

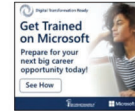
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About AISES

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Founded in 1977, growing the AISES membership above our current 5,900 individual members is key to achieving our mission. AISES supports 230 affiliated pre-college schools, 196 chartered college and university chapters, 3 tribal chapters, and 18 professional chapters in the U.S. and Canada. We promote the highest standards of education and professional excellence to widen the STEM workforce and grow sector support. We highlight the geographic, economic, and social aspects of STEM education and careers.

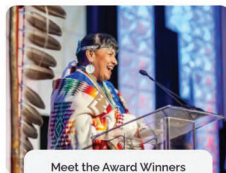
In addition to awarding nearly \$12 million and counting in academic scholarships, AISES offers internships, professional development and career resources, national and regional conferences, leadership development summits, and other STEM-focused programming.



Learn More About AISES

<p>» Inside AISES</p> <ul style="list-style-type: none"> Our Staff Our Board Council of Elders AISES Circle Partners 	<p>» About AISES</p> <ul style="list-style-type: none"> Our History Our Mission Annual Reports & Financials Contact Us 	<p>» Advisory Councils</p> <ul style="list-style-type: none"> Academic Advisory Council Canadian Indigenous Advisory Council Corporate Advisory Council Government Relations Council Professional Chapter Council Tribal Nations Advisory Council
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OUR STORIES



Meet the Award Winners

A part of every National Conference that focuses attention on the important work of AISES is our collective pause to recognize extraordinary accomplishments of our members. Congratulations to all the 2018 award winners!

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The Tribal Nations Advisory Council

One of two new advisory councils officially launched at the 2017 AISES National Conference, the Tribal Nations Advisory Council (TNAC) has an especially timely mission.

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Welcome to Our New 2019 Board Members

Every National Conference provides an opportunity to thank outgoing members of the AISES Board of Directors and to welcome incoming members. This year the boards chair, Dr. Twyla Baker, fulfilled her term. She and outgoing member Paul Kabotie...

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AISES is dedicated to supporting early, mid, and executive professionals in STEM fields through professional development, career opportunities, networking, and research support to mentors who support professionals 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.



Opportunities and Resources for Professionals

» **Membership and Programs**

- [Become a Member](#)
- [Sequoyah \(Lifetime\) Membership](#)
- [Membership Rules](#)
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» **Chapters**

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» **Opportunities**

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- [AISES Career Hub](#)
- [STEM and Business](#)
- [Professional of the Year Awards](#)
- [Ely S Parker Award](#)

OUR STORIES

Chapter Spotlight: AISES Phoenix Professional Chapter

There are many good reasons why one hundred Phoenix-based AISES members are active participants in the city's Professional Chapter. For many, the most important is the opportunity to make a difference for Natives in STEM. Chapter members mentor...

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Spotlighting Our Elders: The Council of Elders is an AISES mainstay

Meet the Council of Elders: Focusing on the mission. The Council of Elders Keeps AISES Grounded.

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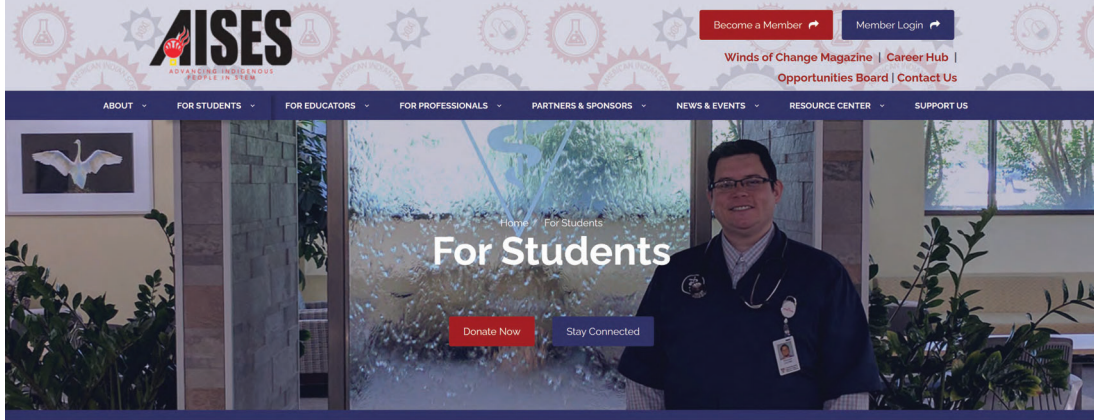
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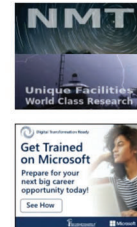
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In order to increase the numbers of Indigenous North Americans seeking degrees and careers in STEM fields, students must be started on the STEM pathway early. One of the biggest challenges in reaching this goal is ensuring that students, educators, and parents have access to information and resources related to STEM.

AISES administers many programs, services, and events for pre-college, undergraduate and graduate students designed to increase their access to college and support their success in preparation for careers in STEM fields. Native college students need professional mentorship and peer support in addition to scholarship support. Students are most successful when they have a network of other Native students, as well as professionals who can provide ongoing support while they are pursuing undergraduate and graduate studies. AISES provides exactly this critically needed support through its programming.



Opportunities and Resources for Students

<h3>Membership and Programs</h3> <ul style="list-style-type: none"> Become a Member Sequoyah (Lifetime) Membership Membership Rules Pre-College Programs College Programs 	<h3>Chapters</h3> <ul style="list-style-type: none"> Chapter Directory Student Representatives Starting a College Chapter College Chapter Reports College Chapter Awards Pre-College Affiliates CAISES – Canadian Region of AISES 	<h3>Opportunities</h3> <ul style="list-style-type: none"> Scholarships Internships AISES Career Hub National American Indian Science and Engineering Fair AISES Energy Challenge
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OUR STORIES



Jason Jackson Reed / Hoopa and Karuk / Humboldt State University / Fisheries Biology

I grew up on the Hoopa Indian Reservation in Northern California for the first part of my childhood, then I moved to Karuk territory, specifically the Katanin region, when I was in sixth grade. The town is very remote. Although the city's sign...

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Jada Johnson / Ojibwe / Cloquet Senior High School

Jada Johnson grew up in Cloquet, Minn., which she calls "a smaller town, but bigger than most." Even though she says there isn't a lot to do around Cloquet, Johnson, Ojibwe, stays busy with extracurricular activities. As an added bonus, she...

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Christopher Villarruel / Pit River (Ajumawi) and Atsuge (Hat Creek) / Humboldt State University / Forestry Hydrology

Former high school dropout, Christopher Villarruel is about to graduate with a BS in forest hydrology. He gives a lot of credit for his personal turnaround to the grandmother who raised him: "My grandmother, Lillian Lego, was a very strong woman..."

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Pre-College Programs

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The focus of the Pre-College Program is "Awareness and Retention." AISES engages in a multitude of programs and events that aim to ensure students are given exposure to first-rate science, technology, engineering, and math (STEM) programs and events. These experiences and opportunities support students in discovering, pursuing, and sustaining their interest in STEM as they prepare for their college careers and beyond.



The Pre-College Program supports early childhood through high school education and students in STEM studies through teacher training, regional science fairs, science fairs, leadership development, mentorship, scholarships, internships and other programming designed to support students and their families.

Circle of Support

**JACK KENT COOKE
FOUNDATION**

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PRE-COLLEGE PROGRAMS

Science and Engineering Fair	Energy Challenge	Robotics & Computer Science	Seedling Innovation
National Conference	Regional Conferences	Leadership Summit	Scholarships
NYCP	ANA SEDS	Financial Literacy	Indigenous Coders
Tribal Community-Based Programs			

National American Indian Science and Engineering Fair

The National American Indian Science and Engineering Fair (NAISEF) is an annual event for 5th to 12th grade students. The NAISEF is an affiliated fair with the Society for Science and the Public (SSP) affiliated science fair and 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 fair.

AISES awards prizes to senior and junior division winners. As well as, awards travel and registration stipends for the Senior Division Grand Award winners and their sponsors to attend the International Science and Engineering Fair.

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2022 NAISEF Winners

Senior Division Awards

NAISEF Winner and Regeneron Biotechnology Award Recipient

Desmon Boykin (Nanticoke)

The Effects of Casein Biopolymers in Combination with Activated Charcoal on the Filtration of Contaminated Well Water




As a member of the Nanticoke Tribe, I am acutely aware that my tribe, along with many other tribes throughout the continent, face a continuous problem due to contamination of their natural water resources. Much of the contamination comes from nearby industrial plants which often dump waste into the local water sources. The objective of this experiment is to enhance the performance of a charcoal filtration system using casein powder. It is hypothesized that, if powdered casein is used in conjunction with charcoal as a filter for well-water, then the levels of heavy metals and E. coli bacteria will be lower than they are in water only filtered with charcoal. This is presumed because casein contains four different types of coil strands: α 1-Casein, α 2-Casein, β -Casein, and κ -Casein. The properties of these strands include coils containing two non-polar hydrophobic ends with a polar and hydrophilic center; another containing two dipolar ends, a random coil containing positive s-ions, and a final coil strand that surrounds the other forms of casein to create the entire Casein Micelle. The purpose of this experiment is to observe the filtration properties of casein in conjunction with activated charcoal to remove nitrates and E. coli. It is presumed that the tightly woven properties of the κ -Casein may entrap any E. coli bacteria attempting to pass through. It is also presumed that the structural components of β -Casein containing positive ions may bind with the nitrates and other negative ions during filtration. Though the Casein-Activated Charcoal filter did not completely remove E. coli, the E. coli content was reduced by 4.2% by the end of filtration. In regard to Nitrates, Nitrites, Hydrogen Sulfide, Manganese, and Alkalinity, Casein was able to filter out these aforementioned contaminants with more efficiency than when compared to Activated Charcoal. This was determined through the use of a Well Water Testing Kit in PPM (parts per million).

National Geographic Society, Cultivating Empathy for the Earth Award Recipient



Anabash Nelson (Navajo) - "Mycelium Growth in Martian Soil Simulant"

Mycelium is the vegetative part of a fungus and is composed of thread-like filaments which web to create a network of roots that absorb, digest, and decomposes nutrients from its surrounding ecosystem. By using their natural digestive abilities, the enzymes certain mycelia produce can even degrade complex compounds into simpler byproducts, unraveling long chains of molecules into more easily digestible forms for other organisms. Able to grow most anywhere, the immense value of mycelium does not end there. In many ecosystems, it is the foundation, and its natural processes support most surrounding life. More specifically, mycelia releases minerals and other organic molecules found in dead organic matter back into the soil, recycles rare nutrients to be later redistributed, provides plants with which it has mycorrhizal relationships nutrients that are normally inaccessible to them, and allows for new entities/bodies to take the place of dead matter. In other words, remove mycelia from an environment and the ecosystem is no longer able to function. But what can be said about the inverse? If there is a previously uninhabitable environment where you successfully integrate mycelium, can life now be sustained? In order to answer this question, this experiment is aimed at attempting to sustain mycelium growth in a Martian dirt simulant with high CO₂ air content. Not only would this shed light on the true potential of mycelium, but also scratch the surface of Martian colonization and hint at solutions to successful human habitation.




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