membership: 4,800+
- Annual Revenue: \$7,694,515
- How we spent our funding 2019:
  - Administration and Development = 13%
  - Programs = 87%

### 2018<sup>3</sup>

- Membership: 4,707
- Annual Revenue: \$7,107,185
- How we spent our funding 2018:
  - Administration and Development = 13%
  - Programs = 87%

### 2017<sup>4</sup>

- Membership: 4,460
- Annual Revenue: \$6,162,987
- How we spent our funding 2017:
  - Administration and Development = 18%
  - Programs = 82%

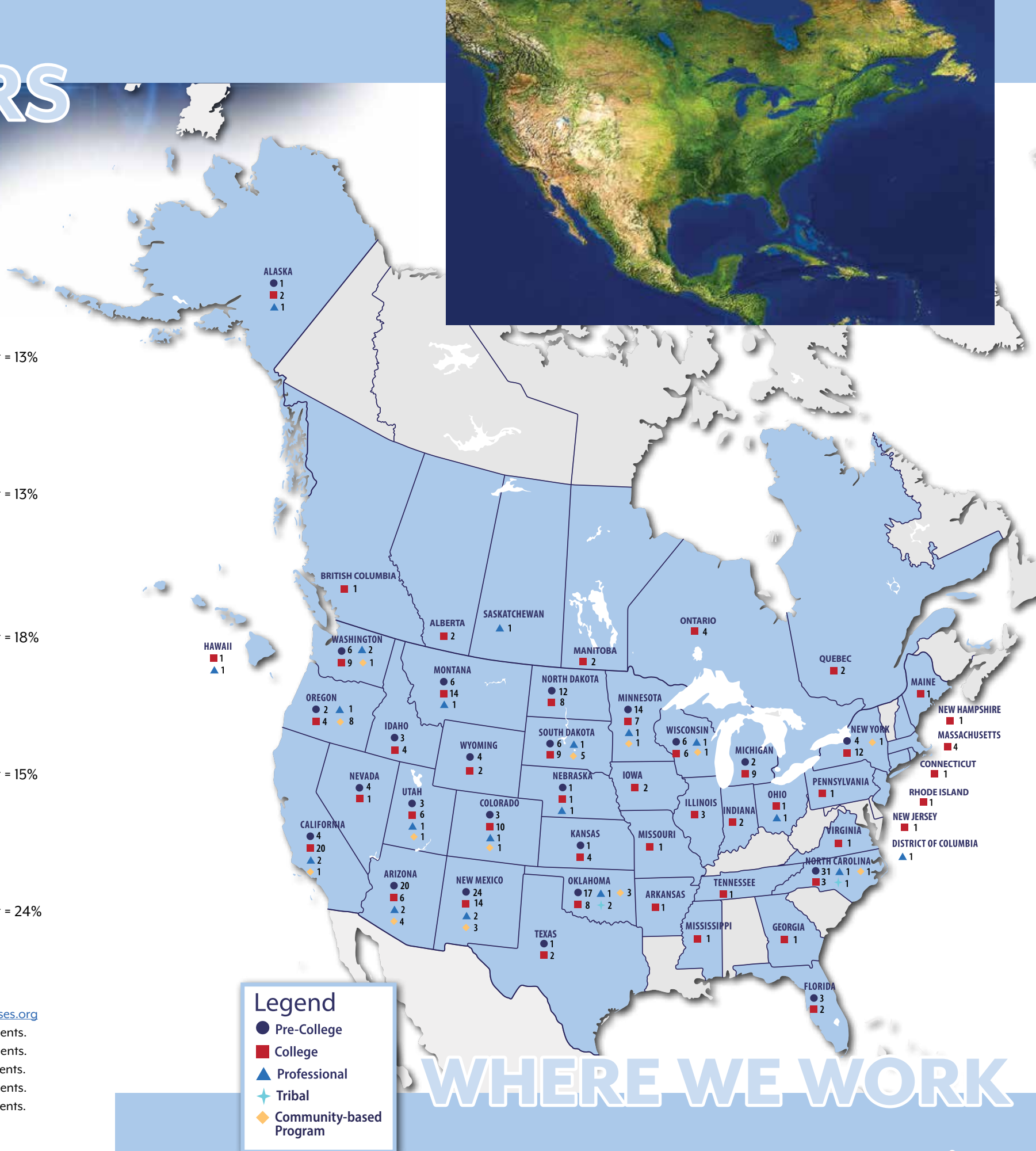
### 2016<sup>5</sup>

- Membership: 3,984
- Annual Revenue: \$5,435,512
- How we spent our funding 2016:
  - Administration and Development = 15%
  - Programs = 85%

### 2015<sup>6</sup>

- Membership: 3,727
- Annual Revenue: \$3,131,024
- How we spent our funding 2015:
  - Administration and Development = 24%
  - Programs = 76%

1 Audited financial statements and IRS 990 forms are available at [www.aises.org](http://www.aises.org)  
 2 Revenue and Program funding reported in 2019 audited financial statements.  
 3 Revenue and Program funding reported in 2018 audited financial statements.  
 4 Revenue and Program funding reported in 2017 audited financial statements.  
 5 Revenue and Program funding reported in 2016 audited financial statements.  
 6 Revenue and Program funding reported in 2015 audited financial statements.





# ADVISORY COUNCILS

## Overview

AISES currently has seven Advisory Councils: the Corporate Advisory Council (CAC), Government Relations Council (GRC), Academic Advisory Council (AAC), Professional Chapter Council (PCC), Canadian Indigenous Advisory Council (CIAC), Tribal Nations Advisory Council (TNAC), and the Council of Elders. Each of these Councils play an important role in advising AISES in its work for their respective sectors; with the Council of Elders advising the board and the organization on traditional and cultural matters.

## Academic Advisory Council

The Academic Advisory Council (AAC) provides guidance to AISES regarding academic matters such as grant proposal writing, educational and research project design, faculty careers, college admissions and financial aid, postgraduate study and fellowship opportunities, research opportunities, and other higher education opportunities. Chair: **Dr. Mary Jo Ondrechen** (*Mohawk*) Northeastern University.

## Canadian Indigenous Advisory Council

The Canadian Indigenous Advisory Council (CIAC) consists of representatives from the Canadian Indigenous STEM community. The primary role of the CIAC is to advise AISES on issues of relevance and importance to its Canadian Indigenous (Status and Non-Status First Nation, Métis and Inuit) members. In addition, the CIAC works to assist AISES in creating opportunities to Canadian Indigenous members, and to support the AISES mission in increasing the representation of Canadian Indigenous people in STEM fields. Co-Chairs: **Melanie Howard** (*Mohawk, Kanehsatake*), Queen's University and **Dennis Michaelson**, Ph.D. (*Métis-Cree, Métis Nation of Ontario*), Western University.

## Corporate Advisory Council

The Corporate Advisory Council (CAC) is comprised of corporate representatives who support AISES Leadership and Board of Directors by providing industry advice and counsel to the AISES' Chief Executive Officer and the Board of Directors. Co-Chairs: **Laurence Brown** (*Navajo*), Sandia National Labs, and **Christopher J. Payne** (*Cherokee*), The Boeing Company.

## Council of Elders

The Council of Elders share their wisdom and guidance with AISES students and the organization. The Council of Elders represent an integral aspect of the AISES philosophy of passing on knowledge to the next generation. Information can be found in the annual report front cover of the committed and passionate Council of Elders who have a vital role of sharing their knowledge with the entire AISES family.

## Government Relations Council

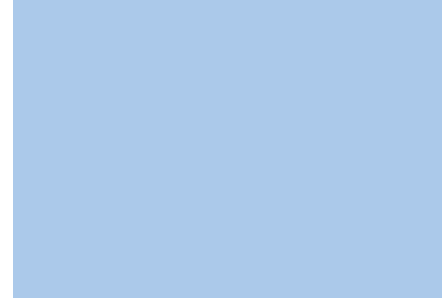
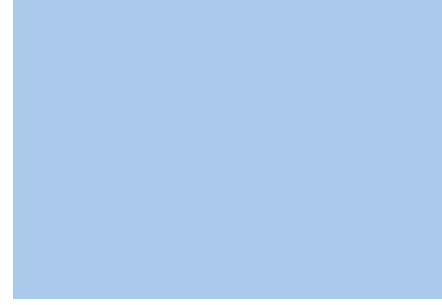
The Government Relations Council (GRC) is comprised of U.S. Government Employees. The GRC establishes and supports working relationships between federal government agencies and AISES, and identifies government resources, develops strategies, and promotes government careers in support of the AISES mission. Chairs: **James Daugomah** (*Kiowa*), National Oceanic and Atmospheric Administration, **Noller Herbert** (*Navajo*), USDA Natural Resources Conservation Service, **Marcellus Proctor** (*Piscataway-Conoy*), National Aeronautics and Space Administration.

## Professional Chapter Council

The Professional Chapter (PCC) consists of representatives who provide guidance and representation for professional chapters, to advise AISES on issues of importance to professional chapters and their members, to increase opportunities for AISES professionals, and support the AISES mission. Chair: **Dr. Joe Connolly** (*Haudenosaunee of the Onondaga Nation*), National Aeronautics and Space Administration.

## Tribal Nations Advisory Council

The Tribal Nations Advisory Council (TNAC) consists of representatives from Tribal Nations in the U.S. and Canada. The TNAC advises AISES on issues of relevance and importance to Tribal Nations. Additionally, the TNAC works to assist AISES in creating opportunities for Tribal Nation's citizens, and to support the AISES mission. Chair: **John Lewis** (*Gila River Indian Community*), Avante Energy.



## K-12 PROGRAMMING

### AISES Computing and Engineering Summer (ACES) Camp in Partnership with Intel

AISES will host a summer camp focused on computer science and college and career readiness in CS. The summer camp is for high school students going into their junior and senior years and will highlight careers with Intel and the educational goals necessary to become a CS professional and work for technology companies like Intel. AISES will host the camp on the Arizona State University campus, highlighting opportunities at ASU and the exciting research and technology found at institutions like ASU. The core of the summer camp will focus on a week-long, introductory coding curriculum using Sphero robots and block coding to get students interested in coding while providing a foundation to learn more. The summer camp will also feature a field trip to the Intel campus in Chandler, AZ. Additionally, students will have the opportunity to network with ASU AISES students and ASU faculty, and college mentors will help guide the camp, giving students plenty of opportunities to ask questions and learn about preparing for and succeeding as a CS major in college.

### Energy Challenge Competition

The AISES Energy Challenge is an energy-specific science and engineering fair designed to engage and encourage high school and middle school students to participate in science, technology, engineering, and math (STEM) education through a creative, hands on, problem solving, and engineering process in an environment similar to a science fair. Middle and high school students may compete as individuals, or as teams consisting of up to four students. The students/teams ensure a rigorous scoring system and compete against a multitude of other teams. All students/teams must have an adult sponsor. The sponsor can be either a parent, teacher, or mentor. The top two teams are awarded a trip to Washington, D.C. to receive their awards, present their projects at the U.S. Department of Interior, and participate in educational activities during their stay in our nation's capital.

### hackAISES

hackAISES is a crash course in coding basics, team building, APIs, and other relevant information designed to introduce students to concepts in computer science. Mentors are available to help students troubleshoot issues and answer questions. At the end of the hackathon, a wrap-up session gives each team a chance to present and demonstrate their accomplishments. hackAISES is a popular event at the annual AISES National Conference.

### Intel Next Generation of Native Coders Initiative

Intel's Next Generation of Native American Coders Initiative developed the Applied CS Principles and Career Readiness course in 2018, implementing the course at two schools on the Navajo Nation during the 2018-2019 academic year. The course is a Computer Science Career and Technical Education curriculum that engages students and prepares them for computer science degrees and careers through hands on independent projects, technical education integrating Native culture, interactive CS skill-building activities, professional and peer mentorship, and college, career, and leadership development. This AISES-developed course will be implemented at four new high schools with a majority Native population during the 2020-2021 academic year. Students will develop a practical, project-based understanding of computer science and its applications, a more in-depth awareness of the educational and career opportunities in computer science and related fields and cultivate critical skills necessary to be successful in CS higher education and workforce.



### National American Indian Science and Engineering Fair

The National American Indian Science and Engineering Fair (NAISEF) is a Society for Science and the Public (SSP) affiliated science fair and as such is part of the larger SSP fair network. The NAISEF differs from other SSP-affiliated fairs in that it is an in-person and virtual science fair which allows access for students who might not otherwise be able to participate. Unlike live fairs, virtual fairs do not require travel as the fair and judging are conducted online and via phone or videoconference. Participants submit their projects as videos and slideshows online. Students from grades 5-12 can participate in the NAISEF. There are two categories for entrants, Senior Division (grades 9-12) and Junior Division (grades 5-8). AISES awards cash prizes to the winners of each division and winners are provided support to travel to and compete in the Regeneron International Science and Engineering Fair that is the world's largest international pre-college science competition held in a major U.S. city.

### National Conference STEM Day

Supported by the Boeing Company, this fun, interactive day of activities includes hands on STEM activities for pre-college students and educators. STEM Activity Day features a Marketplace where pre-college students can visit a variety of booths to learn more about AISES pre-college opportunities and gain valuable professional development skills such as resume building, college application tips, AISES opportunities, and more!

### Paths to Opportunities Newsletter – Student Edition

*Paths to Opportunities* is distributed monthly to more than 14,000 AISES members, subscribers, and supporters. This must-read digital newsletter is for pre-college, college, and graduate students. It contains news of student opportunities along with editorial content targeted to the unique student demographic of Indigenous North Americans in STEM disciplines. Each issue has news from the AISES family on timely topics and upcoming events. The student edition includes news of scholarships, fellowships, and internships as well as articles that will help them succeed academically and stay on a path leading to a satisfying career in a STEM-related field.

### Research and Poster Presentations and Competitions

Middle and high school, undergraduate, and graduate students and professionals showcase their STEM research through oral and poster presentation sessions during the AISES National Conference. AISES research poster presentations and competitions are the highlight and representation of months of hard work where individuals present their findings to an audience of STEM students and professionals. These presentations give students and professionals the opportunity to share their research and receive valuable feedback on their work. Awards are given for exceptional research presentations.



## SPRK-ing Interest in Computer Science

This AISES program combines robotics and computer programming to increase awareness and interest in STEM and Computer Science (STEM+C) among Native American students. The program engages students in hands on STEM+C activities powered by Sphero technology, created by AISES and tailored to Native students. AISES has partnered with the toy company Sphero to bring their educational spherical robot to Native American serving K-12 schools across the country. Sphero is easily integrated into STEM curricula, allowing even the youngest students to learn programming, engage in hands on STEM+C activities, bridge technology and the arts, and enjoy creative discovery with their classmates. The goal of this STEM+C program is to inspire young Native minds to pursue and excel in their STEM and CS education. Additionally, AISES hopes to build the capacity of educators and schools to provide cutting-edge technological STEM+C experiences for its students by providing teacher trainings, lesson plans, and all the equipment necessary to incorporate Sphero technology in the classroom.

## STEM College and Career Readiness Programs

AISES is developing a College and Career Readiness (CCR) Guidebook specifically addressing STEM education and careers and the unique needs, values, and workforces of Native students and tribal communities. The CCR guidebook and programming aims to better prepare Native students to attend college and major in STEM, thereby helping address the significant underrepresentation of Native people in STEM studies and careers. The CCR resources will provide students and educators with STEM college and career assessments, an overview of STEM careers, STEM careers pertinent to tribal communities, a college assessment tool, college application guide, scholarships for Native students, resume and interview training, and basic financial literacy. AISES will also develop tools for implementing the CCR Guidebook both in and out of the classroom. AISES' STEM CCR programs are funded by the Northwest Area Foundation, Meyer Memorial Trust with development specifically focused on Oregon tribal communities, and 3M.



## COLLEGE PROGRAMMING

### Advancing Agricultural Science Opportunities for Native Americans (AASONA)

With funding from the Native American Agriculture Fast Track Fund (NAAFTF), AISES developed the AASONA program to support agricultural science scholarships and education for Native Americans in farming and ranching professions. Through this project, AISES will provide comprehensive support to current and potential Native American farmers and ranchers. Thirty college students will participate in a cohort and receive scholarships and research awards as well as travel support to attend AISES national events. The cohort also includes ten professionals in agricultural fields to mentor cohort college students.

### ASSIST Project

Funded by the National Science Foundation (NSF) and in partnership with Great Minds in STEM (GMiS); Latinos in Science and Engineering (MAES), National Society of Black Engineers (NSBE), Advancing Chicanos/Hispanics and Native Americans in Science (SACNAS), Society of Hispanic Professional Engineers (SHPE), and the Society of Women Engineers (SWE), AISES is working to support Native Americans who are early-career faculty, graduate students, and postdoctoral professionals in any field of engineering. The overall focus of the project is to target and support those who are traditionally underrepresented in engineering fields.

## College and Career Fair

An important part of every National Conference, the College and Career Fair is the largest event of its kind in Indian Country. A wide variety of organizations, agencies, nonprofits, and colleges and universities participate to share information about the many opportunities available for students and professionals.

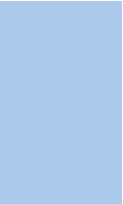
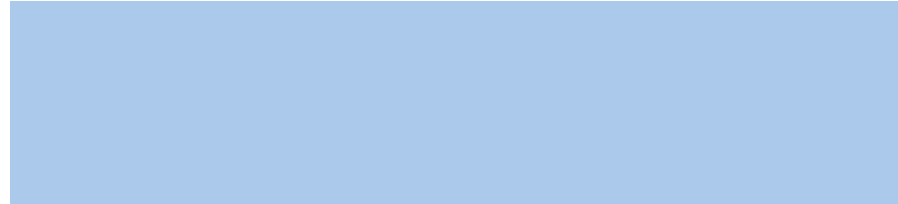
## College/University Tours

AISES National Conference participants can take part in events like college/university tours and industry tours. Students receive presentations on admissions, financial aid, and curriculum as well as campus tours with current students who talk about student life, classroom resources, and technology. The behind the scenes look at leading colleges/universities generates wonder and inspiration to students who are transitioning from high school in preparation for college.

## Intel Growing the Legacy Scholarship Program

In 2015, AISES received a \$1.32 million four-year commitment from the Intel Corporation to support undergraduate and graduate scholarships for Native Americans in computer science fields. The scholarship program supports Native American students annually by providing them with financial support, Intel mentors, paid internships, and Intel jobs upon successful graduation.





**Internships**

The AISES Summer Internship program provides students with a 10-week applied summer work experience at a business or government agency and an opportunity to explore career options and to develop professional-level skills. Interns gain resume-building skills and develop professional networks. In some cases, students create their own professional internship program within their discipline of study and within the parameters of the host agency.

**Native Financial Cents**

With funding from the Wells Fargo Foundation, AISES created the “Native Financial Cents: Supporting Financial Capability for Native Americans” program, culturally contextualizing the Wells Fargo Hands on Banking curriculum to build the financial capability of Native youth. AISES developed the Native Financial Cents curriculum for elementary and middle school students and young adults (high school and above) and corresponding training. The curriculum will be deployed by a cohort of AISES college students and professionals—ambassadors—who provide train-the-trainer trainings or direct trainings in their communities and at the colleges/universities they represent.

**Scholarships**

AISES helps students move forward in their educational journeys by providing a broad range of scholarship opportunities. Scholarships help students acquire skills and training that will help them meet the unique STEM needs of our communities. Our scholarship process is enhanced by our partnership with Indigenous Education Inc. (Cobell Scholarship Fund). This partnership provides a one-stop shop for students to complete information that aligns their goals with scholarships from other potential organizations that streamlines scholarship access.

**PROFESSIONAL PROGRAMMING**

AISES is dedicated to supporting its professional members in STEM. We support early, mid, and executive professionals in STEM fields through professional development, career opportunities, networking, research support, and opportunities to mentor and support Native students in STEM. AISES support does not end once a student graduates from college and enters a STEM career but rather provides ongoing career and professional development programming to help Native STEM professionals grow and succeed in their chosen career fields. Additionally, AISES offers a multitude of opportunities for professionals to “give back” through mentoring and supporting Native STEM students. Programming for professionals includes mentoring of students, scholarship review, research and science fair judging, serving as speakers and trainers at AISES events, advisory council service, professional development programming, career fair, professional awards, or engage in a growing professional chapter network across the U.S. and Canada.

**Career Hub**

The AISES Career Hub is the premier way to connect with organizations hiring Native STEM professionals. Visitors can search opportunities in academia, government, nonprofit, and other STEM industries. Employers can post their job openings to attract qualified Native STEM professionals through multiple channels and access to a resume database to find the right candidate for the job.

**Paths to Opportunities Newsletter – Professional Edition**

The *Paths to Opportunities* newsletter is for active STEM professionals and educators. It includes news of career development, internships, and employment opportunities with outstanding organizations, agencies, universities, and corporations in multiple STEM fields, as well as articles and tips on building a flourishing career.

**Professional Chapters/Mentorship**

The focus of the AISES Professional program is “leadership and change.” AISES is dedicated to supporting its professional members in STEM by providing a network of professional chapters, and an annual professional awards program to celebrate excellence in the field.





## OTHER INITIATIVES

### Capacity Building for AISES

In 2018, AISES received a two-year \$250,000 grant from the Wells Fargo Foundation to help ensure AISES has the capacity to continue to grow and support long-term sustainability. AISES is using the funding to: 1) address immediate staffing needs, 2) develop a five-year Strategic Plan/Business Plan, 3) create a succession plan, and 4) provide critical business training to support its chief executive officer, management team, staff, and the board of directors.

### Planned Giving Services

In 2018, AISES embarked on a board approved direct mail campaign to increase its operating budget now at over \$7 million annually. In its 40+ year history, AISES has relied on individual donations from the public and it has developed an individual giving program, in addition to implementation in 2021 of major donor and planned giving programs. AISES currently sustains itself through individual giving, grants (corporate, foundation, and federal), and its oldest program – the Sequoyah Fellows Lifetime Members Program.

To learn more about the range of initiatives administered by AISES, visit [aises.org](http://aises.org).



PLANNED GIVING

Our Promise  
to MAKE a  
*difference*





# SCHOLARS

## AISES INTERNS

### BMM Testlabs Interns

Jonah Sandoval (Ohkay Owingeh)

Sean Eaton (Navajo Nation)

### Oracle Corporation Interns

Casey Key (Oglala Sioux Tribe)

Lee Johnson, Jr. (Navajo Nation)

### BPA Interns

Savannah Hensley (Confederated Salish and Kootenai Tribes)

Zachary Arquette (Confederated Tribes and Bands of the Yakama Nation)

### Forest Products Lab Interns

Dillon George (Confederated Tribes of the Umatilla Reservation)

Kayla Johnson (Eastern Band of Cherokee Indians)

### Aristocrat/VGT Intern

Kyle Collins (Nome Eskimo Community)

## ADVANCING AGRICULTURAL SCIENCE OPPORTUNITIES FOR NATIVE AMERICAN SCHOLARS

Anne Brien (Turtle Mountain Band of Chippewa Indians)

Anthony Ciocco (Muscogee (Creek) Nation)

Benton Denny (Cherokee Nation)

Brookelyn Gilmore (Cherokee Nation)

Cayden Catlin (Caddo Nation)

Daniel Hayden (Comanche Nation)

Dawson Hollingsworth (Hoonah Indian Association)

Desirae Kissell (Muscogee (Creek) Nation)

Donna Lee Kuehu (Native Hawaiian)

Echo Ecoffey (Oglala Sioux Tribe)

Emiliano McLane (Te-Moak Tribe of Western Shoshone Indians)

Eva Burk (Nenana Native Association)

Haile' Chase- The Boy (Fort Belknap Indian Community)

Jolene Tamm (Squaxin Indian Tribe)

Kealohi Sabate (Native Hawaiian)

Lauren Hogner (Cherokee Nation)

Layla Wilbur-Westendorf (Swinomish Indian Tribal Community)

McKenzie Cummings (State Recognized Tribe)

Mikayla Winter (Prairie Band Potawatomi Nation)

Miranda Felix (Cherokee Nation)

Owen Gustafson (Mandan, Hidatsa and Arikara Nation)

Roy Stovall (Seneca Cayuga Tribe)

Samathan Hilborn (Laguna Pueblo)

Spring BrayBoy (State Recognized Tribe)

Troy Clark (Washoe Tribe)

Ty Montgomery (Chickasaw Nation)

Ty Werdel (Sisseton Wahpeton Oyate)

Xavier Hawley (Fort Belknap Indian Community)

## ARISTOCRAT/VGT SCHOLARS

Alexis Rael (Navajo Nation)

Anna Cosby-Trumbly (Osage Nation)

Audra Benally (Navajo Nation)

Beau Forest (Karuk Tribe)

Carlton Charles (Navajo Nation)

Jonah Sandoval (Ohkay Owingeh)

Jonathan Knowles (Chickasaw Nation)

Kalen Sixkiller (Cherokee Nation)

Kealyssa Castillo-Martin (Native Hawaiian)

Kordell Schrock (Sac and Fox Nation)

Olivia Watson-Bonthu (Choctaw Nation)

Rael McAmis (Chickasaw Nation)

Rachel Wilson (Choctaw Nation)

Randa Shaw (Choctaw Nation)

Serdjan Rolovic (Osage Nation)

Tiffany Smith (Cherokee Nation)

Trinity Manuelito (Navajo Nation)

Tsali Smith (Descendancy)

## A.T. ANDERSON MEMORIAL FUND SCHOLARS

Aaliyah Pitts (Native Hawaiian)

Austin Dunegan (Choctaw Nation)

Chelsie Fowler (Navajo Nation)

Christian Miller (Navajo Nation)

Christina Di Bernardo (Citizen Potawatomi Nation)

Danielle Nowosad (Manitoba Métis Federation)

Deatrick LaPointe (Rosebud Sioux Tribe)

Dineh Bohan (Navajo Nation)

Donna Lee Kuehu (Native Hawaiian)

Donovan David (Navajo Nation)

Elayna Locklear (State Recognized Tribe)

Erica Poe (Cherokee Nation)

Ethan Darwin (Navajo Nation)

Fontana Stewart (Crow Nation)

Gavin Parisien (Turtle Mountain Band of Chippewa)

Hailey James (Ft. Belknap Indian Community)

Jae-De Kaeo-Jeremiah (Native Hawaiian)

Jeremy Harley (State Recognized Tribe)

Jerod Jimmie (Navajo Nation)

Jillian Taylor (Cherokee Nation)

Joel Grant (Métis Nation of Alberta)

Leah Shamblin (Cherokee Nation)

Marshand Vasquez (Confederated Tribe of the Colville Indian Reservation)

McKenzie Cummings (State Recognized Tribe)

Nadira Mitchell (Navajo Nation)

Nalani Miller (Native Hawaiian)

Nathan Balk King (Rosebud Sioux Tribe)

Olivia Watson-Bonthu (Choctaw Nation)

Owen Gustafson (Mandan, Hidatsa and Arikara Nation)

Paige Skeets (Navajo Nation)

Royal Roan Eagle (Oglala Sioux Tribe)

Sally Thurman (Muscogee (Creek) Nation)

Sebastian Diaz (Pascua Yaqui Tribe)

Seth Eben (Cherokee Nation)

Sierra Kaufman (Shinnecock Indian Nation)

Taymee Brandon (Turtle Mountain Band of Chippewa Indians)

William Driemeyer (Chickasaw Nation)

Xavier Hawley (Fort Belknap Indian Community)

Zahlanii Henderson (Navajo Nation)

Kai John (Confederated Tribes of the Umatilla Indian Reservation)

Jeffrey Omidvaran (Taos Pueblo)

Jessica Lambert (Choctaw Nation)

Taylor DiGiacinto (Cherokee Nation)

Rachel Wilson (Choctaw Nation)

Destany Pete (Shoshone-Paiute Tribes of the Duck Valley Reservation)

Esme Roddy (Sault Ste. Marie Tribe of Chippewa Indians)

Jolie Beentjes (Sault Ste. Marie Tribe of Chippewa Indians)

Erika McPhetridge (Navajo Nation)

## BURLINGTON NORTHERN SANTA FE SCHOLARS (BNSF)

Alexis Newby (Tanana Tribe)

Clifford Courvoisier (Navajo Nation)

Elizabeth Guerino (Choctaw Nation)

Emily Bauers (Navajo Nation)

Jacob Willis (Choctaw Nation)

Kara Derrick (Cherokee Nation)

Kelley Charley (Navajo Nation)

Maycie McDougal (Choctaw Nation)

Maysyn Sorensen (Red Cliff Band of Lake Superior Chippewa Indians)

Nathan Stewart (Crow Tribe)

Olivia Panarella (Native Hawaiian)

Reese Dyer (Choctaw Nation)

Remington Ward (Cherokee Nation)

Sarah LaVallie (Turtle Mountain Band of Chippewa Indians)

Shay Allison (Navajo Nation)

Sierra Sallee (Cherokee Nation)

## CHEVRON CORPORATION SCHOLARS

Asher Andoe (Choctaw Nation)  
 Carlton Charles (Navajo Nation)  
 Carter Johnson (Alaska Native)  
 Cole Walker (Cherokee Nation)  
 Henry Camblin (Osage Nation)  
 Ilaisaane Summers (Native Hawaiian)  
 Jadon Allen (State Recognized Tribe)  
 Jadon Shortman (Fort Belknap Indian Community)  
 Jonathan Knowles (Chickasaw Nation)  
 Kalen Sixkiller (Cherokee Nation)  
 Katelynn Morgan (Cherokee Nation)  
 Keeley Yazzie (Navajo Nation)  
 Kelley Charley (Navajo Nation)  
 Leticia Cervantes (Iowa Tribe)  
 Makayla Platt (Tlingit & Haida Indian Tribes)  
 Matthew Johnson (Little River Band of Ottawa Indians)  
 Maycie McDougal (Choctaw Nation)  
 Roshonda Shurley (Navajo Nation)  
 Trevor Carroll (Cherokee Nation)  
 Trinity Manuelito (Navajo Nation)  
 Wai Allen (Navajo Nation)  
 William Driemeyer (Chickasaw Nation)

## EXXONMOBIL SCHOLAR

Tyler Rust (Oglala Sioux Tribe)

## INTEL GROWING THE LEGACY UNDERGRADUATE SCHOLARS

Adarius Begay (Colorado River of Indian Tribes and Navajo Nation)  
 Alden Davison (Citizen Potawatomi Nation)  
 Alexis Rael (Navajo Nation)  
 Beau Forest (Karuk Tribe)

Carlton Charles (Navajo Nation)  
 Carter Johnson (Alaska Native)  
 Casey Key (Oglala Sioux Tribe)  
 Daniel Glover (Muscogee (Creek) Nation)  
 Daneil Holland (Muscogee (Creek) Nation)  
 Evan Tupponce (Upper Mattaponi Tribe)  
 Ilaisaane Summer (Native Hawaiian)  
 Jeffrey Omidvaran (Taos Pueblo)  
 JohnDavid Lancaster (Muscogee (Creek) Nation)  
 Jonah Sandoval (Ohkay Owingeh)  
 Jonathan Knowles (Chickasaw Nation)  
 Kalen Sixkiller (Cherokee Nation)  
 Kordell Schrock (Sac and Fox Nation)  
 Lee Johnson Jr. (Navajo Nation)  
 Leticia Cervantes (Iowa Tribe)  
 Matthew Johnson (Little River Band of Ottawa Indians)  
 Olivia Watson-Bonthu (Choctaw Nation)  
 Owen Butler (Muscogee (Creek) Nation)  
 Ravi Smith (Makah Indian Tribe)  
 Roshona Shurley (Navajo Nation)  
 Sean Eaton (Navajo Nation)  
 Serdjan Rolovic (Osage Nation)  
 Shay Allison (Navajo Nation)  
 Trinity Manuelito (Navajo Nation)

## INTEL GROWING THE LEGACY GRADUATE SCHOLARS

Benjamin Parker (Squaxin Indian Tribe)  
 Brandon Werner (Native Hawaiian)  
 Dianne Williams (Oneida Tribe of Indians)  
 George Lemos (Oglala Sioux Tribe)  
 Kari Noe (Native Hawaiian)  
 Kealyssa Castillo-Martin (Native Hawaiian)  
 Michael Charles (Navajo Nation)  
 Paulina Davison (Citizen Potawatomi Nation)



## INTEL NATIVE NEXT GENERATION SCHOLARS

Rylan Tsinnajinnie (Navajo Nation)  
 Sienna Smith (Navajo Nation)  
 Trent Begay (Navajo Nation)

## NEXTERA SCHOLARS

Devon Smith (Navajo Nation)  
 Marian Lighthall (Cherokee Nation)  
 Madison Phelps (Sisseton Wahpeton Oyate)  
 Maycie McDougal (Choctaw Nation)  
 Keely Yazzie (Navajo Nation)

## ORACLE ACADEMY SCHOLARS

Brandon Werner (Native Hawaiian)  
 Kalen Sixkiller (Cherokee Nation)  
 Matthew Johnson (Little River Band of Ottawa Indians)

## LEADERSHIP SUMMIT TRAVEL SCHOLARS

McKalee Steen (Cherokee Nation)  
 Taylor Russell (Navajo Nation)  
 Christian Jimmie (Navajo Nation)  
 Marcie Vandever (Navajo Nation)  
 Royal Roan Eagle (Oglala Sioux Tribe)

## NATIONAL CONFERENCE TRAVEL SCHOLARS

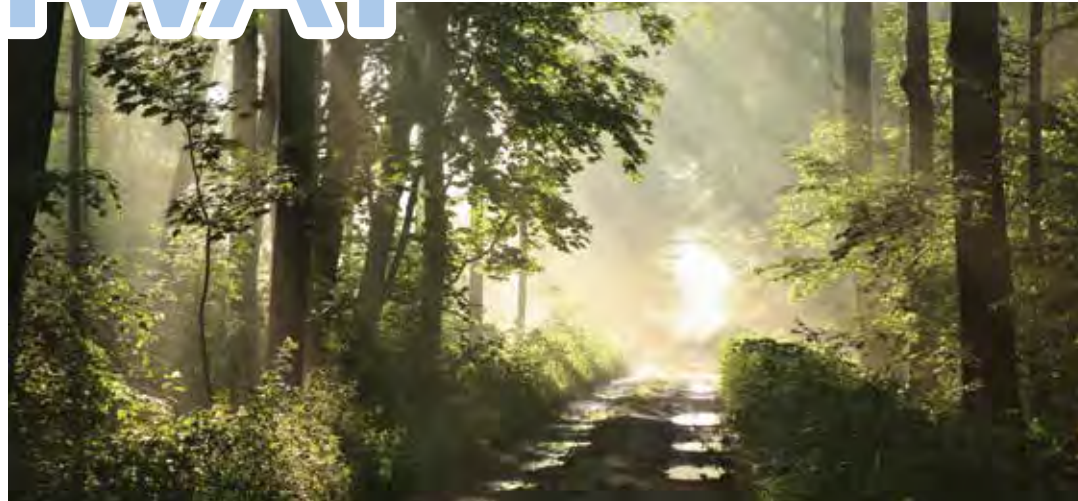
Amanda Ruiz (Rosebud Sioux Tribe)  
 Carmen Wong (Canadian First Nations)  
 Devan Massin (Pribilof Island Aleut Communities of St. Paul & St. George Islands)  
 Joshua Platero (Navajo Nation)  
 Melissa Jacquez (Navajo Nation)  
 Shawn Ray (Navajo Nation)  
 Wanda Jimmie (Navajo Nation)  
 William Alvarez (Lummi Nation)  
 Amber Guerra (Native Hawaiian)  
 Natanii Yazzie (Navajo Nation)  
 Rayne Anderson (Navajo Nation)  
 Susanna Basappa (Citizen Potawatomi Nation)

Kyle Smith (Navajo Nation)  
 Kristen Woody (Navajo Nation)  
 Hannah Selwyn (Navajo Nation)  
 Liyanna Lee (Sisseton Wahpeton Oyate)  
 Elizabeth Spencer (Pawnee Nation)  
 Breanna Thompson (Navajo Nation)  
 Sabrina De Jong (Hoopa Valley Tribe)  
 McKaleen Steen (Cherokee Nation)  
 Taylor Russell (Navajo Nation)  
 Christian Jimmie (Navajo Nation)  
 Marcie Vandever (Navajo Nation)  
 Royal Roan Eagle (Oglala Sioux Tribe)

## ASSIST SCHOLARS

Austin Allard (Turtle Mountain Chippewa)  
 Ronny Bazan Antequera  
 Jalel Ben Hmida  
 Grace Bulltail (Crow Tribe and a descendant of the Mandan, Hidatsa and Arikara Nation)  
 Alejandra Castellanos  
 Michael Charles (Navajo Nation)  
 Cherie DeVore (Navajo Nation)  
 Mohamed Elwakil  
 Lida Haghnegahdar  
 Sarah Jalal  
 Donna "Sweetie" Kuehu (Native Hawaiian)  
 Yan Li  
 Sandra Manosalvas-Kjono (Mohawk Nation)  
 Ashleigh McIntosh (Caddo Tribe)  
 Daniel Mejia  
 Hesam Moghaddam  
 Mariya Munir  
 Alejandro Najera-Acosta  
 Juan Ocampo  
 Carson Pete (Navajo Nation)  
 Canek Phillips (Purepecha)  
 Ivan Rajen  
 Javier Rubio-Herrero  
 Delbert Willie (Navajo Nation)  
 Michele Yatchmeneff (Agdaagux Tribe of King Cove and Native Village of False Pass)

# PATHWAY



## LIGHTING THE PATHWAY TO FACULTY CAREERS FOR NATIVES IN STEM PROGRAM

Supported by the National Science Foundation (NSF), the “Lighting the Pathway to Faculty Careers for Natives in STEM” (LTP) program was created to increase the representation of Native Americans in STEM faculty positions at colleges and universities across the country. The program has created an intergenerational community of undergraduate and graduate students, postdoctoral scholars, and junior and senior faculty members. In 2019, AISES received another five-year grant from the NSF to continue the LTP program. This will increase the number of scholars by 72 over five years, leading to 172 LTP Native STEM scholars.

### 2019 LIGHTING THE PATHWAY TO FACULTY CAREERS PHASE II

Wai Allen (Navajo Nation)  
R. Konane Bay (Native Hawaiian)  
Miranda Buckley (Cherokee Nation)  
Cherie DeVore (Navajo Nation)  
Phillip Hada (Delaware Tribe)  
Dawson Hollingsworth (Tlingit)  
Lara Jacobs (Muscogee (Creek) Nation)  
Jordan Jimmie (Navajo Nation)  
Brendan John (Seneca Nation of Indians)  
Ashleigh McIntosh (Caddo Tribe)  
Devan Massin (Aleut Community of St. Paul Island)  
Dominique Pablito (Zuni, Navajo, Comanche)  
Seafha Ramos (Yurok Tribe, Karuk Tribe)  
Samuel Smith III (Taos Pueblo)  
Krystal Tsosie (Navajo Nation)

### 2017-2018 LIGHTING THE PATHWAY TO FACULTY CAREERS PHASE I

Alissa Baker-Oglesbee (Cherokee Nation)  
Maryrose Barrios (Tule River Tribe)  
Joel Begay (Navajo Nation)  
Landon Charlo (Salish Kootenai)  
Kali Dale (Minnesota Chippewa)  
Lauren Dupuis (Kootenai)  
Kristina Gonzales (Navajo Nation)  
Daniel Henry (Turtle Mountain Chippewa)  
Samantha Hilborn (Laguna Pueblo)  
Lydia Jennings (Pascua Yaqui)  
Brandi Kamermans (Navajo Nation)  
Sierra Kafuman (Shinnecock Indian Nation)  
Melissa Naeimi (Muscogee (Creek) Nation)  
Esme Roddy (Sault Ste. Marie Chippewa)  
Tyler Rust (Oglala Lakota)  
Corbin Schuster (Yakama Nation)  
Olga Skinner (Village of Kwethluk)  
Lauren Smythe (Hydaburg Cooperative Association)  
Nizhoni Tallas (Navajo Nation)  
Jacob Walker-Swaney (Piqua Shawnee Tribe)

### 2016-2017 LIGHTING THE PATHWAY TO FACULTY CAREERS PHASE I

Sarah Aarons (Village of Unalakleet)  
Mark Berger (Oneida Nation of New York)  
Edward Chew (Tuscarora Nation)  
Alexander Cody (Kickapoo Tribe of Kansas)  
Lyle Dahlin (Native Hawaiian)  
Tammi Duncan (Navajo Nation)  
Maxwell Goldstein (Seminole Nation of Oklahoma)  
Danielle Guzman (Nez Perce Tribe)  
Joshua Lelemia Irvine (Native Hawaiian)  
Laurel James (Yakama Nation)  
Jordan Kennedy (Blackfeet Nation)  
Donna Kuehu (Native Hawaiian)  
Moses Leavens (Chippewa Cree)  
Lizzie Lightning (Ponca Tribe of Oklahoma)  
Benjamin Lilley (Eastern Band of Cherokee Indians)  
Michaela Long (Navajo Nation)  
Kevin McPherson (not available)  
Jenny Nakai (Navajo Nation)  
Cheyenne Nelson (Santa Ynez Band of Chumash Mission Indians)  
Talia Quandelacy (Zuni Tribe)  
Kyle Roessler (Salish Kootenai)  
Kenneth Swift Bird (Oglala Lakota)  
Jackie Taylor (Choctaw Nation)  
Sydney Thompson (Saint Regis Mohawk Tribe)  
Kayle Thunstrom (Minnesota Chippewa)  
Lani Tsinnajinnie (Navajo Nation)  
Tada Vargas (Cheyenne River Sioux)  
Noelani Villa (Kaw Nation)  
Clayton Wauneka (Navajo Nation)

### 2015-2016 LIGHTING THE PATHWAY TO FACULTY CAREERS PHASE I

Chad Aiginash (Red Lake Band of Chippewa)  
Shanadeen Begay (Navajo Nation)  
Johnny Buck (Yakama Nation)  
Katrina Claw (Navajo Nation)  
Jesse Gibson (Poarch Band of Creek Indians)  
Ciarra Greene (Nez Perce Tribe)  
Candice Guy (Delaware Tribe)  
Megan Kiedrowski (Sault Ste. Marie Chippewa)  
Naomi Lee (Seneca Nation of Indians)

Rebekah Lester (Osage Tribe)  
Kristen Lycett (Cow Creek Band of Umpqua Tribe)  
Phillip Medina IV (Huron Potawatomi)  
Jordan Oshiro (Native Hawaiian)  
Ulali Phillip (Navajo Nation)  
Caneke Phillips (P'urepecha)  
Dylan Suvlu (Arctic Slope Inupiat)  
Scott Tan (Blackfeet Nation)  
Henrietta Tsosie (Navajo Nation)  
Delbert Willie (Navajo Nation)

### 2014-2015 LIGHTING THE PATHWAY TO FACULTY CAREERS PHASE I

Angelita Bearquiver (Northern Cheyenne Tribe)  
Rene Begay (Navajo Nation)  
Rebecca Buckman (Hopi Tribe)  
Katherine Crocker (Kaw Nation)  
Megan Dunn (Cherokee Nation)  
Davin Etcitty (Jemez Pueblo, Navajo Nation)  
Amber Eule-Nashoba (Choctaw Nation)  
Bradley Ganoe (Anishinaabe)  
Jennifer Remme (Fort Peck Assiniboine Sioux)  
Ariel Helms (Cherokee Nation)  
Kelsea Kanohokuahiwi Hosoda (Native Hawaiian)  
Carrie Joseph (Hopi Tribe)  
Nicole Kenote (Menominee Indian Tribe)  
Sandra Kjono (Mohawk)  
Janie Locklear (Lumbee Tribe of North Carolina)  
Jacinda Mainord (Village of Selawik, Village of White Mountain)  
Jack Martin (Navajo Nation)  
Alexander McGirt (Lumbee Tribe of North Carolina)  
Na'ta'ne Miles (Comanche Nation, Oglala Sioux, Salt River Pima Maricopa)  
Jocelyn Painter (Winnebago Tribe of Nebraska)  
Keith Parker (Yurok Tribe)  
Anthony Barela Nystrom (Chickasaw Nation)  
Mackenzie Pearson (Menominee Indian Tribe)  
Jesse Peltier (Turtle Mountain Chippewa)  
Darryl Reano (Acoma Pueblo, Santo Domingo Pueblo)  
Biidaaban Reinhardt (Sault Ste. Marie Chippewa)  
Joshua Thomas (Seneca Nation of Indians)  
Ranalda Tsosie (Navajo Nation)  
Crystal Tulley-Cordova (Navajo Nation)



# EVENTS



## NATIONAL CONFERENCE

The biggest event of the year is the AISES National Conference where the AISES family gathers to mark traditions, host ceremonies and celebrations, attend breakout sessions and networking events, and participate in Indian Country's largest College and Career Fair. AISES develops a comprehensive program for industry experts, partners, and attendees alike to learn from each other, build stronger relationships and partnerships, and together find ways to adapt to the changing STEM landscape.

Operating since 1978, the national conference is an unparalleled opportunity to connect companies with over 2,000 students, leaders and experts to discuss the current state of Indigenous STEM, determine priorities for improvement, broaden the disciplines and professions in which Indigenous people participate in STEM, increase research, access and outcomes in STEM, rally diversity, equity, and inclusion in companies, and engage in a wide range of strategies that involves the Indigenous communities and their perspectives in STEM education and careers.

The 2019 AISES National Conference was held October 10-12 at the Wisconsin Center in Milwaukee.

## Conference Attendance

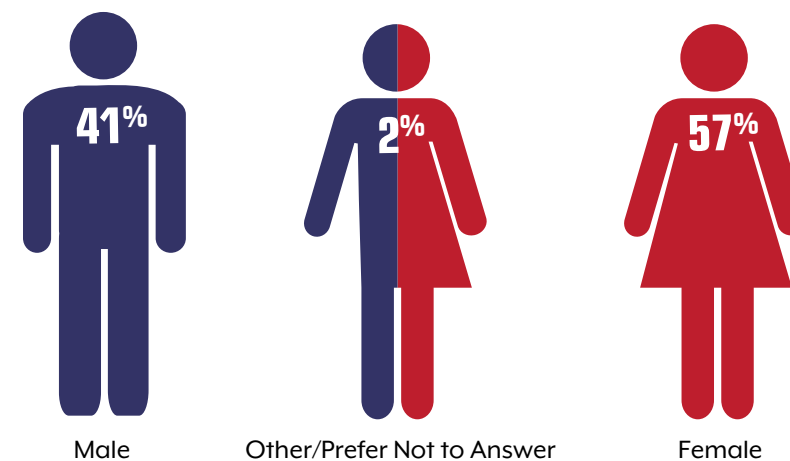
Registration Type	2019
<b>Professionals</b>	478
<b>College Students</b>	518
<b>HS Students &amp; Chaperones</b>	277
<b>Exhibitors &amp; Sponsors</b>	633
<b>Other</b>	10
<b>Total</b>	1916

## Attendee Satisfaction

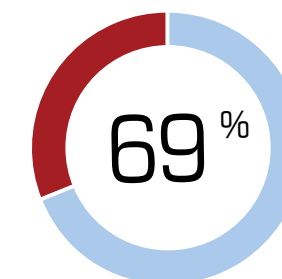
In a post-conference survey attendees were asked to rate their overall conference experience on a scale of 1 to 5. The average response was 4.8.



## Participant Gender



## Participant Race



\*American Indian, Alaska Native, First Nation, Native Hawaiian and Pacific Islander

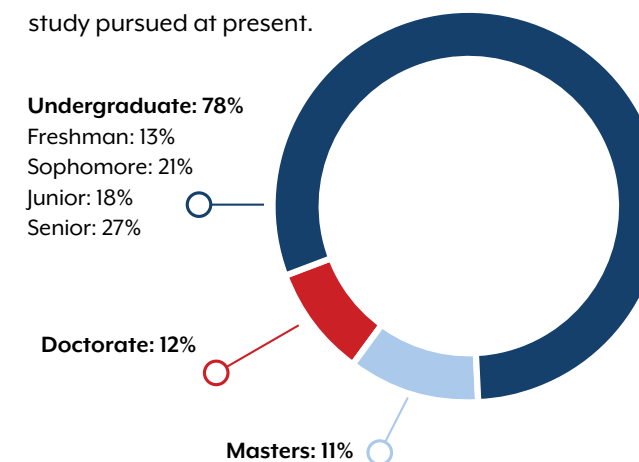
## Sessions

Total number of sessions delivered: 104

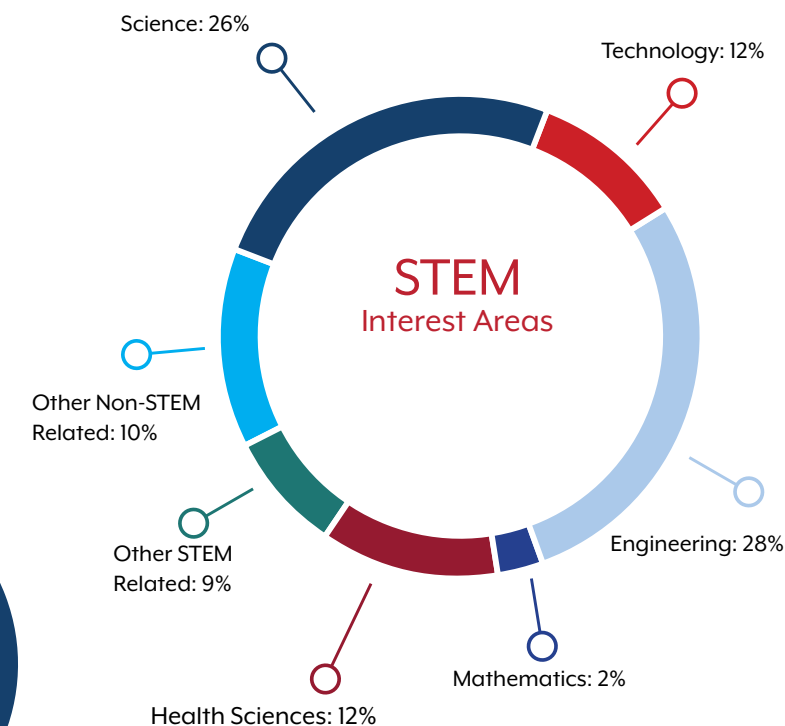
## College Students

College student attendees were asked to indicate their level of study pursued at present.

**Undergraduate: 78%**  
 Freshman: 13%  
 Sophomore: 21%  
 Junior: 18%  
 Senior: 27%



## STEM Interest Areas





# EXHIBITORS

## AISES LEADERSHIP SUMMIT

We believe establishing a leadership pipeline is fundamental to developing today's best science, technology, engineering, and mathematics (STEM) talent. Students from high school through postdoctoral as well as emerging and mature professionals, value our Leadership Summit as an opportunity to acquire the skills to be confident leaders. Much smaller than the National Conference, the two-day Summit is held in the spring and is filled with interactive workshops, meetings, sessions, plenaries and tours – along with built-in time to relax, socialize and have fun. The AISES Leadership Summit delivers on strategies that equip Native STEM students, STEM professionals, and Indigenous leaders with learning, networking, and career development opportunities. Over 250 participants made the AISES Leadership Summit a great success on March 14-16, 2019 at Cherokee, North Carolina.

## REGIONAL CONFERENCES

Every spring, AISES College and Professional Chapters hold Regional Conferences in the U.S. and Canada to champion each other and expand their knowledge and skills through a wide variety of workshops and sessions. The Regional Conferences generate enthusiasm for STEM education and careers via conference features like mini-career fairs, poster presentations, and engineering competitions.

### 2019 Regional Conferences

Region	Date	Location
1	March 22-23, 2019	University of Alaska Fairbanks
2	April 5-7, 2019	Stanford University
3	March 28-30, 2019	New Mexico Technical University
4	March 29-30, 2019	University of Oklahoma
5	March 1-3, 2019	University of South Dakota
6	March 23, 2019	University at Buffalo
7	March 15, 2019	AISES Leadership Summit, Cherokee, NC
.caISES	March 1-3, 2019	McGill University, Montréal, Canada

## CANADIAN NATIONAL GATHERING

The Canadian Indigenous Science and Engineering Society (.caISES) has partnered with AISES to become the official Canadian Region of AISES. The .caISES gives Canadian Indigenous STEM students and professional the opportunity to gather, connect, and create long-standing relationships within Canada through .caISES national gatherings, and across the continent at national and regional gatherings.

The second edition of the .caISES gathering brought together Indigenous STEM students and professionals in the vibrant city of Montréal, Canada. McGill University was the site of the national gathering where professionals, academics, and students from all over Canada met to hear about STEM education, share success stories, and mentor young talent.

## NATIONAL CONFERENCE EXHIBITORS

- |  |   |  |
|--|---|--|
| 3M   | CIRES   | Harvard T.H. Chan School of Public Health                              |
| A.T. Still University  | College of Engineering University of Wisconsin-Madison    | Harvard University Native American Program                             |
| Accenture  | College of Menominee Nation                               | Haskell Environmental Research Studies                                 |
| Advancing Agricultural Science Opportunities for Native Americans (AASONA)             | Colorado School of Mines                                  | Higher Education Recruitment Consortium- HERC                          |
| Air Force Civilian Service   | Columbia University in the City of New York               | IBM  |
| Airbnb   | Columbia Vagelos College of Physicians and Surgeons       | Idaho National Laboratory  |
| AISES  | Comcast NBCUniversal                                      | Indian Affairs Division of Energy and Mineral Development              |
| Alfred P. Sloan Foundation   | Cornell Engineering                                       | Indian Health Service - Division of Sanitation Facilities Construction |
| Amazon   | Cronkite School   | Indiana University   |
| American Chemical Society  | Dartmouth School of Graduate and Advanced Studies         | Indigenous Education, Inc. Home of the Cobell Scholarship              |
| American Indian Graduate Center  | Defense Contract Management Agency (DCMA)                 | Intel Corporation  |
| American Physical Therapy Association  | Department of Energy                                      | Intertribal Timber Council   |
| AMERIND Risk   | Department of Energy/Legacy Management                    | Jack Kent Cooke Foundation   |
| Ames Laboratory - Iowa State University  | Department of Nutritional Sciences                        | Johns Hopkins Bloomberg School of Public Health                        |
| AnitaB.org   | Des Moines University                                     | Joint Institute for the Study of the Atmosphere and Ocean (JISAO)      |
| Argonne National Laboratory  | Double Rafter   | Jopwell  |
| Arizona State University   | DuPont  | Kettering University   |
| Army Educational Outreach Program (AEOP)   | Eastern Band of Cherokee Indians                          | Koniag Government Services   |
| Association of American Medical Colleges   | Elizabeth City State University                           | Langdale Center for Forest Business, University of Georgia             |
| Association of American Medical Colleges - Summer Health Professions Education Program | Emory University, Laney Graduate School                   | Lawrence Livermore National Laboratory                                 |
| AT&T   | ExxonMobil  | Leidos   |
| Be An Actuary  | Facebook  | Los Alamos National Laboratory   |
| Berkeley Lab   | Federal Bureau of Investigation                           | Massachusetts Institute of Technology                                  |
| Binghamton University-SUNY, Thomas J. Watson School of Engineering and Applied Science | Federal Highway Administration, Office of Human Resources | Mayo Clinic  |
| BNSF Railway   | Fermi National Accelerator Laboratory                     | McGill University  |
| Bonneville Power Administration  | Fiat Chrysler Automobiles                                 | Medical College of Wisconsin   |
| Boston Scientific  | Forest County Potawatomi Community                        | MEDTRONIC MITG   |
| Canadian Indigenous Advisory Council to AISES  | Fred Hutchinson Cancer Research Center                    | Merck & Co.  |
| Carnegie Mellon University College of Engineering                                      | General Electric Aviation                                 | Michigan State University  |
| Carollo Engineers, Inc.  | General Motors  | Microsoft  |
| Cherokee Nation Businesses   | Georgia Tech Research Institute (GTRI)                    | Morehouse College  |
| Cherokee Nation Human Resources  | Geoscience Convergence Zone                               | NAFOA  |
| Chevron Corporation  | Gila River Indian Community                               | NASA - National Aeronautics and Space Administration                   |
| CIA  | Google  | NASA Jet Propulsion Laboratory   |
|  | Grand Canyon University                                   |  |
|  | Greenfire Management Services                             |  |





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 National Institute of Standards and Technology  
 National Institutes of Health  
 National Institutes of Health/Office of Intramural Training & Education  
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 Navajo Nation Division of Natural Resources  
 Tule River Indian Tribe of California

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 Tribal Alliance of Sovereign Indian Nations

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Eastern Band of Cherokee Indians  
 Oneida Nation  
 Stockbridge-Munsee Community

## ADDITIONAL CONFERENCE SPONSORS

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3M

### Pre-College Student Research

CIRES

### College Student Research

AASONA (Keepseagle)  
 Alfred P. Sloan Foundation

### Graduate Student Research

Alfred P. Sloan Foundation

### Student Research Abstract Booklet

NOAA

### Student Awards Booklet

Stantec

### Student Orientation

Google

### Pre-College Session Track

The Boeing Company

### College Session Track

Jack Kent Cooke Foundation

### STEM Activity Day

The Boeing Company

### Hackathon

Chevron

### hackAISES

Wells Fargo Bank

### College and Career Fair Lunch

Oracle

### Student Awards Luncheon

Air Force Civilian Service  
National Security Agency  
The Boeing Company

### Professional Members Mixer

The Boeing Company

### Wellness Activity

Merck

### Social Media Booth

AT&T

### WiFi and Mobile App

Comcast

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Armed Forces and Intelligence (National Security Agency)  
Chemistry (American Chemical Society)  
Energy (U.S. Department of Energy)  
Health and Medical Science (University of Wisconsin Health)  
Natural Resources, Food and Agriculture (USDA Natural Resource Conservation Service)  
Manufacturing (3M)

### Company Suites

Chevron  
Facebook  
IBM  
Intel  
Raytheon  
NextEra Energy, Inc.  
The Boeing Company

### Coffee Break

Double Rafter

### Water Bottles

AnitaB.org

### Travel Scholarships

Chevron  
Google  
Greenfire Management  
Intel  
Mayo Clinic  
National Grid  
Salesforce.com  
USDA Natural Resource Conservation Service

### Community Partners

Collins Aerospace  
Marquette University

### Media Partners

DiversityComm Inc.  
*Winds of Change Magazine*

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#### Aventurine

America's Navy  
Owle Construction LLC  
Sequoyah Fund  
University of North Carolina Asheville

### Travel Scholarships

GM  
USDA - Natural Resources Conservation Service

### Community Partner

DiversityComm, Inc.  
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Cherokee Boys Club

### Tribal Nations Advisory Council Reception Sponsor

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Carollo Engineers  
Hatch Engineering  
Kewenvoyouma Law, PLLC  
Quarles & Brady LLP  
SMA  
SunVest Energy  
Velocity Agency

### SPRK-ing Interest in STEM+CS among Students of EBCI

Cherokee Preservation Foundation  
Powers Fund

### Energy Challenge

Department of Interior - Office of Energy and Economic Development - Division of Energy and Mineral Development

### Intel Next Generation of Native American Coders: Applied CS Principles and Career Readiness Course

Intel

### National American Indian Science and Engineering Fair

Oklahoma State University  
Intel  
USDA Natural Resources Conservation Service  
Phillips 66

### Advancing Agricultural Science Opportunities for Native Americans

Keepseagle Fund

### A.T. Anderson Memorial Funders

Chahta Endowment  
Everett F. Chavez Memorial Fund  
Helen Roberti Charitable Trust  
Horace Axtell Memorial Fund  
Leslie Qöyawayma Memorial Fund  
Lockheed Martin  
Northrup Grumman  
Stantec Consulting  
The Boeing Company

### SPRK-ing Interest in STEM + Computer Science

Motorola Solutions Foundation  
General Motors  
Santa Fe Natural Tobacco Company Foundation  
Shakopee Mdewakaton Sioux Community  
Meyer Memorial Trust

### Native Financial Cents: Supporting Financial Capability for Native Americans Program

Wells Fargo Foundation

### AISES and the Coalition of Southwestern Oklahoma Tribes Economic Development Partnership

Administration of Native Americans Social and Economic Development Strategies (ANA SEDS)

### Expanding Computer Science for Native Girls

Kapor Center and Reboot Representation

### AISES Computing and Engineering Summer (ACES) Camp

Intel

### STEM College and Career Readiness Guide

Northwest Area Foundation  
Meyer Memorial Trust

*Thank you to our sponsors!*

## AISES PROFESSIONAL AWARDS

Significant contributions to the STEM workplace are the focus of the AISES Professional Awards, which are bestowed in several categories. Many amazing people are nominated by our members, and the winners are selected by a committee representing corporate, academic, government, foundation, and tribal AISES partners.

Join us in congratulating these accomplished professionals and mentors. We thank all of our members who participated in the nomination process, our awards selection panel, and our host academic institution, Northwestern University.

### Professional of the Year

**Dr. Wendy F. Smythe**

AAAS Science and Technology Policy Fellow, hosted by the National Science Foundation

### Most Promising Engineer or Scientist

**Dylan Moriarty**

Sandia National Laboratories

### Technical Excellence

**Dr. Otakuye Conroy-Ben**

Arizona State University

### Blazing Flame

**Sheila Lopez**

Intel Corporation

### Indigenous Excellence

**Yona Wade**

Cherokee Central Schools



**Professional of the Year** – The AISES Professional of the Year Award is presented for overall leadership and technical achievement. This individual is selected from among the top candidates submitted in all categories; therefore, individual nominations are not accepted for this award.

**Blazing Flame Award** – The Blazing Flame Award is presented to an individual who blazes a path for Indigenous people in STEM careers. This award recognizes individuals with 10 or more years of professional experience with significant accomplishments in advancing STEM education and careers.

**Indigenous Excellence Award** – New in 2019, this award acknowledges an individual who has done substantial work to advance programs and opportunities for Indigenous students and professionals in STEM education and careers. A professional with 10 or more years of experience working within his/her tribal/Indigenous community and/or in support of American Indian/Indigenous people at the national level is honored.

**Most Promising Engineer or Scientist Award** – The Most Promising Engineer or Scientist nominee must be a professional engineer or scientist with less than five years' experience after earning his/her degree. The candidate's early technical contributions should already indicate a promising career.

**Technical Excellence Award** – The Technical Excellence nominee must have made a significant contribution to science, engineering or technology by having designed, developed, managed or assisted in the development of a product, service, system or intellectual property.

## PARTNER SERVICE AWARDS

The AISES staff selects the Partner Service Award winners to honor those who have been exceptionally supportive of the organization. Strategic partners are enormously important to the AISES mission because they enhance and promote STEM education and careers, and foster the continued growth of the organization at a pace that would be impossible to achieve without them. Here are the 2019 recipients of the Partner Service Awards.

Tribal Partner Service Award  
**Eastern Band of Cherokee Indians**

Foundation Partner Service Award  
**Matt Morton, Meyer Memorial Trust**

Educator Partner Service Award  
**Nate Raynor, Mescalero Apache High School**

Corporate Partner Service Award  
**Rhonda James, Intel Corporation**

Government Partner Service Award  
**Duane Matt, Indian Affairs – Division of Energy and Mineral Development**

Nonprofit Partner Service Award  
**Frieda McAlear, Kapor Center**

## NATIONAL AMERICAN INDIAN SCIENCE & ENGINEERING FAIR (NAISEF)

**Grand Award Winner for Science & the Bickford Family Award for Innovation**  
Chaga mushroom extract as an inhibitor of HNSCC cell migration vs. Chemotherapy/Radiation  
**Victoria Dushane** (Mescalero Apache and Tlingit)

**Grand Award Winner for Engineering**  
An Improved, Inexpensive, Offline, Closed-Loop Insulin Pump for Automatic Management of Types 1 and 2 Diabetes  
**Anna Quinlan** (Cherokee)

**Junior Division First place**  
Superior Threads: Sun Safe Fabrics  
**Emma Brouns**

**Junior Division Second place (tie)**  
Fire, Ice, Power!

**Hayden Faddis** (Cherokee)

Synesthesia: The World's Most Wanted Brain Disorder  
**Ava Cummings** (Lumbee and Coharie)  
**Olivia Mir**

**The Native Heritage Award**  
Bugs Be Gone  
**Kellon Collington** (Cherokee)

## ENERGY CHALLENGE WINNERS

An Innovative Approach to Building a Zero-Emission Observation Buoy Utilizing Reversible Hydrogen Fuel Cells as Backup Power  
**Anna Grondolsky** (Native Hawaiian)

Developing a Hydropower Generator for Fishpond Mākāhā (Sluice Gates)  
**Joshua Parker** (Native Hawaiian)

Optimizing Graphene Synthesis for Supercapacitors to Mediate Hawaii's Solar Power Overload  
**Jake Keli'ikupono Uyechi** (Native Hawaiian)



## ELY S. PARKER AWARD

The Ely S. Parker Award is AISES' highest professional honor which recognizes engineers, scientists, and educators who have provided exemplary service to the American Indian/Indigenous community. The award is named for a distinguished 19-century Seneca leader whose multi-faceted career furthered collaboration, diversity, and inclusion across a variety of sectors.

The 2019 Ely S. Parker award was given to Dr. Roger Dube. Dr. Dube is a professor emeritus and former Assistant Dean for Undergraduate Research and Interdisciplinary Programs at the Rochester Institute of Technology. With 43 years of experience in teaching and educating others, Dr. Dube is an author, entrepreneur, mentor, and researcher who holds 16 patents. He is an AISES Sequoyah Fellow.

### History of AISES Ely S. Parker Award Winners

1983	A.T. Anderson ( <i>Seneca</i> ), Engineering	2001	Dr. Carolyn Elgin ( <i>Choctaw</i> ), Educator
1984	Phil Stevens ( <i>Oglala Sioux</i> ), Engineering	2002	Dr. Judith Kaur ( <i>Choctaw/Cherokee</i> ), Medicine
1985	Mary G. Ross ( <i>Cherokee</i> ), Mathematics/ Engineering	2003	Carol Metcalf Gardipe ( <i>Penobscot</i> ), Geology
1986	Al Qöyawayma ( <i>Hopi</i> ), Engineering	2004	Jerry Elliott ( <i>Osage/Cherokee</i> ), Physics
1987	Phil Lane Sr. ( <i>Yankton Sioux</i> ), Engineering	2005	George Thomas ( <i>Cherokee</i> ), Engineering
1988	Don Ridley ( <i>Shoshone</i> ), Engineering	2006	Not Awarded
1989	Dr. Louis Steele ( <i>Assiniboine</i> ), Medicine	2007	Governor Joe A. Garcia ( <i>Ohkay Owingeh</i> ), Engineering
1990	Dr. George Blue Spruce ( <i>Laguna/Ohkay Owingeh</i> ), Dentist	2008	Norbert S. Hill, Jr. ( <i>Oneida</i> ), Educator
1991	Not Awarded	2009	Sandra Begay ( <i>Navajo</i> ), Engineering
1992	Dr. Fred Begay ( <i>Navajo</i> ), Physics	2010	Dr. Robert Whitman ( <i>Navajo</i> ), Engineering
1993	Dr. Taylor Mackenzie ( <i>Navajo</i> ), Medicine	2011	Everett Chavez ( <i>Kewa Pueblo</i> ), Educator
1994	Dwight Gourneau ( <i>Chippewa</i> ), Engineering/ Physics	2012	Dr. Henrietta Mann ( <i>Southern Cheyenne</i> ), Educator
1995	Dr. Cliff Poodry ( <i>Seneca</i> ), Biology	2013	Bessie Newman Spicer ( <i>Navajo</i> ), Nursing
1996	Dr. Fred Cooper ( <i>Shoalwater Bay</i> ), Engineering	2014	Dr. Jason Younker ( <i>Coquille</i> ), Educator
1997	Dr. Jane Mt. Pleasant ( <i>Tuscarora</i> ), Agronomy/Soil Science	2015	Dr. Bret Benally Thompson ( <i>White Earth Band of Ojibwe</i> ), Medicine
1998	Dick French ( <i>Yakama</i> ), Forestry	2016	Dr. Robin Wall Kimmerer ( <i>Citizen Potawatomi Nation</i> ), Educator
1999	Dr. Robert Megginson ( <i>Lakota</i> ), Mathematics	2017	Dr. Patricia Nez Henderson ( <i>Navajo</i> ), Medicine
2000	Dr. Jim May ( <i>Cherokee</i> ), Engineering/Business/ Library Science	2018	Cheryl McClellan ( <i>Sac and Fox</i> ), Engineering
		2019	Dr. Roger Dube ( <i>Mohawk Turtle Clan</i> ), Physics

## AISES RESEARCH AWARDS

In October 2019, AISES held its annual research competition with pre-college, undergraduate and graduate students. Oral and poster research presentations ran simultaneously during the College and Career Fair at the 2019 AISES National Conference. The research presentations are judged by STEM professionals, and winners were acknowledged during the Student Award Lunch.

AISES research competitions provide opportunities for a deeper understanding of a topic or idea. Other benefits include increasing confidence to speak and present in front of an audience, developing new knowledge and different perspectives on a topic, peer learning, and more. Below are the 2019 National Conference Poster Presentation Award winners.

### Pre-college Student Poster Presentations

First Place **Sky Harper** (*Navajo Nation*)  
 Second Place **Anna Grondolsky** (*Native Hawaiian*)  
 Third Place **Keona Hosteen** (*Navajo Nation*)  
 Third Place **Ka'eo Keumano** (*Native Hawaiian*)

### Undergraduate Student Poster Presentations

First Place **Dominique Pablito** (*Zuni Tribe, Navajo Nation, and Comanche Nation*)  
 Second Place **Lindsey Howe** (*Choctaw Nation*)  
 Third Place **Tawnjeræ Joe** (*Navajo Nation*)  
 Third Place **Kimberlee Blevins** (*Mandan, Hidatsa, and Arikara Nation*)

### Graduate Student Poster Presentations

First Place **Joel Grant** (*First Nations*)  
 Second Place **Anita Murdock** (*First Nations*)  
 Third Place **Ellis Brown** (*Osage Nation*)  
 Honorable Mention **Melissa Jacques** (*Navajo Nation*)



## CONVERSATIONS AND COLLABORATIONS

### 50K Coalition – 50,000 Diverse Engineers by 2025

AISES, along with the Society of Women Engineers, National Society of Black Engineers, and the Society of Professional Hispanic Engineers, comprise the Leadership Circle of the 50K Coalition whose mission is to increase the number of diverse engineering degree recipients to 50,000 by 2025. The Coalition received support from the National Science Foundation (NSF) INCLUDES Initiative to bring together universities, industry partners, and other professional societies working toward diversity and inclusion within engineering to join forces and pursue areas of synergy, explore lessons learned, and significantly increase the number of diverse engineering graduates. In addition to the 50K Coalition, AISES has partnered with other minority serving engineering professional societies on another NSF INCLUDES-funded project to increase the diversity of the engineering professoriate by providing professional development to graduate students, post-doctoral fellows, and early-career faculty in all engineering fields.

## Addressing the Underrepresentation of Women of Color in Tech supported by the National Science Foundation

In 2019, AISES CEO, Sarah EchoHawk, was appointed an ad hoc committee of the National Academies of Sciences, Engineering, and Medicine that is examining strategies to improve representation of women of color in technology and issue a consensus report informed by a series of four regional workshops. The committee is working to: (1) Identify the factors that contribute to the underrepresentation of women of color in technology (i.e. computer science (CS), computer and information science and support services (CIS), information technology (IT), and engineering); (2) Understand and articulate concrete steps that academic institutions, employers, and individuals can take to have a positive impact on the retention, recruitment, and advancement of women of color in tech; (3) Build a community of practice devoted to addressing this important national issue and raising awareness; and (4) Empower the many stakeholders, including academic institutions, employers, policymakers, federal agencies, and individuals who care deeply about this issue with evidence-based practices for improving equity and diversity in technology. Based on the content of four regional workshops and separate data collection and analysis, the committee will issue a consensus report that (a) identifies the factors contributing to the underrepresentation of women of color in tech and (b) provides recommendations for concrete steps that academic institutions, employers, and individuals can take to have a positive impact on the recruitment, retention, and advancement of women of color in this area.

## Comcast/NBC Universal Public Service Announcements

Since 2017, the Comcast Foundation has provided valuable in airtime to broadcast two Public Service Announcements (PSAs) about AISES. The PSAs are designed to convey how, through our work at AISES, intergenerational traditional Native American cultural knowledge is woven together with new ideas to generate innovative technology and promote ideas and people that creates a better world for everyone. In 2019, the PSAs ran in multiple markets on multiple channels and was valued at over \$2 million. The PSA videos can be viewed on the AISES YouTube channel along with numerous other videos drawing attention to our work.

## Convening on Computer Science Research Infrastructure for Native-Serving Institutions supported by the National Science Foundation

Given the underrepresentation of Native students, professionals, and faculty in the field of computer science (CS), AISES believes now is a critical time to focus on strengthening CS research infrastructure of Native-serving institutions to move the needle on this broadening participation challenge. With funding from the National Science Foundation, AISES hosted the Convening on Computer Science Research Infrastructure for Native-Serving Institutions, gathering faculty from a diverse set of Native-serving institutions to understand the issues they face in conducting CS research, securing funding, and engaging Native students in CS research.



## Expanding Computer Science for Native American Girls

In computer science education and degree completion, Native American students and girls are significantly underrepresented among students taking Advanced Placement Computer Science (AP CS) exams and completing computing degrees, which are critical precursors to entering the rapidly growing and high-paying computing occupations. To address educational and economic disparities among Native American communities and youth, AISES and the Women of Color in Computing Collaborative, with funding from Reboot Representation, will build upon existing culturally relevant project-based CS courses with a one-year plan to develop robust curricula for a three-course CS sequence for Native American serving schools. This project will increase the number of Native American students participating in AP CS courses through (1) Teacher Professional Development, (2) Curriculum Development, and (3) Engagement and Outreach to Students and Communities. To reduce inequality and improve outcomes for Native American students and families, this intervention will be led by Native American women and will center on the leadership and values of Native American communities who participate in all aspects of the program.

## National Native American Scholarship Providers

In 2017, AISES, along with the American Indian Graduate Center (AIGC), the American Indian College Fund, and Indigenous Education, Inc. (the Cobell Scholarship Fund), as the largest National Native Scholarship Providers in the Nation, formed this group to work collaboratively on policy, advocacy, data collection, and best practices in serving Native American students in higher education. In 2019, the group continued to work together with a focus on gathering and sharing data on Native American students. The group applied for and received a grant to support a shared data project in 2019. Additionally, the group has a large grant proposal pending to support another shared data project to begin in 2020.

## Native American Women and Two-Spirit Individuals in Computing Higher Education: A Photo Elicitation Study of Persistence (NAWC2)

With funding from the Women of Color in Computing Collaborative, AISES is working with TERC to conduct an exploratory research study that focuses exclusively on Native women and two-spirit individuals' experiences in computing higher education. The project aims to understand the current national landscape data and trends in the statistics and research for Native American women and two-spirit individuals in computing and STEM education, as well as to identify gaps in the current knowledge base. The co-PIs will use the qualitative methodology of photo elicitation to address gaps in the literature and build upon existing knowledge related to unique barriers facing Native American women and factors that have influenced and supported Native American women and two-spirit individuals' persistence in computing higher education.

## Native Americans in Philanthropy

The mission of the Native Americans in Philanthropy is to promote equitable and effective philanthropy in Native communities. Historically, Native Americans in Philanthropy has supported flagship program areas – educating philanthropy, enhancing Native nonprofit leadership, and investing in data and research – to drive philanthropic investments to achieve this vision. Native Americans in Philanthropy also supports advocacy and movement building for positive and long-term impact in Native communities. AISES CEO, Sarah EchoHawk served as vice chair of the Board of Directors in 2019. As a nonprofit organization, AISES directly benefits from this collaboration.



## Native Ways Federation

The Native Ways Federation is a group of national, Native-led nonprofit organizations who joined together to increase the visibility and advocacy of Native organizations through a philanthropic lens. The NWF is comprised of the following members: American Indian College Fund, American Indian Science and Engineering Society, Association on American Indian Affairs, First Nations Development Institute, National Indian Child Welfare Association, Native American Rights Fund, and Running Strong for American Indian Youth. Established in 2006, NWF's mission is to: 1) strengthen the circle of giving by uniting Native organizations to raise awareness and support for communities we serve; 2) better serve Native communities by becoming more effective Native nonprofit organizations; and 3) ensure that nonprofit organizations working on behalf of Native communities observe the highest levels of ethical standards and fiscal responsibility. In 2019, AISES CEO, Sarah EchoHawk, served as the chair of the organization's board of directors.

## Population Council – Indigenous Adolescent Girls' Empowerment Network (IMAGEN) supported by the Population Council

AISES was one of the founding members of IMAGEN and is now working to find funding support to pilot our newly developed girl-centered STEM programming in both urban and reservation settings. IMAGEN seeks to equip Native-serving organizations with tools to reach and empower adolescent Native American girls through programs that are intentionally designed for girls instead of merely for young people more broadly.

## STEM & Business Initiatives

Building upon the Growing Native STEM Businesses in the West (GNSBW) cohort-model program, funded by the Minority Business Development Agency (MBDA), AISES will further develop its programming to increase the number of STEM businesses owned by American Indian, Alaska Native, and/or Native Hawaiian professionals or college students. With funding from Wells Fargo, AISES is now offering mini grants to members of the GNSBW cohort along with continued professional and business development webinars and mentorship. AISES continues to highlight STEM and Business sessions at the AISES National Conference. AISES is also adapting its STEM & Business workshop series developed for the GNSBW program to meet the needs of Southwestern Oklahoma tribal communities as part of the newly awarded ANA SEDS grant.

## URU – Changing Face of STEM

AISES first collaborated with URU in 2016 and continued its partnership in 2019. URU - Changing the Face of STEM seeks to move the needle on a complex and devastating social problem: the shortage of STEM opportunities for women and other marginalized students. Changing the Face of STEM is about strengthening collaborations. The strategy is to shift the paradigm in STEM to design new approaches to increase diversity and inclusion by producing media and live events created to ignite immediate actions to ensure future equity. National education and engagement initiatives offers a series of intensive hands on workshops and customized programs. The curriculum draws content and inspiration from leaders in STEM fields with the goal to change the mindset of children from marginalized communities and their parents so that they can envision the wide-open possibilities for themselves.



## TRIBAL NATIONS

### American Indian/Alaska Native College Affordability and TCU Sustainability

In collaboration with the other national Native Scholarship providers, AISES is engaged in a research project designed to better understand two critical areas in relation to American Indian and Alaska (AIAN) Native access to and success in higher education. The project explores college affordability among current and former AIAN college students, graduates, and non-completers attending both Tribal Colleges and Universities and non-Tribal Colleges and Universities and TCU sustainability, which includes the development of high-quality credentials at Tribal Colleges and Universities, funding and student access and completion.

### Cheyenne River Sioux Tribe

In 2016, AISES received a four-year Native Youth and Culture Project grant from the Department of Education totaling almost \$700,000 to work with Cheyenne-Eagle Butte (C-EB) Schools and the Cheyenne River Sioux Tribe (CRST) to address barriers to college and career readiness, specifically in the fields of STEM, among American Indian students living in South Dakota. Through this project, AISES is working to increase interest and engagement in STEM subjects among students of all ages, build the capacity of C-EB schools to support students in STEM, and generate CRST parent and community support of and engagement in STEM studies and careers, particularly in CRST youth. Improving STEM education by introducing novel and culturally relevant curriculum and programs and providing C-EB students with opportunities to grow and flourish in new environments is the core mission for this collaborative project. In 2018, AISES was awarded another NYCP grant to expand this program model to the other schools on the CRST reservation.

### Eastern Band of Cherokee Indians

With generous funding from the Cherokee Preservation Foundation of the Eastern Band of Cherokee Indians (EBCI), AISES hosted its Leadership Summit in Cherokee, North Carolina, and continued to build upon two years of programming implementing the SPRK-ing Interest in Computer Science program at Cherokee Central Schools (CCS). Most recently, AISES is working to develop curriculum and collaborate with teachers to ensure computer science and 21<sup>st</sup> century skills are integrated and used at CCS to further the economic development of EBCI by creating a future-ready workforce.

### Southwestern Oklahoma Tribes

AISES in partnership with Comanche Nation, Kiowa Tribe, and Wichita and Affiliated Tribes were awarded an Administration of Native Americans Social and Economic Development Strategies (ANA SEDS) project. The AISES and the Coalition of SW OK Tribes Economic Development Partnership project is a multi-tiered Economic Development project focused on Asset Building, Career Pathways, and Entrepreneurship. AISES and its tribal partners will collaborate on the development and implementation of programs in three focus areas—Asset Building, Career Pathways, and Entrepreneurship—to meet the economic development needs of the tribal communities of southwestern Oklahoma. The partnership identified these three economic development programmatic components based on the current community condition including disparities in income, employment, educational attainment, money management, and businesses owned and operated by tribal citizens.

# WINDS OF CHANGE

Through a combination of print and digital publishing, *Winds of Change* magazine consistently delivers content designed to engage every part of the growing AISES family. Students from pre-college through post-doc, aspiring and mature professionals, retirees, and elders – as well as our sponsors, partners, and friends – rely on *Winds of Change* as a multifaceted resource.

Each issue includes timely feature articles along with a welcome letter from the CEO, news of the organization and its members in AISES Notebook, inspiring “role model” profiles in AISES People, news of opportunities in Career Builder and Paths in Education, a Partner Index, and a guest commentary on a topic of community interest in Last Word. In addition, readers can find selective advertising for products, services, and opportunities that serve a diverse STEM-focused constituency. Decisions on *Winds of Change* content are guided by the Editorial Advisory Council, comprised of members from all segments of the AISES family. The digital version of each issue’s content entails a robust social media presence and advertising that effectively targets focused demographics. The cover of each issue and the accompanying article are especially designed to engage younger readers and keep them engaged as they work toward a promising future in STEM.

Together these components reach a broad readership and forward the AISES mission with an inspiring message of how STEM endeavors can lead to a fulfilling and productive future. *Winds of Change* draws readers to AISES and promotes diversity in STEM, while inspiring them to overcome obstacles on their own STEM paths.



## AISES SEQUOYAH FELLOWS

Sequoyah Fellows invest in our future and accept a lifetime commitment to building connections and awareness as key philanthropic supporters who open doors, foster inclusiveness, and attract people to the AISES mission. We take great pride in our Sequoyah Fellow community that is approaching 1,500 persons.

Sequoyah Fellows span the U.S. and Canadian AISES community. They are scientists, tribal leaders, scholars, business leaders, retirees, educators, elders, and students who are dedicated to the advancement of Indigenous in STEM and encouraging the next generation of STEM leaders in the workplace.

The Fellows follow the lead of Sequoyah – a citizen of the Cherokee Nation – who developed the Cherokee syllabary in 1821. The Cherokee people quickly advanced in reading and writing abilities that sparked the ingenuity of a strong, resilient nation.

Being a Sequoyah Fellow can be a life-changing experience – and you too, can be a Sequoyah Fellow connecting with the 2019 inductees listed below.

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Many of the AISES core activities such as events, education, and programs developed to increase STEM awareness would not be possible without gifts from individual donors. These gifts have far-reaching and life-changing impact. We warmly thank all of our donors for your support and generosity.

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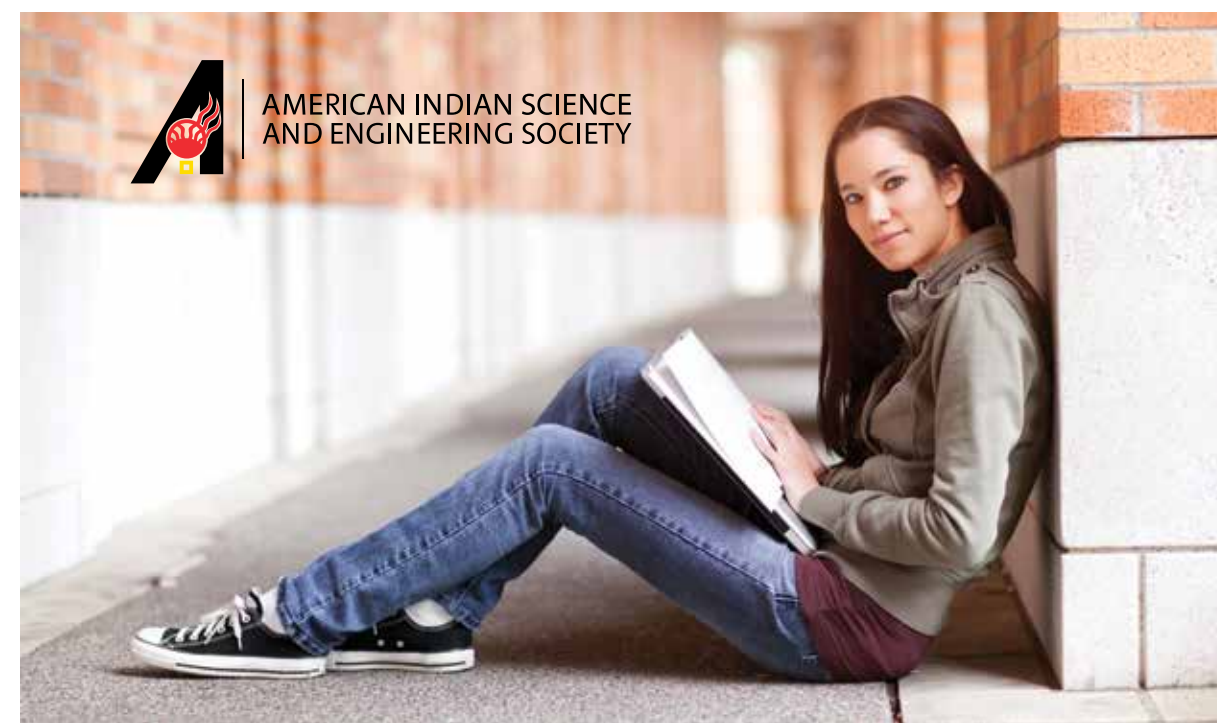
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The following outstanding organizations are recognized for their commitment to supporting the educational and professional development of American Indians, Alaska Natives, Native Hawaiians, First Nations, and other Indigenous peoples of North American in the STEM fields. AISES' Circle Partners diversify their involvement over at least two national events or programs. For more information on how to become a Circle Partner, please contact Kellie Jewett-Fernandez at [kjfernandez@aises.org](mailto:kjfernandez@aises.org).

## Full Circle of Support



## Circle of Support





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