

**U.S. Department of Education**  
Washington, D.C. 20202-5335



**APPLICATION FOR GRANTS  
UNDER THE**

**Indian Demonstration Grants for Indian Children**

**CFDA # 84.299A**

**PR/Award # S299A160085**

**Grants.gov Tracking#: GRANT12175921**

OMB No. 1810-0722, Expiration Date: 06/30/2018

Closing Date: May 31, 2016

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This application was generated using the PDF functionality. The PDF functionality automatically numbers the pages in this application. Some pages/sections of this application may contain 2 sets of page numbers, one set created by the applicant and the other set created by e-Application's PDF functionality. Page numbers created by the e-Application PDF functionality will be preceded by the letter e (for example, e1, e2, e3, etc.).

**Application for Federal Assistance SF-424**

* 1. Type of Submission: <input type="checkbox"/> Preapplication <input checked="" type="checkbox"/> Application <input type="checkbox"/> Changed/Corrected Application	* 2. Type of Application: <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision	* If Revision, select appropriate letter(s): <input type="text"/> * Other (Specify): <input type="text"/>
--	--	--

* 3. Date Received: <input type="text" value="05/31/2016"/>	4. Applicant Identifier: <input type="text"/>
--	--

5a. Federal Entity Identifier: <input type="text"/>	5b. Federal Award Identifier: <input type="text"/>
--	---

**State Use Only:**

6. Date Received by State: <input type="text"/>	7. State Application Identifier: <input type="text"/>
---	---

**8. APPLICANT INFORMATION:**

\* a. Legal Name:

* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="73-1023474"/>	* c. Organizational DUNS: <input type="text" value="1213944800000"/>
--	---

**d. Address:**

\* Street1:   
Street2:   
\* City:   
County/Parish:   
\* State:   
Province:   
\* Country:   
\* Zip / Postal Code:

**e. Organizational Unit:**

Department Name: <input type="text"/>	Division Name: <input type="text"/>
--	--

**f. Name and contact information of person to be contacted on matters involving this application:**

Prefix:  \* First Name:   
Middle Name:   
\* Last Name:   
Suffix:

Title:

Organizational Affiliation:

* Telephone Number: <input type="text" value="(720) 552-6123"/>	Fax Number: <input type="text" value="(720) 526-6940"/>
---	---

\* Email:

**Application for Federal Assistance SF-424**

**\* 9. Type of Applicant 1: Select Applicant Type:**

K: Indian/Native American Tribally Designated Organization

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

\* Other (specify):

**\* 10. Name of Federal Agency:**

U.S. Department of Education

**11. Catalog of Federal Domestic Assistance Number:**

84.299

CFDA Title:

Indian Education -- Special Programs for Indian Children

**\* 12. Funding Opportunity Number:**

ED-GRANTS-022916-002

\* Title:

Office of Elementary and Secondary Education (OESE): Office of Indian Education (OIE): Indian Education Discretionary Grants Programs: Demonstration Grants for Indian Children Program CFDA Number 84.299A

**13. Competition Identification Number:**

84-299A2016-1

Title:

**14. Areas Affected by Project (Cities, Counties, States, etc.):**

Add Attachment

Delete Attachment

View Attachment

**\* 15. Descriptive Title of Applicant's Project:**

Traditional Knowledge, New Ideas, a Better Cheyenne River

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

**Application for Federal Assistance SF-424**

**16. Congressional Districts Of:**

\* a. Applicant

\* b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

**17. Proposed Project:**

\* a. Start Date:

\* b. End Date:

**18. Estimated Funding (\$):**

* a. Federal	<input type="text" value="696,699.96"/>
* b. Applicant	<input type="text" value="0.00"/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value="696,699.96"/>

**\* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

a. This application was made available to the State under the Executive Order 12372 Process for review on

b. Program is subject to E.O. 12372 but has not been selected by the State for review.

c. Program is not covered by E.O. 12372.

**\* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

Yes  No

If "Yes", provide explanation and attach

**21. \*By signing this application, I certify (1) to the statements contained in the list of certifications\*\* and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances\*\* and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

\*\* I AGREE

\*\* The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

**Authorized Representative:**

Prefix:  \* First Name:

Middle Name:

\* Last Name:

Suffix:

\* Title:

\* Telephone Number:

Fax Number:

\* Email:

\* Signature of Authorized Representative:

\* Date Signed:

## ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

**PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.**

**NOTE:** Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee- 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.
19. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

<p>SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL</p> <p>Kellie Jewett-Fernandez</p>	<p>TITLE</p> <p>Director of Business and Program Development</p>
<p>APPLICANT ORGANIZATION</p> <p>American Indian Science and Engineering Society</p>	<p>DATE SUBMITTED</p> <p>05/31/2016</p>

Standard Form 424B (Rev. 7-97) Back

# DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

Approved by OMB  
0348-0046

<b>1. * Type of Federal Action:</b> <input type="checkbox"/> a. contract <input checked="" type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	<b>2. * Status of Federal Action:</b> <input type="checkbox"/> a. bid/offer/application <input checked="" type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	<b>3. * Report Type:</b> <input checked="" type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change
<b>4. Name and Address of Reporting Entity:</b> <input checked="" type="checkbox"/> Prime <input type="checkbox"/> SubAwardee * Name: American Indian Science and Engineering Society * Street 1: 2305 Renard SE, Suite 200    * Street 2: * City: Albuquerque    * State: NM: New Mexico    * Zip: 87106-4313 Congressional District, if known: NM-001		
<b>5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:</b>		
<b>6. * Federal Department/Agency:</b> Department of Education	<b>7. * Federal Program Name/Description:</b> Indian Education -- Special Programs for Indian Children CFDA Number, if applicable: 84.299	
<b>8. Federal Action Number, if known:</b>	<b>9. Award Amount, if known:</b> \$	
<b>10. a. Name and Address of Lobbying Registrant:</b> Prefix    * First Name: N/A    Middle Name * Last Name: N/A    Suffix * Street 1    * Street 2 * City    * State    * Zip		
<b>b. Individual Performing Services</b> (including address if different from No. 10a) Prefix    * First Name: N/A    Middle Name * Last Name: N/A    Suffix * Street 1    * Street 2 * City    * State    * Zip		
<b>11.</b> Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure. * Signature: Kellie Jewett-Fernandez * Name: Prefix    * First Name: Kellie    Middle Name * Last Name: Jewett-Fernandez    Suffix Title: Director of Business and Program Development    Telephone No.: 720-552-6123    Date: 05/31/2016		
<b>Federal Use Only:</b>		Authorized for Local Reproduction Standard Form - LLL (Rev. 7-97)

PR/Award # S299A160085

**NOTICE TO ALL APPLICANTS**

OMB Number: 1894-0005  
Expiration Date: 03/31/2017

The purpose of this enclosure is to inform you about a new provision in the Department of Education's General Education Provisions Act (GEPA) that applies to applicants for new grant awards under Department programs. This provision is Section 427 of GEPA, enacted as part of the Improving America's Schools Act of 1994 (Public Law (P.L.) 103-382).

**To Whom Does This Provision Apply?**

Section 427 of GEPA affects applicants for new grant awards under this program. **ALL APPLICANTS FOR NEW AWARDS MUST INCLUDE INFORMATION IN THEIR APPLICATIONS TO ADDRESS THIS NEW PROVISION IN ORDER TO RECEIVE FUNDING UNDER THIS PROGRAM.**

(If this program is a State-formula grant program, a State needs to provide this description only for projects or activities that it carries out with funds reserved for State-level uses. In addition, local school districts or other eligible applicants that apply to the State for funding need to provide this description in their applications to the State for funding. The State would be responsible for ensuring that the school district or other local entity has submitted a sufficient section 427 statement as described below.)

**What Does This Provision Require?**

Section 427 requires each applicant for funds (other than an individual person) to include in its application a description of the steps the applicant proposes to take to ensure equitable access to, and participation in, its Federally-assisted program for students, teachers, and other program beneficiaries with special needs. This provision allows applicants discretion in developing the required description. The statute highlights six types of barriers that can impede equitable access or participation: gender, race, national origin, color, disability, or age. Based on local circumstances, you should determine whether these or other barriers may prevent your students, teachers, etc. from such access or participation in, the Federally-funded project or activity. The description in your application of steps to be taken to overcome these barriers need not be lengthy; you may provide a clear and succinct description of how you plan to address those barriers that are applicable to your circumstances. In addition, the information may be provided in a single narrative, or, if appropriate, may

be discussed in connection with related topics in the application.

Section 427 is not intended to duplicate the requirements of civil rights statutes, but rather to ensure that, in designing their projects, applicants for Federal funds address equity concerns that may affect the ability of certain potential beneficiaries to fully participate in the project and to achieve to high standards. Consistent with program requirements and its approved application, an applicant may use the Federal funds awarded to it to eliminate barriers it identifies.

**What are Examples of How an Applicant Might Satisfy the Requirement of This Provision?**

The following examples may help illustrate how an applicant may comply with Section 427.

- (1) An applicant that proposes to carry out an adult literacy project serving, among others, adults with limited English proficiency, might describe in its application how it intends to distribute a brochure about the proposed project to such potential participants in their native language.
- (2) An applicant that proposes to develop instructional materials for classroom use might describe how it will make the materials available on audio tape or in braille for students who are blind.
- (3) An applicant that proposes to carry out a model science program for secondary students and is concerned that girls may be less likely than boys to enroll in the course, might indicate how it intends to conduct "outreach" efforts to girls, to encourage their enrollment.
- (4) An applicant that proposes a project to increase school safety might describe the special efforts it will take to address concern of lesbian, gay, bisexual, and transgender students, and efforts to reach out to and involve the families of LGBT students.

We recognize that many applicants may already be implementing effective steps to ensure equity of access and participation in their grant programs, and we appreciate your cooperation in responding to the requirements of this provision.

**Estimated Burden Statement for GEPA Requirements**

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless such collection displays a valid OMB control number. Public reporting burden for this collection of information is estimated to average 1.5 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. The obligation to respond to this collection is required to obtain or retain benefit (Public Law 103-382). Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the U.S. Department of Education, 400 Maryland Ave., SW, Washington, DC 20210-4537 or email [ICDocketMgr@ed.gov](mailto:ICDocketMgr@ed.gov) and reference the OMB Control Number 1894-0005.

**Optional - You may attach 1 file to this page.**

	Add Attachment	Delete Attachment	View Attachment
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## CERTIFICATION REGARDING LOBBYING

### Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

### Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions. Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

#### \* APPLICANT'S ORGANIZATION

American Indian Science and Engineering Society

#### \* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

Prefix: Ms. \* First Name: Kellie Middle Name:

\* Last Name: Jewett-Fernandez Suffix:

\* Title: Director of Business and Program Development

\* SIGNATURE: Kellie Jewett-Fernandez

\* DATE: 05/31/2016

## Abstract

The abstract narrative must not exceed one page and should use language that will be understood by a range of audiences. For all projects, include the project title (if applicable), goals, expected outcomes and contributions for research, policy, practice, etc. Include population to be served, as appropriate. For research applications, also include the following:

- Theoretical and conceptual background of the study (i.e., prior research that this investigation builds upon and that provides a compelling rationale for this study)
- Research issues, hypotheses and questions being addressed
- Study design including a brief description of the sample including sample size, methods, principals dependent, independent, and control variables, and the approach to data analysis.

[Note: For a non-electronic submission, include the name and address of your organization and the name, phone number and e-mail address of the contact person for this project.]

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## You may now Close the Form

You have attached 1 file to this page, no more files may be added. To add a different file, you must first delete the existing file.

\* Attachment:

[Add Attachment](#)

[Delete Attachment](#)

[View Attachment](#)

## **Traditional Knowledge, New Ideas, a Better Cheyenne River**

### **Project Abstract**

The project partners include: the American Indian Science and Engineering Society (Indian Organization), Cheyenne-Eagle Butte Schools (BIE-funded school), and the Cheyenne River Sioux Tribe (Tribe). All of the proposed project programs and activities will take place within the geographic area of the Cheyenne River Sioux Tribe (CRST) reservation and primarily within the Cheyenne-Eagle Butte (C-EB) school system.

The proposed project will address barriers to college and career readiness, specifically in the fields of science, technology, engineering, and mathematics (STEM), among American Indian and Alaska Native (AI/AN) students. There are a multitude of barriers to college and career readiness among C-EB and CRST students. Among those are community wide issues like poverty, poor health, and substance abuse, issues that are pervasive and deeply rooted. Additionally, there is a clear need among C-EB Schools to improve the math and science proficiency of its students. To address these issues the proposed project seeks 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 for CRST youth. Improving STEM education by introducing novel and culturally relevant curriculum and programs will provide C-EB students with opportunities to grow and flourish in new environments is the mission of the proposed collaborative project. The proposed project will build upon existing relationships, opportunities, and infrastructure to provide novel STEM programming to C-EB students, working towards restoring hope and paving a vibrant future in STEM for the whole CRST community.

The following are the proposed measurable objectives of the project:

1. Increase STEM participation among C-EB students in grades K-12 through Power Up science fair workshops, AISES science fairs, robotics and computing curriculum and afterschool activities, AISES National Conference, college preparation resources and activities, and academic scholarships;
2. Increase the STEM education capacity of C-EB Schools through curriculum development, teacher training and professional development, and college readiness resource development;
3. Increase CRST community interest and engagement in STEM, particularly among parents of C-EB students through Family STEM Activity Nights, outreach and promotion conducted by CRST, and involvement of CRST elders and community members in developing and incorporating CRST culture and language in all of the proposed project activities; and
4. Produce and disseminate nationally reports with results that documents the community-building process of this project, resources developed and drawn upon, activities, lessons learned, and best practices that will assist other AI/AN communities to increase student and community interest and engagement in STEM, ultimately improving the college and career readiness of AI/AN students nationally.

In this community-based project, AISES will provide STEM knowledge, program development and implementation. CRST will generate community support and participation, and C-EB Schools will provide educational expertise and facilities as well as recruit administrator, teacher, and student participants. All of the partners have the expertise and passion to effectively develop, implement, and evaluate the proposed project in order to significantly improve the college and career readiness of CRST students.

## Project Narrative File(s)

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\* Mandatory Project Narrative File Filename:

[Add Mandatory Project Narrative File](#)

[Delete Mandatory Project Narrative File](#)

[View Mandatory Project Narrative File](#)

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To add more Project Narrative File attachments, please use the attachment buttons below.

[Add Optional Project Narrative File](#)

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Traditional Knowledge, New Ideas, a Better Cheyenne River

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## **Traditional Knowledge, New Ideas, a Better Cheyenne River**

### **NYCP Project Narrative**

#### **Need for Project**

American Indian and Alaska Native (AI/AN) students are one of the most disadvantaged groups in the country in terms of educational achievement and high school graduate rates. The educational disparity of AI/AN students begins in elementary school and continues into high school where only 67% of AI/AN students graduate high school<sup>1</sup>. Furthermore, Bureau of Indian Education (BIE) schools report only a graduate rate of 53%, both of these statistics are far below the national average graduate rate of 80%<sup>1</sup>. Even for the AI/AN students who graduate from high school, most are too often underprepared for college. AI/AN students often attend schools that are underfunded and ill equipped to prepare them for college entrance or a successful college experience. Fewer than half of AI/AN high school students have access to the full range of math and sciences courses available at their schools<sup>2</sup>. Inevitably these disparities compound into diminished success at the secondary education level with only 39% of AI/AN students completing bachelor's degrees compared to 62% of white students<sup>3</sup>.

Particularly in the fields of science, technology, engineering, and math (STEM), AI/AN college students are severely underrepresented, leading to even more dramatic underrepresentation in the STEM workforce. This underrepresentation is due at least in part to the lack of development of interest in STEM disciplines during grade school and to a related lack of proficiency in STEM subjects. AI/AN students had lower National Assessment on Educational Progress (NAEP) mathematics and reading scores than other racial/ethnic groups in grades 4 and 8. Furthermore, the gap between AI/AN NAEP mathematics scores and non-AI/AN scores increased from 2005 to 2011 for both 4th and 8th grade students<sup>4</sup>. Proficiency

scores in mathematics of students in BIE schools across all grades (k-12) seem to be declining slightly with 70% of students scoring at the “basic” level and 27% at the “proficient” level in 2012-2013. Whereas in 2011-12, 64% of students scored at the “basic” level and 32% at the “proficient” level<sup>5</sup>. Students’ science proficiency was somewhat higher than mathematics, however the same decline in proficiency was found between the 2012-2013 and 2011-2012 academic years<sup>5</sup>.

In addition to proficiency issues in elementary and middle school, fewer than half of AI/AN high school students have the full range of math and science courses available at their school to prepare them for college entrance exams, and only one in four AI/AN students who take the American College Test (ACT) score at the college ready level in math<sup>6</sup>. Therefore, it is easy to understand why AI/AN college students selecting majors in Science and Engineering (S&E) fields at rates far less than their non-Native (particularly White) counterparts. According to the National Science Foundation (NSF) in 2012, 66.7% of White or Caucasian Freshmen intended to major in S&E fields, while only 2.5% of AI/AN students declared the same<sup>7</sup>. While more and more underrepresented students are starting college with plans to major in STEM fields, completion rates for underrepresented minorities continue to lag behind. One third of white students and 42% of Asian-American students who started college as intended STEM majors graduated with STEM degrees by the end of five years. For underrepresented minorities, the five-year completion rates were much lower -- 22.1 percent for Latino students, 18.4 percent for African American students and 18.8 percent for AI/AN students<sup>8</sup>. According to NSF 2011 data, 36.9% of White students earned a Bachelor’s degree in an S&E field compared to only 31% of AI/AN students<sup>7</sup>. However, 31% of AI/AN students is only 3,445 S&E degrees, whereas 338,461 S&E degrees were earned by White students, revealing the stark difference between the

number of AI/AN graduates entering the STEM workforce versus White graduates.

Additionally, the share of S&E degrees awarded to African American and American Indian or Alaska Native students did not change between 2000 and 2011, at 9% and 1%, respectively<sup>7</sup>.

The proposed project seeks funding to work specifically with the American Indian youth of the Cheyenne River Sioux Tribe (CRST). Students of the CRST, especially those living on the reservation, face a huge variety of challenges. Poverty to a degree rarely found elsewhere in America and pervasive hopelessness are among the most severe. Teen pregnancy, gang violence, and high suicide rates are rampant, representing symptoms of a community that lacks hope. These extreme challenges, not only contribute to feelings of hopelessness and despair, but consequently prevent students from considering their future (i.e. preparing for college and careers). Coupled with the high unemployment rates Cheyenne River youth see among their parents and other adult community members, they have little expectation of their lives being any different from their parents.

In 2014, the Cheyenne River Tribal Ventures project, conducted a comprehensive survey to better understand the state of the CRST community. The Cheyenne River Voices: Our Survey, Our Voice, Our Way, Executive Summary Report, cites the following statistics<sup>9</sup>:

- In 2012-2014, CRST had 15,933 tribal members, with 70% of those members living on the reservation.
- In 2012-2014, the CRST reservation was home to 10,564 people, of which 8,556 were American Indian. Approximately 35% or 2,986 of the American Indian population living on the CRST reservation were between the ages of 5 and 18.

- The median annual income for the CRST reservation was \$18,156 or \$8.73hr. With few jobs available, two-thirds of the population survive on much less than one-third the average American income.
- The survey reported 47% unemployment, demonstrating that unemployment among CRST is extremely high. Of those unemployed, 42% are seeking employment and 18% are not presently seeking employment, 16% are disabled, 15% are retired, 9% are homemakers, and 2% were recently laid-off.
- Education levels of CRST members are very low. Of the 1,658 CRST members surveyed, 14% completed only elementary school, 11% completed only middle school or junior high school, 41% completed high school or passed the General Education Development (GED) exam, 5% earned their associate's degree, 17% have completed some college coursework, 4% have completed vocational programs, 6% have completed bachelor's degrees, and 3% have completed a master's degrees or other advanced degrees.
- 37% of 1,843 CRST family members surveyed were students.
- CRST members cited a lack of education and experience as barriers to employment.
- 44% of 1,169 non-student CRST members reported wanting to further their education.

Cheyenne-Eagle Butte Schools is located in Eagle Butte on the CRST reservation. The schools are run cooperatively with the Bureau of Indian Affairs (BIA), and CRST has significant involvement in the operation of the school. Of the 1,143 C-EB schools enrolled students, approximately 98% American Indian. Given a majority of CRST students attend Cheyenne-Eagle Butte (C-EB) schools, AISES proposes to work collaboratively with C-EB schools administration and teachers and CRST leadership and elders on the proposed project to bring

innovative and culturally relevant STEM programming to C-EB schools and CRST students in order to improve their college and career readiness, particularly in STEM fields.

The C-EB schools are divided into five centers Primary (K-2), Upper Elementary (3-6), Junior High (7-8), High School (9-12) and E.A.G.L.E. Center (7-12 Alternative). Based on South Dakota Department of Education 2014-2015 report cards<sup>10</sup>, the C-EB Primary, Upper Elementary, and Junior High schools have school performance index (SPI) points of less than 17 out of a possible 100, based on attendance and student achievement. The High School has a SPI of 29.37 out of a possible 100, based on college and career readiness, completion rates, and student achievement. In terms of math proficiency among students at the Primary and Upper Elementary schools, less than 10% of students achieved math levels of 3 or 4 (on a scale from 1-4). Only 4.5% of Junior High students achieved math levels of 3 or 4 and not even 2% of High School students achieved levels of 3 or 4. In terms of science proficiency among students at the Upper Elementary school, more than 70% of students scored below proficient (either basic or below basic). Only approximately 10% of Junior High students are proficient in science with nearly 90% rated at basic or below basic. At the High School level, nearly 2% of students test as advanced in science, however almost 80% fall at basic or below basic in science proficiency.

There is a clear need among C-EB Schools to improve the math and science proficiency of its students. There are a multitude of barriers to college and career readiness among C-EB and CRST students. Among those are community wide issues like poverty, health, and substance abuse, issues that are pervasive and deeply rooted. However, improving the education of CRST youth, and providing them with opportunities to grow and flourish in environments they have not been previously exposed is the mission of the proposed collaborative project. The proposed project “Traditional Knowledge, New Ideas, a Better Cheyenne River” will build upon existing

opportunities and infrastructure to provide novel STEM programming to C-EB students, restoring hope and paving a vibrant future in STEM.

Opportunities in the local community to support CRST students include:

- Youth programming offered through a local non-profit, Cheyenne River Youth Project (CRYP). CRYP offers wellness, cultural, art, and educational programs as part of its after school activities.
- Four Bands Community Fund offers youth entrepreneurship programs that include; business development education and basic financial literacy. Additionally, Four Bands offers high school internship programming where students are placed in local businesses to gain valuable work experience.
- CRST – Youth Affairs Program and Youth Diabetes Prevention Program offers health and wellness activities to youth across the reservation.

Existing local policies, programs, practices, service providers, and funding sources include:

- CRST – Education Services Department is charged with administering academic scholarships to enrolled tribal members attending college.
- Seniors at C-EB enrolled in College Readiness Study Hall are provided support throughout the year to complete admissions applications for post-secondary education.
- The C-EB School System is a recipient of 21st Century Grant funding from the Department of Education. This program offered supplemental educational to students grade K-12. It included summer school, homework help, and cultural enrichment.

### **Project Design**

The proposed project will introduce American Indian Science and Engineering Society's (AISES') K-12 STEM programming to C-EB Schools in collaboration with CRST leadership, administration, and elders as well C-EB Schools leadership, administration, and educators in order to significantly improve the college and career readiness of AI/AN students, with particular focus on increasing the number of AI/ANs pursuing higher education degrees and careers in STEM.

**Defined Local Geographic Area.** The proposed project is focused on a defined local geographic area, the CRST reservation. The proposed partnership was selected because AISES does not currently have a strong relationship with C-EB Schools, and could therefore introduce its programming without any redundancies, and C-EB Schools and CRST already work closely on district and school operations. Although focused in a specific region, the proposed programming will expose students to a greater community of AI/AN students working on STEM projects and research, as well as connect students to events and competitions where teamwork and creativity are nurtured.

**Based on Scientific Research.** The proposed project is based on the clear need for to inspire students engage in their education and believe in a brighter future, which AISES believes can begin with access to innovative STEM programming and capacity building among C-EB Schools and CRST to better support the academic and workforce development needs of its students. There is a scientific research focused on how to recruit and retain AI/AN students in STEM, suggesting student services and mentoring at the college level are effective methods. However, there is a lack of research pertaining to specific programs and models that identify successful teaching and learning strategies for STEM subjects and AI/AN students. Additionally, most STEM research on underrepresented minority (URM) students is focused at the college level, not

on grades K-12, making the proposed project even more unique in its capacity to provide best practices.

AISES works hard to develop and promote programs that are supported by research. For example, robotics curriculum has been shown to increase the achievement scores of youth ages 9-11 in informal learning environments<sup>11</sup>. Furthermore Carnegie Mellon Robotics Academy states that robotics is the single best integrator of STEM subjects. Robotics brings all of the cognitive elements of engineering instruction together with a hands-on activity that allows students to team, problem-solve, use creative expression and thinking, while designing a solution to a stated problem. By providing robotics curriculum and after school programming, the proposed project will help in C-EB students to engage with STEM subjects in a new, creative, and collaborative way, encouraging them stay on a path toward academic achievement.

**Culturally Appropriate Programming.** By partnering with CRST, AISES will be able to modify its current program content to develop culturally relevant content that is specific to CRST traditional knowledge. Introducing programs and activities that the students find not only intellectually stimulating but culturally and emotionally fulfilling will further engage students and change their perception of STEM as a foreign, western pursuit that is not applicable to their life experiences. For example, AISES will work with CRST elders and cultural advisors to create in-class curriculum that incorporates Sphero robotics and computing with an art activity that is based in Lakota culture. As part of the proposed programming, AISES will present Power Up workshops, which demonstrate for students the scientific research methods and development of science fair projects. AISES will work with CRST elders to develop experiments conducted during the Power Up workshops that incorporate CRST traditional knowledge. AISES will also work with teachers to and students to develop science fair projects that are either culturally based

or have a cultural component. For example, students could test the effectiveness of a traditional medicine versus a conventional pharmaceutical medicine at curing the target ailment. In particular, AISES will work with CRST leadership, elders, and cultural advisors to create Family STEM night activities that include Lakota culture and language so that not only are students able to experience the interrelatedness of CRST traditional knowledge and STEM but their families and other community members can continue to learn and develop their understanding of and interest in STEM. The project partners will work hard to ensure that all aspects of the proposed programming a culturally relevant and most importantly engaging and inspiring.

**Goals, Objectives, and Outcomes.** The goal of the proposed project is to improve the college and career readiness of American Indian and Alaska Native (AI/AN) students, particularly in the fields of science, technology, engineering, and math (STEM) who live on the Cheyenne River Sioux Tribe (CRST) reservation and attend Cheyenne-Eagle Butte (C-EB) Schools. To achieve this goal, the proposed project has the following objectives:

Objective 1: Within 48 months, increase STEM participation among C-EB students in grades K-8 through: 1) four Power Up workshops presenting scientific method and discovery per year, 2) participation in LEGO robotics (Elementary and Upper Elementary) and Sphero robotics and computing (Elementary through Junior High) in-class curriculum, 3) participation in VEX robotics, establishing and maintaining a minimum of two junior high school teams who compete in regional and national competitions, and 4) for grades 5-8, participation in AISES' National American Indian Virtual Science and Engineering (NAIVSEF) and/or the AISES Energy Challenge, an energy related virtual science fair competition (no limit to the number of students who can participate).

Objective 2: Within 48 months, increase STEM participation among C-EB high school students 9-12 through: 1) four “Power Up” workshops presenting scientific method and discovery, 2) participation in VEX robotics, establishing and maintaining a minimum of two high school teams who compete in regional and national competitions, 3) participation in Sphero robotics and computing in-class curriculum, 4) participation in AISES’ NAIVSEF and/or the AISES Energy Challenge, an energy related virtual science fair competition (no limit to the number of students who can participate), and 5) 12 travel scholarships per year for competitively selected students to participate in the AISES National Conference.

Objective 3: Within 48 months, increase the STEM education capacity of C-EB Schools through curriculum development, teacher training and professional development, and college readiness resource development through: 1) introduction of robotics curriculum, particularly culturally inspired Sphero robotics and computing curriculum and activities, 2) introduction of cutting-edge robotics and computing equipment and operating devices (tablets) that can be used for many years, 3) travel assistance for 6 teachers per year to attend the AISES National Conference where they will attend robotics trainings (LEGO, Sphero, and VEX), sessions on K-12 STEM curriculum and activities, and other professional development resources, 4) teacher stipends and support from AISES to coach robotics teams and sponsor science fair student projects, and 5) collaboration with AISES to develop, coordinate, and provide college readiness opportunities (i.e. college tours, college fairs, and college entrance preparation, specifically supporting future STEM college majors).

Objective 4: Within 48 months, increase CRST community interest and engagement in STEM, particularly among parents of C-EB students, and CRST support of STEM students through: 1) 4 Family STEM Activity Nights per year, 2) outreach and promotion conducted by CRST, 3)

involvement of CRST elders and community members in developing and incorporating Lakota culture and language in all of the proposed project activities, and 4) academic scholarships to CRST students majoring in STEM fields at accredited colleges and universities.

Objective 5: Within 48 months, produce and disseminate nationally reports with results that documents the community-building process of this project, resources developed and drawn upon, activities, lessons learned, and best practices that will assist other AI/AN communities to increase student and community interest and engagement in STEM and the capacity of AI/AN serving schools to provide high quality STEM education, ultimately improving the college and career readiness of AI/AN students.

Outcomes: The outcomes of the proposed community-based project is to increase student interest in STEM across all grades, build the capacity of C-EB to engage students in STEM with the long-term goal of increasing college and career readiness, and inspiring students through culturally relevant STEM programming by taking advantage of the education resources and traditional knowledge of CRST elders and community members. Students will benefit from increased, interactive STEM education activities that will help to prepare them for a successful academic future and that ultimately will build skills toward STEM employment benefiting their families and the CRST community. Additional outcomes include the identification of best practices and methods effective at engaging AI/AN students in STEM through the documentation and dissemination of project results that can then be replicated in other AI/AN communities. Specific outcomes include:

1. Provide four Power Up workshops per year to all C-EB Schools (not including the alternative school), reaching 400 C-EB students per year.

2. Engaging 16 Primary and Upper Elementary classrooms in LEGO robotics curriculum over four years.
3. Engaging 4 Primary (K-2), 8 Upper Elementary (3-6) classrooms, 4 Junior High (7-8), and 4 High School (9-12) classrooms in Sphero robotics and computing curriculum over four years.
4. Establishing and maintaining at least 2 Junior High and 2 High School VEX robotics teams, involving at least 20 students.
5. At least 12 students per year in grades 5-12 will participate in NAVSEF and/or the Energy Challenge.
6. At least 12 High School students will attend the AISES National Conference per year, totaling 48 students over 4 years.
7. Provide 10 academic scholarship per year, administered by CRST, to CRST students majoring in STEM fields at accredited colleges and universities.
8. At least 6 teachers per year will attend the AISES National Conference, totaling 24 teachers.
9. At least 50 teachers will participate in the various proposed activities.
10. An estimated 20 families will attend 4 Family STEM Activity Nights, reaching an estimated 80 family per year, 320 families in total. However there will be some repeated families.
11. An estimated 20 High School students each will attend 2 college visits per year, and at least 100 High School students will participate in college preparation events.

While this project is anticipated to directly involve hundreds of C-EB students and at least 50 teachers, the results from this project will potentially benefit thousands of AI/AN students nationwide who may in the future benefit from the community-based STEM education model offered through this project.

Measurements: The No Child Left behind Act of 2001 requires each state to produce an annual report card that summarizes assessment results of students statewide and disaggregated by student subgroups. The South Dakota Department of Education report cards provide a School Performance Index (SPI) that for K-8 schools is based on attendance and student achievement, which High Schools' SPI are based on college and career readiness, high school completion, and student achievement. In addition the Bureau of Indian Education (BIE) also generates Annual Report Cards containing several types of data designed to inform parents and the general public about the progress of BIE. When the data are published, AISES staff will track and record C-EB Schools scores including, SPI, attendance, student achievement, college and career readiness, high school completion, and math and science proficiency for all four years of the grant and multiple years thereafter. By collecting these variables, AISES will be able to conduct analyses to see if the project elements have an effect on C-EB Schools outcomes.

Because the programming may generate interest and increase engagement in STEM but not quantitatively change tested proficiencies, AISES will track the number of participating students, the number of various activities offered, and the number of participating teachers, as well as conduct evaluations before and after the implementation of programming or a series of programs in order to assess whether or not the objectives and outcomes of the project are met (for more details see the Project Evaluation section).

**Successfully Address Needs.** CRST youth need alternative outlets to inspire hope in their futures and identify opportunities to escape and improve the troubling statistics of their community. The proposed programming will address the needs of C-EB students by developing and implementing activities that engage student intellectually while re-framing STEM by incorporating traditional knowledge and the Lakota language. By introducing cutting edge

STEM activities as early as kindergarten, C-EB students will have the opportunity to engage in age-appropriate, fun, and entertaining STEM applications, encouraging them to play and learn while avoiding the multitude of challenges facing CRST youth far too early in life.

There is a nearly endless list of reasons why so few CRST members pursue education beyond high school. The proposed project seeks to address lack of proficiency and interest in STEM as the primary barriers to the pursuit of higher education and careers, particularly in STEM fields. To overcome these barriers, AISES and its partners seek to improve proficiencies in math and science and increase interest in STEM by: 1) providing culturally relevant, entertaining, and cutting edge technologically focused programs, 2) involving the whole family in STEM activities, 3) engaging students in a network of creative, young AI/AN scientific researchers working to better their communities, 4) building the capacity of C-EB to support high school graduates in pursuit of STEM higher education and careers, and 5) reinvigorate the K-12 curriculum to include robotics and computing, two fields at the front of today's STEM advancements. AISES believes that if students are motivated to pursue STEM and develop STEM competencies early-on, student will place themselves on a trajectory of success, seeking college educations and advanced STEM careers.

Based on the Cheyenne River Voices survey and report, there is a clear desire for additional educational opportunities and an understanding of the importance of education to securing employment (i.e. 44% of non-student community members are interested in furthering their education). To address this community-wide need, this project proposes to include C-EB parents, families, and community members in Family STEM Activity Nights. These events will serve many functions including encouraging parents to take active roles in their students' educations in and out of school, inspiring parents, extended family members, and community

members to pursue STEM by informing them of a world of opportunities available to them through STEM education and careers, and making STEM accessible and relatable by incorporating traditional knowledge and the Lakota language.

The proposed project addresses the need for improved school performance by: 1) working directly with C-EB administrators and educators to understand and address the STEM needs of C-EB, 2) building capacity through introduction of advanced and novel STEM curriculum, 3) providing teacher trainings and professional development, 4) increasing support capacity to provide STEM student activities, and 5) working collaboratively towards further developing college readiness resources and activities.

The proposed programming will also address the need to improve the confidence of students, particularly AI/AN students, in their ability to successfully tackle and achieve success in STEM subjects. All students, at all ages, have enormous potential to succeed in STEM fields. However, that potential is not often realized because current classroom teaching models often fail to engage students that learn differently or who would benefit from more one-on-one, interactive, hands-on learning environments. The proposed programming will allow students to learn in and out of the classroom in novel ways that engage different ways of thinking and interaction with STEM. Furthermore, the spirit of competition (robotics and science fair) may also spark interest, creating real world scenarios to motivate students to create something that is the best of its kind. Additionally, for many students, robotics will be the inspiration they need, linking academic theory to a fun, real-world project, to foster a love of STEM.

The proposed project also addresses the need for research and evaluation methods that help to identify best practices and strategies for improving the education and learning of STEM by AI/AN students across the country.

Lastly, one step towards overcoming the overwhelming challenges of poverty, poor health, and violence that affect the CRST community, is through the proposed community-based education model that creates a critical mass of in-school and after-school STEM-focused educational opportunities for students, educators, and families ultimately resulting in community members who are better prepared to pursue higher education, achieve professional success in STEM fields, and be productive leaders in their community, helping to develop and implement STEM infrastructure.

**Collaboration to Maximize Effectiveness.** The three partners of the proposed Native Youth and Community Project include: 1) the American Indian Science and Engineering Society (AISES), 2) the Cheyenne River Sioux Tribe (CRST), and 3) Cheyenne-Eagle Butte (C-EB) Schools. The project director is AISES Director of Special Projects and Research, Dr. Kathy DeerInWater (Cherokee). The CRST is represented by Vice Tribal Chairman Ryman LeBeau (Cheyenne River Lakota). C-EB Schools is represented by Superintendent Larry Mendoza (Cheyenne River Lakota). These three partner organizations and representatives have the expertise and experience to bring all the necessary personnel and resources together in order to successfully implement the proposed programming. The CRST already works closely with C-EB schools and students in order to provide curriculum focused around Lakota culture and language, in addition to assisting with the general operation of C-EB Schools in collaboration with the BIE.

Although AISES does not currently have a strong relationship with C-EB Schools, AISES has extensive experience working with AI/AN serving institutions and tribal partners. AISES specifically selected C-EB Schools in order to develop a stronger relationship and offer its K-12 programming to a school that does is not already providing similar resources. All of the

partners will work together to tailor the proposed programming specifically to C-EB students and CRST community members.

Each partner will contribute uniquely to the proposed project. AISES will provide STEM knowledge, program content, and the staff to present programs/activities. CRST will provide cultural and language knowledge so that the proposed programming is relevant and inspiring to the CRST community. Additionally, CRST will be responsible for generating community support and participation, hosting community events, and promoting the proposed programming to the CRST community. C-EB Schools will recruit administrators and teachers to participate in the proposed programming, from providing time and facilities to taking on new responsibilities like robotics in and out of class curriculum and supporting student science fair projects. All of the partner representatives have the expertise and passion to effectively recruit additional personnel and resources in order to successfully implement the proposed programming.

The collaboration of the AISES, CRST, and C-EB Schools will also work to ensure the proposed programming will continue after the financial resources of this grant are over. Equipment and the capacity of C-EB teachers are just a few of the resources will continue to engage students in STEM and help to galvanize their interest in college and careers in STEM well after the grant. It is also impossible to quantify the affect the proposed programming will have on community support for its students and their futures, especially given the programming will be developed and advised by CRST elders and leadership. Therefore, the collaboration between the proposed partners is essential to the ultimate success and longevity of this initiative.

### **Project Personnel**

The key personnel for this project are experienced project managers and are already on board to move the project forward if it is funded.

Kathy DeerInWater, PhD (Cherokee), Director of Special Projects and Research, will oversee program development and delivery, project evaluation and the development of the final report. Kathy oversees the program development, implementation, and reporting for all AISES special projects from the National American Indian Virtual Science and Engineering Fair (NAIVSEF) to our current Robotics initiatives. In addition, Kathy is the PI or program director on all research grant projects such as the National Science Foundation funded “Lighting the Pathway to Faculty Careers for Natives in STEM” project. The Special Projects and Research department also includes all AISES’ research and academic interests, government agency relations, and the Academic Advisory Council.

Kathy has been a student member of AISES since 2007 and joined the AISES staff in October of 2014. She completed her Doctoral degree in Ecology at the University of California, Davis in September 2015. Kathy is able to bring first-hand experience to her role in assisting STEM students interested in research and academia. Her expertise in research including experimental design, analyses, writing, and reporting enable AISES to develop a research program as well as effectively evaluate and improve its programs. She will devote 10% of her time annually to this project.

Kellie Jewett-Fernandez (Cheyenne River Lakota), AISES’ Director of Business and Program Development, will work closely with Dr. DeerInWater to develop and deliver programming to youth on Cheyenne River. Kellie will work directly with tribal and school leadership, to assess needs for program, integrate cultural activities and evaluate success of program. Kellie joined AISES in May of 2015. She works closely with AISES’ many partners and is responsible for managing a number of STEM outreach programs within tribal communities. Kellie has a rich background in working with non-profits. Prior to joining AISES,

Kellie was Development Director for the Cheyenne River Youth Project, a grass-roots youth organization located in her tribal community. She has also served as the Associate Director of Entrepreneurship and Enterprise Development for First Nations Oweesta Corporation. As Manager of Scholarships for the American Indian College Fund, Kellie administered more than \$4 million in scholarship funds each year. Kellie received her BA in Communications from the University of Minnesota and holds a Master of Business Administration (MBA) with a focus on American Indian entrepreneurship from Gonzaga University. She grew up on the Cheyenne River Lakota (Sioux) reservation. Kellie will devote 10% of her time to this project.

Direct program administration will be managed by AISES Program Officer. The position is currently vacant. Program Officer will spend 25% of their time working on this particular project.

Representing the Cheyenne River Sioux Tribe is Ryman G. LeBeau (Cheyenne River Lakota). Mr. LeBeau has served CRST as a District 5 Council Representative since 2008. In 2014, he was appointed Vice Chairman. Other roles he's held on council include Chair of the Alcohol and Beverage Control Commission, Environment/Land & Natural Resources Committee Chairman, and Economic Development Committee Chair. Mr. LeBeau has also been a member of the Native American Employment and Training Council. Receiving his Bachelor of Science in Environmental Science with a minor in Biology, Mr. LeBeau has also worked as a Wildlife Biologist for the Native American Fish and Wildlife Society. He also completed the Native Nation Rebuilders program in 2013. Mr. LeBeau is committed to education and will assist AISES to deliver STEM programming through this project.

C-EB School Superintendent, Hilario (Larry) Mendoza (Cheyenne River Lakota) has over 45 years of experience in education as a teacher, consultant, coach and administrator. Mr. Mendoza has successfully administered a variety of federal and tribal grants in his various roles at

Takini School, Little Wound Elementary School and Cheyenne-Eagle Butte Schools. With a master's degree in Elementary Education with an Administrative Endorsement, Larry will remain the lead program partner at the C-EB schools and will be responsible for engaging educators to deliver programming and implementing STEM curriculum and AISES programs into the current offerings at C-EB.

The appendices include staff resumes.

### **Adequacy of Resources**

Since 1977, the American Indian Science and Engineering Society (AISES) has worked to substantially increase AI/AN representation in STEM fields as students, professionals, mentors, and leaders. AISES nurtures community-building by bridging science and technology with traditional Native American values. AISES employs a "full circle of support" model that begins with pre-college programs, progresses into collegiate life, and then into the professional years of members and on into retirement. AISES is the only professional society established by and for AI/AN that specifically emphasizes lifelong learning and educational achievement by utilizing cultural aspects with STEM.

AISES flourishes with more than 1,500 professional members, over 1,500 student members, 189 college chapters, 15 professional chapters, 170 affiliated K-12 schools, and over 5,000 scholarship awards totaling \$10.2 million. AISES is the undisputed leader in STEM opportunity in Indian Country. Members from over 200 tribal nations are represented within AISES, and AISES enjoys the support and partnership of tribes, schools, universities, other nonprofit organizations, corporations, foundations and government agencies. During the past year among other achievements, AISES served over 2,500 Native students and professionals through: numerous events that provided networking opportunities and education; provided

scholarships to college/university students in financial need; networking together professional and academic mentors with students at varying levels; recognizing and furthering the careers of cutting-edge Native STEM professionals; and sparking the interest in and love of science and related fields with students of all ages. AISES has been the nurturing force for many of these young people and adults whose accomplishments are positive role models for the Native youth following in their footsteps.

AISES successfully manages several grants and cooperative agreements from U.S. federal agencies, foundations and corporations. AISES operates in accordance with local, state and federal laws. AISES is in compliance with financial and program reporting requirements for its federal awards which currently include the National Science Foundation, Central Intelligence Agency, US Navy, Naval Sea Systems Command, Navy Civilian Careers, USDA Natural Resources Conservation Service, Environmental Protection Agency, NASA, Bureau of Land Management, and U.S. Department of Energy.

AISES is headquartered in New Mexico, but directors managing this project are located in the Colorado Field Office. Staff is fully equipped to deliver programming in terms of technology (computers, phones, office space). Staff is also in the same region as the Cheyenne River Sioux reservation, making travel for workshops, planning and other events convenient.

As part of the project, AISES seeks to deliver programming and equipment to the C-EB schools. AISES has established relationships with VEX, LEGO and has recently formed a partnership with Sphero to implement computer robotics. Additionally, AISES' tried and true services for middle and high school students will be available for this project including Science Fair, Robotics, Power Ups and participation in the annual AISES National Conference (currently in its 39<sup>th</sup> year).

The majority of resources awarded through this grant will be used for 4 general categories; 1) salary 2) travel 3) equipment 4) educator stipends. In addition to providing robotics equipment, the project is dedicated to providing education and other resources to both students and educators through training, participation in the National Conference, and development of a STEM resource library (for robotics programming). The funding requested will support a four (4) year project, affecting hundreds of students and at least 50 educators each year, and is designed to build capacity of the school and tribal community while inspiring students to succeed in STEM studies and careers for years to come.

### **Management Plan**

**Responsibilities.** The responsibilities of the American Indian Science and Engineering Society (AISES) include: 1) Work with cultural advisors from the tribe to develop culturally appropriate and meaningful STEM curriculum and programming; 2) Conduct outreach and recruitment with C-EB administration to identify teachers interested in participating in the proposed program; 3) Coordinate and/or conduct all necessary trainings to successfully introduce and implement curriculum and programming, specifically robotics and computing efforts, during in-school and out-of-school activities; 4) Provide Power Up Workshops throughout the academic year, presenting the scientific method, introducing and encouraging C-EB students to participate in AISES' STEM research opportunities including the Native American Indian Virtual Science and Engineering Fair (NAIVESEF), DOI funded Energy Challenge, and AISES National Conference research presentations; 4) Provide teacher support, in-person and through webinars, so they are able to successfully serve as science fair project sponsors and/or robotics coaches; 5) Provide and coordinate travel scholarships for High School seniors and juniors to attend the AISES National Conference; 6) Work with C-EB to build the capacity of teachers and administrators to provide

advanced, cutting-edge STEM curriculum and activities that extend beyond the life of this grant;

7) Work with C-EB to build the capacity of teachers and administrators to provide resources and opportunities to prepare AI/AN students for college, including: a) Promoting college matriculation (i.e. college visit trips, events with AISES college chapters, college fairs); b) Scholarship opportunities; collaborate to develop scholarship resources with geographic focus; and c) Assistance with college preparation (i.e. ensure STEM proficiency); and 8) Work with the tribe to build capacity to encourage and support AI/AN students to pursue college and advanced degrees in STEM fields, including: a) Engaging parents and community members as the first line of support (i.e. family nights involving STEM activities, financial preparation, and college preparedness); b) Developing tribal STEM scholarship program (i.e. provide academic scholarships for tribal members); and c) Developing a STEM mentorship program within the tribe including, events with tribal elders and leadership

The responsibilities of Cheyenne River Sioux Tribe (CRST) include: 1) Provide cultural advisors to work with AISES to develop culturally appropriate and meaningful STEM curriculum and programming; 2) Conduct community outreach and recruitment for Family STEM Activity events; 3) Provide facilities and hospitality for Family STEM Activity events; 4) Help to advertise and promote the proposed programming throughout the community; and 5) Work with the AISES to build capacity to encourage and support AI/AN students to pursue college and advanced degrees in STEM fields, including: a) Engaging parents and community members as the first line of support (i.e. family nights involving STEM activities, financial preparation, and college preparedness); b) Developing tribal STEM scholarship program (i.e. provide academic scholarships for tribal members); and c) Developing a STEM mentorship program within the tribe including, events with tribal elders and leadership.

The responsibilities of Cheyenne-Eagle Butte (C-EB) Schools include: 1) Conduct outreach and recruitment with AISES within the schools to identify teachers interested in participating in the proposed programs; 2) Provide rooms and meeting space for proposed programs that occur at C-EB schools; 3) Ensure teachers and students are allowed the time away from school to participate in the AISES National Conference; 4) Work with AISES to build the capacity of teachers and administrators to provide advanced, cutting-edge STEM curriculum and activities that extend beyond the life of this grant; 5) Work with AISES to build the capacity of teachers and administrators to provide resources and opportunities to prepare AI/AN students for college, including: a) Promoting college matriculation (i.e. college visit trips, events with AISES college chapters, college fairs); b) Scholarship opportunities; collaborate to develop scholarship resources with geographic focus; and c) Assistance with college preparation (i.e. ensure STEM proficiency)

**Timeline and Milestones.** The following is a timeline of activities and milestones of the proposed project, assuming at project start date of September 1, 2016:

September - October 2016

- AISES to work collaboratively with CRST elders and community members to modify existing AISES programming to include Lakota culture and the Lakota language.
- C-EB Schools to identify and recruit teachers and administrators to participate in the proposed programming.
- Collaboratively develop qualitative evaluation for pre- and post- surveys for participating educators and students. Administer pre-surveys prior to the start of programming.
- AISES to recruit and coordinate C-EB student and teacher travel to the AISES National Conference in Minneapolis, MN November 9-12, 2016.

- CRST to conduct community outreach and promote support of the program among CRST parents and community members in general.
- By the end of this period, robotics equipment will be in classrooms and ready to use.
- AISES staff to make one trip to C-EB schools to present 4 Power Up workshops and recruit students to participate in AISES science fairs, as well as secure teachers as student project sponsors. During this trip AISES will work collaboratively with CRST to provide a Family STEM Activity Night.

November – December 2016

- C-EB students and teachers attend the AISES National Conference in Minneapolis, MN November 9-12, 2016, where teachers receive robotics training and participate in other curriculum and professional development sessions
- C-EB teachers to begin weekly robotics team meetings and meetings with their science fair students.
- C-EB teachers to begin in-class robotics curriculum.
- AISES and C-EB administrator and counselor to develop and implement additional college preparation resources, including organizing college visits in the spring.
- CRST to conduct community outreach and promote support of the program among CRST parents and community members in general.
- AISES staff to make one trip to C-EB schools to present 4 Power Up workshops and recruit students to participate in AISES science fairs, as well as secure teachers as student project sponsors. During this trip AISES will work collaboratively with CRST to provide a Family STEM Activity Night.

January – February 2017

- Students to register for the AISES science fairs (NAIVSEF and Energy Challenge), including Senior and Junior divisions.
- C-EB teachers to continue weekly meetings with robotics team and science fair students until competitions are underway.
- C-EB teachers to continue in-class robotics curriculum.
- AISES and C-EB administrator and counselor to implement college preparation activities, including one college visit with a local AISES university chapter.
- CRST to conduct community outreach and promote support of the program among CRST parents and community members in general.
- CRST to issue a call for academic scholarship applications from CRST students pursuing STEM majors at accredited colleges.
- AISES staff to make one trip to C-EB schools to present 4 Power Up workshops and recruit students to participate in AISES science fairs (for the following year), as well as secure teachers as student project sponsors. During this trip AISES will work collaboratively with CRST to provide a Family STEM Activity Night.

March – April 2017

- Students to participate and compete in the AISES science fairs (NAIVSEF and Energy Challenge), including Senior and Junior divisions.
- C-EB teachers to travel with robotics teams to competitions.
- C-EB teachers to continue in-class robotics curriculum.
- AISES and C-EB administrator and counselor to implement college preparation activities, including one college visit with a local AISES university chapter.

- CRST to conduct community outreach and promote support of the program among CRST parents and community members in general.
- CRST to review academic scholarship applications and select recipients.
- AISES staff to make one trip to C-EB schools to present 4 Power Up workshops and recruit students to participate in AISES science fairs (for the following year), as well as secure teachers as student project sponsors. During this trip AISES will work collaboratively with CRST to provide a Family STEM Activity Night.
- Administer post-program surveys.

#### Summer 2017

- AISES to compile and analyze pre- and post-program surveys in order to modify programs for the upcoming academic year.
- CRST to disburse academic scholarship funds to recipients.
- Meeting among AISES, CRST, and C-EB Schools representatives to talk about the previous academic year's lessons learned, best practices, and to plan for modifications to the programs and activities.

The following three academic years: 2017-2018, 2018-2019, and 2019-2020 will proceed in the same way as the timeline for 2016-2017 academic year described above. AISES, CRST, and C-EB administrators will continue to develop and re-design programming, survey material and curriculum so that tasks in the first year will continue to be relevant for subsequent years. Additionally, C-EB will continue to recruit new teachers to participate in the project's programs so that more teachers are exposed to important STEM capacity building activities.

**Timeliness and Budget.** The partners will work diligently to stay on time and within budget. Once an award is made, AISES will host a meeting via teleconference with the other partners in

order to finalize the above timeline and commit to all of the require responsibilities and action items to ensure the project starts quickly and with enough personnel to effectively implement the required programming to achieve the milestones described above. In order to ensure the project stays within budget, the attached budget narrative provides extensive detail pertaining to the use of all funds. The above timeline and budget narrative will be used in tandem to ensure the budget is spent and within the time frame established in the timeline. Furthermore, all of the partners will be made aware of their specific budget allocation and the responsibilities and programming they must achieve within the given budget. AISES has extensive experience managing program budgets and experience with the costs of implementing all of the proposed activities, and will therefore that the lead in ensuring the project stays within budget and is used correctly, as specified in the budget narrative.

**Performance Feedback and Assessment.** The project partners will work with an independent evaluator to provide performance feedback and assess the progress towards achieving the intended outcomes. In collaboration with the evaluator AISES, with input from the other partners, will develop surveys for each program or series of programs, as well as develop and administer yearly pre- and post- project surveys. The surveys will allow for evaluation on a timescale that allows for modification and improvement, as well as the ability to determine if objectives are being met. Additionally, AISES will track and evaluate participation in program activities after each event and biannually in order to ensure the proposed project is reaching the targeted number of students, teachers, and community members.

**Involvement of Indian Tribe and Parents.** The proposed project will directly involve the Cheyenne River Sioux Tribe, including tribal leadership, administrators, elders, parents, students, and community members in general. Given CRST is one of the project partners, tribal

involvement will be established and well known. CRST will be responsible for generating community interest and involvement in the project. AISES will work directly with CRST elders to create unique programming that incorporates Lakota culture and the Lakota language. CRST will also administer a STEM college scholarship fund, providing scholarships to CRST students majoring in STEM at accredited colleges, including non-traditional students and students from other schools besides C-EB High School. By developing a STEM college scholarship fund, CRST will encourage its students to pursue STEM degrees and build the capacity of the tribe to support its STEM college students . Furthermore, the proposed project will specifically target CRST parents through Family STEM Activity Nights. During these events, AISES will present an interactive and engaging STEM activity, inspiring not only students but parents and other community member participants. The purpose of STEM family nights are to encourage parents to support their students as they pursue a STEM education. However, for the proposed project, the partners also hope to encourage parents and community members to consider furthering their own STEM education, exposing them to the multitude of opportunities available to those with STEM degrees, as well as the positive effects of a STEM education on improving the CRST reservation and community.

**Project Sustainability.** The focus of this project is to build the STEM education capacity of C-EB Schools as well as to build the capacity of CRST to support its students in STEM as they prepare for college and careers. To create longer-term change in the ability of C-EB to provide innovative STEM curriculum and activities, C-EB teachers must receive trainings and support to institutionalize STEM education resources and activities. Although the support to implement the proposed programs will not continue after the grant ends, all of the program activities will continue as all programs are current and longstanding AISES programs. Therefore, by

developing this strong relationship between AISES and C-EB Schools, C-EB students and teachers will know of the various AISES programs and how to participate. The proposed project will bring a considerable amount of cutting-edge technology to C-EB schools including robotics kits of various types and operating devices (tablets). These resources as well as the teacher trainings and curriculum development resources will serve C-EB Schools for many years to come. Furthermore, AISES and the other project partners will pursue additional funding to help support the continuation of programming beyond the NYCP grant. The following are foundations who have supported or may be interested in supporting similar community education and workforce development initiatives: South Dakota Community Foundation, Northwest Area Foundation, John T. Vucurevich Foundation, and the CRST Tribal Ventures Program.

### **Project Evaluation**

In collaboration with an independent evaluator, the project partners will individually evaluate specific project programs as well as the effectiveness of the project itself. To lead this effort, the partners will employ Dr. Wren Walker Robbins as the project's independent evaluator. Dr. Robbins is partner in the Changing Communities consulting group. Changing Communities' mission is to build STEM education and research programs that engage and grow diverse learners through cross-cultural partnership development, cultural proficiency workshops, facilitated programming, coaching, and programming planning and evaluation. Dr. Robbins has expressed her willingness to serve as the independent evaluator to AISES staff. As a Mohawk scientist, educator, and long-time AISES member, Dr. Robbins has a multitude of experiences to aid in her evaluation of the project, ability to contribute toward improving program elements in order to meet desired objectives, and identify effective strategies to be disseminated and replicated.

All students, families, educators, and community members who participate in the project's various programs will provide pre- and post- evaluation surveys. The surveys will collect qualitative and quantitative data using open question formats combined with multiple choice questions with a series of rating questions using Likert scales to determine effective program methods and the extent to which the participants developed skills, learned new material, and engaged in the programming. For students, surveys will assess to what extent the programs and their content influenced their interest and competency in STEM concepts and subjects as well as interest in pursuing additional STEM-related education. These metrics will reveal whether or not the projects objectives are being met. Results from the surveys completed by educators will indicate to what extent the project's components are increasing the STEM capacity of C-EB Schools, a primary objective of the proposed project. Further data analysis will include tracking and statistical analysis of potential changes in the state measured performance metrics of C-EB Schools provided in annual school report cards generated by the South Dakota Department of Education.

Reports summarizing each year's surveys and assessment of progress will be produced at the end of each school year. The reports will present all quantitative and qualitative data, itemize and assess the success of project activities and ability to meet objectives, inventory internal and external project resources (financial and otherwise), and analyze project obstacles and how they were overcome or not. The reports will be disseminated nationally, particularly to other K-12 schools in the AISES network in order to share the community-building process of this project, resources developed and drawn upon, activities, lessons learned, and best practices that will assist other AI/AN communities in increasing students' access to and educators' capacity for

implementing STEM education. The partners will also use the reports to critique each year's programming and develop modifications that can be implemented each subsequent year.

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## Other Attachment File(s)

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\* **Mandatory Other Attachment Filename:**

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To add more "Other Attachment" attachments, please use the attachment buttons below.

**Description of the defined geographic area to be served.**

The Cheyenne River Sioux Reservation is comprised of two of the nation’s poorest counties (Dewey and Ziebach), and the reservation has few community resources, period – especially given its added disadvantage of isolation. The size of the state of Connecticut at 2.8 million acres, it lies on north-central South Dakota’s high prairie, more than 90 miles from the nearest city and 120 miles from the state’s primary interstate highway. The Cheyenne River Sioux reservation is part of the territorial lands of the Great Sioux Nation and was established under the Treaty of 1868. Comprised of four Bands of the Great Sioux Nation, the reservation is home to the Mnicoujou (Planters by the Water), the Siha Sapa (Black Foot), the Oohe Numpa (Two Kettle) and the Itazipco (Without Bows) bands of the Lakota Nation.



Figure 1. Map of South Dakota, designated in brown is the Cheyenne River Sioux Tribe reservation.

## **Needs Assessment or other Data Analysis**

In 2014, the Cheyenne River Tribal Ventures project, conducted a comprehensive survey to better understand the state of the CRST community. The Cheyenne River Voices: Our Survey, Our Voice, Our Way, Executive Summary Report, cites the following statistics relevant to the proposed project:

- In 2012-2014, CRST had 15,933 tribal members, with 70% of those members living on the reservation.
- In 2012-2014, the CRST reservation was home to 10,564 people, of which 8,556 were American Indian. Approximately 35% or 2,986 of the American Indian population living on the CRST reservation were between the ages of 5 and 18.
- The median annual income for the CRST reservation was \$18,156 or \$8.73hr. With few jobs available, two-thirds of the population survive on much less than one-third the average American income.
- The survey reported 47% unemployment, demonstrating that unemployment among CRST is extremely high. Of those unemployed, 42% are seeking employment and 18% are not presently seeking employment, 16% are disabled, 15% are retired, 9% are homemakers, and 2% were recently laid-off.
- Education levels of CRST members are very low. Of the 1,658 CRST members surveyed, 14% completed only elementary school, 11% completed only middle school or junior high school, 41% completed high school or passed the General Education Development (GED) exam, 5% earned their associate's degree, 17% have completed some college coursework, 4% have completed vocational programs, 6% have completed bachelor's degrees, and 3% have completed a master's degrees or other advanced degrees.

- 37% of 1,843 CRST family members surveyed were students.
- CRST members cited a lack of education and experience as barriers to employment.
- 44% of 1,169 non-student CRST members reported wanting to further their education.

## Native Youth and Community Projects (NYCP) Partners Agreement

### Partners

*Lead, Indian Organization:* American Indian Science and Engineering Society (AISES),

Program Director Dr. Kathy DeerInWater, Director of Special Projects and Research

*BIE School:* Cheyenne-Eagle Butte (C-EB) Schools, represented by Hilario (Larry) Mendoza, C-EB Superintendent

*Tribe:* Cheyenne River Sioux Tribe (CRST), represented by Ryman LeBeau, CRST Vice Chairman

### Goal and Objectives

The goal of the proposed project is to improve the college and career readiness of American Indian and Alaska Native (AI/AN) students, particularly in the fields of science, technology, engineering, and math (STEM).

The objectives of the proposed project are to:

1. Increase interest and engagement in STEM fields among AI/AN students on the Cheyenne River Sioux reservation;
2. Provide hands-on, engaging, and culturally relevant STEM programming; and
3. Involve AI/AN students, families, and community members in activities that will address the academic, social, financial, and cultural challenges to pursuing STEM degrees and careers.

### Responsibilities

The responsibilities of the American Indian Science and Engineering Society (AISES) include:

1. Work with cultural advisors from the tribe to develop culturally appropriate and meaningful STEM curriculum and programming;
2. Conduct outreach and recruitment with C-EB administration to identify teachers interested in participating in the proposed program;
3. Coordinate and/or conduct all necessary trainings to successfully introduce and implement curriculum and programming, specifically robotics and computing efforts, during in-school and out-of-school activities;
4. Provide Power Up Workshops throughout the academic year, presenting the scientific method, introducing and encouraging C-EB students to participate in AISES' STEM research opportunities including the Native American Indian Virtual Science and Engineering Fair (NAIVESEF), DOI funded Energy Challenge, and AISES National Conference research presentations;
5. Provide teacher support, in-person and through webinars, so they are able to successfully serve as science fair project sponsors and/or robotics coaches;
6. Provide and coordinate travel scholarships for High School seniors and juniors to attend the AISES National Conference;

7. Work with C-EB to build the capacity of teachers and administrators to provide advanced, cutting-edge STEM curriculum and activities that extend beyond the life of this grant;
8. Work with C-EB to build the capacity of teachers and administrators to provide resources and opportunities to prepare AI/AN students for college, including:
  - a. Promoting college matriculation (i.e. college visit trips, events with AISES college chapters, college fairs)
  - b. Scholarship opportunities; collaborate to develop scholarship resources with geographic focus
  - c. Assistance with college preparation (i.e. ensure STEM proficiency)
9. Work with the tribe to build capacity to encourage and support AI/AN students to pursue college and advanced degrees in STEM fields, including:
  - a. Engaging parents and community members as the first line of support (i.e. family nights involving STEM activities, financial preparation, and college preparedness)
  - b. Developing tribal STEM scholarship program (i.e. provide academic scholarships for tribal members)
  - c. Developing a STEM mentorship program within the tribe including, events with tribal elders and leadership

The responsibilities of Cheyenne River Sioux Tribe (CRST) include:

1. Provide cultural advisors to work with AISES to develop culturally appropriate and meaningful STEM curriculum and programming;
2. Conduct community outreach and recruitment for Family STEM Activity events;
3. Provide facilities and hospitality for Family STEM Activity events;
4. Help to advertise and promote the proposed programming throughout the community;
5. Work with the AISES to build capacity to encourage and support AI/AN students to pursue college and advanced degrees in STEM fields, including:
  - a. Engaging parents and community members as the first line of support (i.e. family nights involving STEM activities, financial preparation, and college preparedness)
  - b. Developing tribal STEM scholarship program (i.e. provide academic scholarships for tribal members)
  - c. Developing a STEM mentorship program within the tribe including, events with tribal elders and leadership

The responsibilities of Cheyenne-Eagle Butte (C-EB) Schools include:

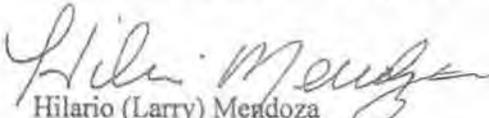
1. Conduct outreach and recruitment with AISES within the schools to identify teachers interested in participating in the proposed programs;
2. Provide rooms and meeting space for proposed programs that occur at C-EB schools;
3. Ensure teachers and students are allowed the time away from school to participate in the AISES National Conference;
4. Work with AISES to build the capacity of teachers and administrators to provide advanced, cutting-edge STEM curriculum and activities that extend beyond the life of this grant;
5. Work with AISES to build the capacity of teachers and administrators to provide resources and opportunities to prepare AI/AN students for college, including:

- a. Promoting college matriculation (i.e. college visit trips, events with AISES college chapters, college fairs)
- b. Scholarship opportunities; collaborate to develop scholarship resources with geographic focus
- c. Assistance with college preparation (i.e. ensure STEM proficiency)

Partner Signatures

(b)(6)

Dr. Kathy DeerInWater  
Proposed Program Director  
AISES Director of Special Projects and Research

  
Hilario (Larry) Mendoza  
Cheyenne-Eagle Butte Schools  
Superintendent

(b)(6)

Ryman LeBeau  
Cheyenne River Sioux Tribe  
Vice Chairman

## Evidence of Capacity

Since 1977, AISES has worked to substantially increase AI/AN representation in STEM fields as students, professionals, mentors, and leaders. AISES nurtures community-building by bridging science and technology with traditional Native American values. AISES employs a "full circle of support" model that begins with pre-college programs, progresses into collegiate life, and then into the professional years of members and on into retirement. AISES is the only professional society established by and for AI/AN that specifically emphasizes lifelong learning and educational achievement by utilizing cultural aspects with STEM.

AISES flourishes with more than 1,500 professional members, over 1,500 student members, 189 college chapters, 15 professional chapters, 170 affiliated K-12 schools, and over 5,000 scholarship awards totaling \$10.2 million. AISES is the undisputed leader in STEM opportunity in Indian Country. Members from over 200 tribal nations are represented within AISES, and AISES enjoys the support and partnership of tribes, schools, universities, other nonprofit organizations, corporations, foundations and government agencies. During the past year among other achievements, AISES served over 2,500 Native students and professionals through: numerous events that provided networking opportunities and education; provided scholarships to college/university students in financial need; networking together professional and academic mentors with students at varying levels; recognizing and furthering the careers of cutting-edge Native STEM professionals; and sparking the interest in and love of science and related fields with students of all ages. AISES has been the nurturing force for many of these young people and adults whose accomplishments are positive role models for the Native youth following in their footsteps.

AISES successfully manages several grants and cooperative agreements from U.S. federal

agencies, foundations and corporations. AISES operates in accordance with local, state and federal laws.

AISES is in compliance with financial and program reporting requirements for its federal awards which currently include the National Science Foundation, Central Intelligence Agency, US Navy, Naval Sea Systems Command, Navy Civilian Careers, USDA Natural Resources Conservation Service, Environmental Protection Agency, NASA, Bureau of Land Management, and U.S. Department of Energy.

Staff allocated for this project are experienced project managers and are already on board to move forward the project when it is funded.

Kathy DeerInWater, PhD (Cherokee), Director of Special Projects and Research, will oversee program development and delivery, project evaluation and the development of the final report. Kathy oversees the program development, implementation, and reporting for all AISES special projects from the National American Indian Virtual Science and Engineering Fair (NAIVSEF) to our current Robotics initiatives. In addition, Kathy is the PI or program director on all research grant projects such as the National Science Foundation funded “Lighting the Pathway to Faculty Careers for Natives in STEM” project. The Special Projects and Research department also includes all AISES’ research and academic interests, government agency relations, and the Academic Advisory Council.

Kathy has been a student member of AISES since 2007 and joined the AISES staff in October of 2014. She completed her Doctoral degree in Ecology at the University of California, Davis in September 2015. Kathy is able to bring first-hand experience to her role in assisting STEM students interested in research and academia. Her expertise in research including experimental design, analyses, writing, and reporting enable AISES to develop a research program as well as

effectively evaluate and improve its programs. She will devote 10% of her time annually to this project.

Kellie Jewett-Fernandez (Cheyenne River Sioux), Director of Business and Program

Development will work closely with Dr. DeerInWater to develop and deliver programming to youth on Cheyenne River. Kellie will work directly with tribal and school leadership, to assess needs for program, integrate cultural activities and evaluate success of program. Kellie joined AISES in May of 2015. She works closely with AISES' many partners and is responsible for managing a number of STEM outreach programs within tribal communities. Kellie has a rich background in working with non-profits. Prior to joining AISES, Kellie was Development Director for the Cheyenne River Youth Project, a grass-roots youth organization located in her tribal community. She has also served as the Associate Director of Entrepreneurship and Enterprise Development for First Nations Oweesta Corporation. As Manager of Scholarships for the American Indian College Fund, Kellie administered more than \$4 million in scholarship funds each year. Kellie received her BA in Communications from the University of Minnesota and holds a Master of Business Administration (MBA) with a focus on American Indian entrepreneurship from Gonzaga University. She grew up on the Cheyenne River Lakota (Sioux) reservation, but has called Colorado home for many years. Kellie will devote 10% of her time to this project.

Direct program administration will be managed by AISES Program Officer. The position is currently vacant. Program Officer will spend 25% of their time working on this particular project. Representing the Cheyenne River Sioux Tribe is Ryman G. LeBeau. Mr. LeBeau has served CRST as a District 5 Council Representative since 2008. In 2014, he was appointed Vice Chairman. Other roles he's held on council include Chair of the Alcohol and Beverage Control

Commission, Environment/Land & Natural Resources Committee Chairman, and Economic Development Committee Chair. Mr. LeBeau has also been a member of the Native American Employment and Training Council. Receiving his Bachelor of Science in Environmental Science with a minor in Biology, Mr. LeBeau has also worked as a Wildlife Biologist for the Native American Fish and Wildlife Society. He also completed the Native Nation Rebuilders program in 2013. Mr. LeBeau is committed to education and will assist AISES to deliver STEM programming through this project.

C-EB School Superintendent, Hilario (Larry) Mendoza has over 45 years of experience in education as a teacher, consultant, coach and administrator. Mr. Mendoza has successfully administered a variety of federal and tribal grants in his various roles at Takini School, Little Wound Elementary School and Cheyenne-Eagle Butte Schools. With a master's degree in Elementary Education with an Administrative Endorsement, Larry will remain the lead program partner at the C-EB schools and will be responsible for engaging educators to deliver programming and implementing STEM curriculum and AISES programs into the current offerings at C-EB.

The appendices include staff resumes.

## **Evidence of Involvement of Indian Tribes and Parents**

The proposed project will directly involve the Cheyenne River Sioux Tribe, including tribal leadership, administrators, elders, parents, students, and community members in general. Given CRST is one of the project partners, tribal involvement will be established and well known. CRST will be responsible for generating community interest and involvement in the project. AISES will work directly with CRST elders to create unique programming that incorporates CRST culture and the Lakota language. Furthermore, the proposed project will specifically target CRST parents through Family STEM Activity Nights. During these events, AISES will present an interactive and engaging STEM activity, inspiring not only students but parents and other community member participants. The purpose of STEM family nights are to encourage parents to support their students as they pursue a STEM education. However, for the proposed project, the partners also hope to encourage parents and community members to consider furthering their own STEM education, exposing them to the multitude of opportunities available to those with STEM degrees, as well as the positive effects of a STEM education on improving the CRST reservation and community.

## Demonstration of Research Basis

The following references served as the research basis for the proposed project:

1. Marie C. Stetset & Robert Stillwell, National Center for Education Statistics, U.S. Department of Education, Public High School Four-Year On-Time Graduate Rates and Event Dropout Rates: School Years 2010-2011 & 2011-2012.  
<http://nces.ed.gov/pubs2014/2014391.pdf>
2. Office for Civil Rights, U.S. Department of Education, Issue Brief No. 3, Data Snapshot: College and Career Readiness. <http://www2.ed.gov/about/offices/list/ocr/docs/crdc-college-and-career-readinesssnapshot.pdf>.
3. Laura G. Knapp, et al. National Center For Education Statistics, U.S. Department of Education, Enrollment in Postsecondary Institutions, Fall 2010; Financial statistics, Fiscal Year 2010; and Graduation Rates, Selected Cohorts, 2001-2001.  
<http://nces.ed.gov/pubs2012/2012280.pdf>.
4. U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), various years, 2005-2011 Mathematics Assessments.  
[http://nces.ed.gov/pubs2008/nativetrends/ind\\_4\\_3.asp](http://nces.ed.gov/pubs2008/nativetrends/ind_4_3.asp)
5. U.S. Bureau of Indian Education, Division of Performance and Accountability, Bureau-Wide Annual Report, 2012-2103.  
<http://www.bie.edu/cs/groups/xbie/documents/text/idc1-026197.pdf>
6. American College Testing (ACT), The Condition of College and Career Readiness, 2012.  
<http://www.act.org/research-policy/college-career-readiness-report-2012>.
7. National Science Foundation (NSF), National Center for Science and Engineering Statistics. 2013. Women, Minorities, and Persons with Disabilities in Science and Engineering: 2013. Special Report NSF 13-304. Arlington, VA. Available at  
<http://www.nsf.gov/statistics/wmpd>
8. Epstein, Jennifer, Graduation Gaps for Science Majors, Inside Higher Ed, February 17, 2010. <http://www.insidehighered.com/news/2010/02/17/stem>
9. Tribal Ventures, Cheyenne River Voices: Our Survey, Our Voice, Our Way, Executive Summary Report, 2012-2014.
10. South Dakota Student Teacher Accountability and Reporting System (STARS), South Dakota Department of Education 2014-2015 Report Cards  
C-EB Primary School:  
<http://www.doe.sd.gov/NCLB/reports/2015/reportcard/2015school20001-02.pdf>  
C-EB Upper Elementary School:  
<http://www.doe.sd.gov/NCLB/reports/2015/reportcard/2015school20001-03.pdf>  
C-EB Junior High School:  
<http://www.doe.sd.gov/NCLB/reports/2015/reportcard/2015school20001-06.pdf>  
C-EB High School:  
<http://www.doe.sd.gov/NCLB/reports/2015/reportcard/2015school20001-01.pdf>

11. Barker, Bradley S., and John Ansorge. "Robotics as means to increase achievement scores in an informal learning environment." *Journal of Research on Technology in Education* 39.3 (2007): 229-243.

## **Description of Continuing Activities**

Below is a brief overview of the various AISES continuing events and programs the project proposes to implement in collaboration with C-EB Schools and CRST:

### **AISES Events**

AISES National Conference: The National Conference, held annually since 1978, is a one-of-a-kind, three-day event convening graduate, undergraduate, and high school junior and senior students, teachers, workforce professionals, corporate partners, and all members of the “AISES family” for professional development, networking opportunities, student presentations, the largest career fair in Indian Country, awards, and traditional Native American cultural events. The Conference will provide strong educational and professional development resources to the student participants. The conference also includes a poster and oral research presentation competition for students, creating opportunities for deep STEM learning, discovery, and exchange.

### **AISES Programs**

POWER UP workshops: AISES’ half-day POWER UP workshops increase middle and high school students’ and their educators’ knowledge of the scientific method and proper research techniques while introducing them to AISES’ educational events such as the Virtual Science and Engineering Fair. At these workshops, students, and educators can gain new knowledge, learn about appropriate ways to conduct scientific research, and participate in quality programs that are designed to drive student success in STEM.

National American Indian Virtual Science and Engineering Fair (NAIVSEF): up to 100 students in grades 5-12 participate as individuals or as teams of two (with teams having at least one Native American member) in meaningful experiments and presentations that will spark their interest in and excitement around STEM. The goal is to increase Native American middle and high school participation in STEM education through age-appropriate science fair competitions. AISES hosts competitive, virtual science fairs and provides travel funding for high school students with winning projects to participate in the Intel International Science and Engineering Fair (Intel ISEF), the world’s largest international pre-college competition.

Energy Challenge: The Energy Challenge is an energy-specific science fair designed to engage and encourage high school and middle school students to participate in Science, Technology, Engineering, and Mathematics (STEM) education through a creative, hands-on, problem solving, engineering process in an environment similar to a science fair. This opportunity is funded by the Department of Interior, Office of the Assistant Secretary of Indian Affairs (AS-IA), Indian Energy and Economic Development (IEED), Division of Energy and Mineral Development (DEMD).

Robotics Program: AISES will provide support at a local level to seed robotics engagement across the school system. We currently offer the following robotics and wish to offer to C-EB students at appropriate age levels: LEGO Robotics, VEX Robotics, and Sphero Robotics and computing. Activities will be conducted during in-class and out-of-class time, encouraging the incorporation of robotics into the science and technology curriculum.

# Kathy M DeerInWater

(b)(6)

American Indian Science and Engineering Society  
Director of Special Projects and Research

(b)(6)

## EDUCATION

**Ph.D., Population Biology**, University of California at Davis, September 2015 (GPA 4.0).  
Advisors: Richard Karban and Andrew Sih

**Bachelor of Arts, Environmental Studies**, Yale University, June 2010 (GPA 3.69).

## EXPERIENCE

**Director of Special Projects and Research**, AISES, 10/2014-Present

Conduct program initiatives and oversee research related to advancing the academic and career paths of American Indian, Alaska Native, and Native Hawaiian (AI/AN/NH) students and professionals in science, technology, engineering, and math (STEM) disciplines. Provide oversight, strategic leadership, management, and direction for the organization's research and program initiatives. This department is an integral part of the senior management and is responsible for cultivating an entrepreneurial, results-oriented culture within the organization for its support of AI/AN/NH STEM students and professionals and for conducting and disseminating research.

**Doctoral Research**, UC Davis, 09/10-Present.

Investigated the use of plant volatiles by herbivores as a source of information for making complex host-plant selection decisions. Developed methodology for and conducted behavioral assays in both the laboratory and field, learned and used Bayesian statistics to analyze data, and am currently writing the results for publication. Collaborations with other graduate students and faculty have focused primarily on the affect of plant defense traits on herbivore behavior, growth, and population dynamics. Supervised and mentored two underrepresented minority students as research assistants for multiple projects of my dissertation and their own independent research.

Funding Sources: NSF-GRFP, Ford Foundation Predoctoral Fellowship, Center for Population Biology Research Awards, Jastro Shields Graduate Research Award.

**Graduate Student Researcher**, Graduate Diversity Officer for STEM disciplines, UC Davis, 07/14-06/15.

Improve the recruitment and retention of underrepresented graduate students by assisting in the research, development, and execution of community building and professional development activities, contributing to an alumni tracking database, and serving as a liaison for graduate student organizations.

**Program Coordinator**, Graduate Academic Achievement and Advocacy Program (GAAAP), UC Davis, 04/14-06/15.

Develop and implement programming dedicated to empowering and retaining underrepresented graduate and professional students through community building, academic support, and mentorship.

**Co-President**, American Indian Science and Engineering Society (AISES), UC Davis, 09/12-06/15.

Co-chaired the UC Davis Chapter of AISES along with an undergraduate student. Organized and conducted meetings, fundraised on average \$2500 per year, initiated new contacts and maintained long-standing relationships with corporate and federal agency sponsors, and facilitated community building

and interaction with other Native American student groups on campus to increase recruitment and retention of Native American students in STEM disciplines.

**Mentor and Teaching Assistant**, Career Discovery Group Program in the College of Agricultural and Environmental Sciences, UC Davis, 09/13-06/14.

Mentored fifteen students, primarily from STEM majors, throughout their freshman year of college, focusing on exploring career options, identifying skills and values, and professional development.

**Teaching Assistant**, Terrestrial Field Ecology, UC Davis Bodega Bay Marine Lab, 03/13-06/13.

Assisted eight graduate students during a week long intensive field ecology course as they developed, conducted, and analyzed independent projects.

**Teaching Assistant**, Biological Sciences 2B Ecology and Evolution, UC Davis, 01/11-06/11.

Taught the lab portion of the introductory biology series to 50 students for two quarters. Instructed lab activities, graded homework, and facilitated class discussion and participation.

**Undergraduate Research**, Yale University, 06/09-06/10.

Independently conducted a field experiment investigating the effect of habitat complexity on predator-prey interactions, measuring prey growth and survival.

Funding Sources: Yale Environmental Studies Summer Research Fellowship, Yale Science and Engineering Society Summer Research Grant, Pierson College Summer Fellowship Award.

**Research Assistant**, Yale University, 06/08-06/10.

Conducted fieldwork from construction to take down of multiple projects within a New England old-field ecosystem. Laboratory work consisting of grasshopper dissection, use of 3-D imaging microscopy to measure morphological differences between treatments, C/N analysis, and measuring metabolic rates of grasshoppers in response to acute and chronic predation risk.

Supervisor: Dr. Oswald Schmitz

**Vice President**, Association of Native Americans At Yale (ANAA), Yale University, 09/08-05/09.

Planned and organized meetings, social events, panels, and speaker programs designed to encourage the participation of Native American students on campus and to promote the cultural awareness of indigenous peoples at Yale.

**Research Assistant**, University of Oklahoma School of Civil Engineering and Environmental Science, 01/07-06/07.

Prepared and conducted various tests on extended surfactants in order to understand their application toward oil spill remediation.

Supervisor: Dr. David Sabatini

**Environmental Science Intern**, BP North American Gas Environmental Team, 06/07-08/07.

Created Environmental Notification Guidebooks for both Colorado and Wyoming. Extensively reviewed federal, state, and tribal legislation pertaining to oil and gas spills/releases and recovery.

**Summer Intern**, Tulsa Metropolitan Environmental Trust, 06/07-08/07.

Researched residential composting of yard waste in order to formulate a program for Tulsa County.

## FELLOWSHIPS & SCHOLARSHIPS

- The National Science Foundation Graduate Research Fellowship (NSF-GRFP), 2011-2016.
- Ford Foundation Predoctoral Fellowship, 2011-2016.

- The Gilman Ordway Family Scholarship, 2009-2010.
- General Motors Minority Engineering and Science Scholarship Program, 2007-2009.
- Cherokee Nation Scholarship, 2007-2008.

## **PUBLICATIONS**

**Hughes, K.M.**, Pearse, I.S., Grof-Tizsa, P., and R. Karban. 2015. Individual-level differences in generalist caterpillar responses to a plant-plant signal. *Ecological Entomology* 40:5 612-619.

**Eaton, K.M.** and R. Karban. 2014. Effects of trichomes on the behavior and distribution of *Platyrepia virginalis* caterpillars. *Entomologia Experimentalis et Applicata* 151:2 144-151.

Pearse, I.S., **Hughes, K.**, Shiojiri, K., Ishizaki, S., and R. Karban. 2013. Interplant volatile signaling in willows: revisiting the original talking trees. *Oecologia* 172:3 869-875.

Hawlana, D., **Hughes, K.**, and O. Schmitz. 2011. Trophic trait plasticity in response to changes in resource availability and predation risk. *Functional Ecology* 25:6, 1223-1231.

## **PRESENTATIONS**

Eaton, K. M. Role of plant volatiles in herbivore preference and decision-making. Presented at the 2014 Annual Meeting of the Ecological Society of America, Sacramento, CA.

Hughes, K. M. Spider mite attraction to herbivore induced plant volatiles resulting from damage by conspecifics (Poster). Presented at the 2013 Gordon Research Conference Plant-Insect Interactions Meeting, Ventura, CA.

Hughes, K.M. Spider mite attraction to herbivore induced plant volatiles resulting from damage by conspecifics. Presented at the 2012 American Indian Science and Engineering Society National Conference, Anchorage, AK.

## **PROFESSIONAL AFFILIATIONS**

American Indian Science and Engineering Society  
Ecological Society of America



## RESUME

### PERSONAL INFORMATION

Name: Hilario (Larry) G. Mendoza, Jr.  
Address: (b)(6)  
Phone:   
Race: American Indian/Chicano Tribe: Cheyenne River Sioux  
DOB: March 28, 1944  
School: Cheyenne River Agency School, Stephan Indian Mission, and Immaculate Conception High School

### PROFESSIONAL PREPARATION

Undergraduate: Black Hills State University, Spearfish, SD  
BS Elementary Education 1972  
Graduate: Black Hills State University, Spearfish, SD  
MS Elementary Education 1974  
University of South Dakota, Vermillion, SD  
Administrative Endorsement 2000

### PROFESSIONAL EXPERIENCE

Teacher Corps Classroom Teacher/Intern, August of 1970-May of 1972  
Cheyenne Eagle Butte Elementary School, Eagle Butte, SD  
Responsibilities: Team-Taught in Kindergarten classroom; Team-Taught in 4<sup>th</sup>/5<sup>th</sup>/6<sup>th</sup>  
Grade Classroom  
40 hours a week in classroom and instructional meetings  
Supervisors: Trula Fields, Team Leader, and Dr. Ken Engelhardt, Director  
Dr. Engelhardt's Phone Number: (928) 300-0504  
Current Address of Dr. Engelhardt: 350 Van Deren Road, Sedona, AZ 86336

Teacher Corps Community Development Specialist, June of 1972-June of 1973  
Black Hills State University, Spearfish, SD  
Responsibilities: Designed and implemented community development for reservation schools involved in Teacher Corps  
20 hours of administration, 20 hours of community development/workshops  
Supervisor: Dr. Ken Engelhardt, Director  
Dr. Engelhardt's Phone Number: (928) 300-0504  
Current Address of Dr. Engelhardt: 350 Van Deren Road, Sedona, AZ 86336

Teacher Corps Associate Director, July of 1973-June of 1976  
Black Hills State University, Spearfish, SD

Responsibilities: Provided instruction and mentoring to undergraduate and graduate students in Teacher Corps

20 hours of administration, 20 hours of contact time with students

Supervisor: Dr. Ken Engelhardt, Director

Dr. Engelhardt's Phone Number: (928) 300-0504

Current Address of Dr. Engelhardt: 350 Van Deren Road, Sedona, AZ 86336

Teacher Corps Director, July of 1976-June of 1979

Black Hills State University, Spearfish, SD

Responsibilities: Administrative duties; i.e., formulated and monitored budget, insured compliance with federal/state/local regulations

40 hours of administration

Supervisor: Dr. Lincoln Henry, Department Chairman

Dr. Henry is deceased

Education Consultant, July of 1979-June of 1980

First American Associates, Spearfish, SD

Supervisors: Dr. Karen Swisher, Joyce Knows His Gun, and Larry Mendoza

President and Manager, July of 1979-April of 1984

First American Athletics, Inc., DBA Bear Butte Sports, Spearfish, SD

Supervisor: Larry Mendoza

Owner and Manager, March of 1984-July of 1985

Mendoza Athletics & Custom Silk Screening, Spearfish, SD

Supervisor: Larry Mendoza

CEO/Teacher, August of 1985-May of 1987; CEO, June of 1987-June of 1989

Red Scaffold School, Red Scaffold, SD

Responsibilities: Taught 7<sup>th</sup> and 8<sup>th</sup> Grade Industrial Arts/Mechanical Drawing

20 hours of administration/20 hours of teaching

Supervisor: Bryan Charging Cloud, School Board President

Phone Number: (605) 365-7838

Current Address of Mr. Charging Cloud: Manderson, SD 57756

Elementary Principal, July of 1989-June of 1991

Takini School, Takini, SD

Responsibilities: Overall administration of school to meet standards and regulations of Federal, State, Tribal, and Local governments

40 hours of administration

Supervisor: Dr. Ken Engelhardt, Superintendent

Dr. Engelhardt's Phone Number: (928) 300-0504

Current Address of Dr. Englehardt: 350 Van Deren Road, Sedona, AZ 86336

Special Services/Athletic Director, July of 1991-June of 1993

Takini School, Takini, SD

Responsibilities: Coordinated, scheduled, and monitored extra-curricular activities to meet SDHSAA ( South Dakota High School Activities Association) standards

40 hours of administration

Supervisor: Dr. Ken Engelhardt, Superintendent

Dr. Engelhardt's Phone Number: (928) 300-0504

Current Address of Dr. Engelhardt: 350 Van Deren Road, Sedona, AZ 86336

Director of Operations & Management (Facilities and Transportation)/Special Projects,  
July of 1994-February of 1997

Takini School, Takini, SD

Responsibilities: Administration of Support Services; i.e., Food Service, Transportation,  
O & M to meet federal, state, and local standards

40 hours of administration

Supervisor: Dr. Ken Engelhardt, Superintendent

Dr. Engelhardt's Phone Number: (928) 300-0504

Current Address of Dr. Engelhardt: 350 Van Deren Road, Sedona, AZ 86336

Elementary Principal, (Pre-K – Grade 6), February of 1997-June of 2002

Little Wound Elementary School, Kyle, SD

Responsibilities: Instructional leadership to meet federal, state, and local standards,  
especially NCLB (No Child Left Behind) legislation

40 of administration

Supervisor: Linda Hunter, Superintendent

Linda Hunter's Phone Number: (605) 455-2461

Address: Kyle, SD

CEO/Elementary and Secondary Principal, July of 2002-November of 2007

Takini School, Takini, SD

Responsibilities: Instruction leadership to meet federal, state, and local standards,  
especially NCLB legislation

Supervisor: Al Lone Eagle, School Board President

Retired in November 2007 to care for granddaughter and uncle

Retired – November 2007 to August 2009

Athletic/Activities Director, Cheyenne-Eagle Butte Schools, Eagle Butte SD. August 2009 to Present.

Responsibilities: Coordinated and scheduled all athletic and extracurricular activities K – 12 grades, this included scheduling all games, officials, transportation, meals, activity calendar, and facility use.

Supervisor: Dora Gwin, HS Principal 605-964-8744

Cheyenne-Eagle Butte, BIE School Supervisor, August 2015 to Present.

Responsibilities: Overall supervision of the BIE Cheyenne-Eagle Butte Schools staff which included education, transportation, foodservice, dorms, support, custodial and facility. CEB has over 1200 students and over 200 staff. I was detailed into this position due to BIE not being able to hire a person for position.

Supervisor: Mr. Eric North, BIE ELO West Region. Cell 505-554-8073, W505563-5118

## References

Dr. Cherie Farlee, CRST Education Director  
Cheyenne River Agency, Eagle Butte SD

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Linda Hunter, Superintendent  
Takini School, Howes SD

(b)(6)

Carol Veit, Superintendent  
Eagle Butte School 20-1

(b)(6)

# Ryman LeBeau

(b)(6)

## Education

Haskell Indian Nations University, Lawrence, KS

Bachelor of Science; School of Arts and Science

Major: Environmental Science minor in Biology completed Fall 2003

Native Nation Rebuilder Cohort 3 - Successfully completed December. 2013

Bush Foundation

## Work Experience

Native American Fish & Wildlife Society, Denver, CO Jan. 2004 - Nov. 2008

Employed as a Wildlife Biologist which included working for tribes throughout the United States. Provided training to tribes for wildlife management and planning.

Successfully completed program deliverables and met requirements under two different grants.

## Leadership Experience

Cheyenne River Sioux Tribal Council

District 5, Eagle Butte SD

Elected Dec. 2008 - Nov. 2012

Re-elected Dec. 2012 to Present

Vice Chairman Dec. 2014 to Present

Alcohol Beverage Control Commission Chairman

Spring 2009 - 2012

Environment/Land & Natural Resources Committee Chairman

December 2008 - Present

Economic Development Committee Chairman

December 2012 - Present

Native American Employment and Training Council  
Washington DC, June 2010- June 2012

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**EDUCATION**

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GONZAGA UNIVERSITY — SPOKANE, WA

**Master of Business Administration, 2011**

UNIVERSITY OF MINNESOTA — MORRIS, MN

**B.A. Speech Communications, 2000**

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**SKILLS and QUALIFICATIONS**

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- Extensive experience working in national and grassroots non-profit organizations
  - Experience in developing, managing and monitoring program and organization budgets
  - Experience in fundraising/grant writing, program development, grant management, program evaluation and event coordination
  - Experience in scholarship administration, student advising, Native American student programs
  - Native American community development and leadership development trainer and facilitator
  - Excellent communication skills, computer knowledge and ability to manage and work with others
  - Knowledge of diverse communities in particular, Native American communities (specifically regarding education, community/economic development, asset building, health and wellness, and youth development)
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**WORK EXPERIENCE**

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AMERICAN INDIAN SCIENCE AND ENGINEERING SOCIETY – LONGMONT, CO

**Director of Business and Program Development, 05/2015 – Present**

- Responsible for managing relationships with corporate and other AISES partners
  - Manages outreach programs including coordination and delivery to assure successful outcomes
  - Develops conferencing and fund development initiatives to support organizational mission
  - Works with executive staff and board to develop and achieve annual revenue goals
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CHEYENNE RIVER YOUTH PROJECT – EAGLE BUTTE, SD

**Development Director, 01/2012 – Present**

- Responsible for donor relations, grant development, submission and reporting
- Responsible for developing and managing program and organizational budgets as well as overseeing program activities
- Works with staff to evaluate and analyze programs
- Coordinates all Board related activities and correspondence
- Assists in youth programming and marketing
- Provides guidance and support on all social enterprise activities include café, farmers market and gift shop

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FIRST NATIONS OWEESTA CORPORATION – LONGMONT, CO

**Entrepreneurship and Enterprise Development Associate Director**, 01/2010 to 1/2012

**Entrepreneurship and Enterprise Development Manager**, 04/2008 to 01/2010

- Responsible for the development, expansion and ongoing management of Oweesta's Entrepreneurship and Enterprise Development program
- Provided customized entrepreneurship and enterprise development training and technical assistance to Native constituents
- Managed staff, consultants, private contracts, program budgets, program marketing, reporting, and evaluation

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AMERICAN INDIAN COLLEGE FUND - DENVER, CO

**Scholarship Manager**, 01/2005 to 04/2008

**Scholarship Coordinator**, 09/2002-01/2005

**Scholarship Administrative Assistant**, 10/2001-09/2002

- Responsible for development and management of scholarships programs totaling over \$4 million annually
- Administered multiple programs by recruiting applicants, processing applications, coordinating scholarship selection processes, corresponding with financial aid officers, mentoring students, disbursing awards, administering student retention programs, managing student leadership program, development of scholarship database and online application system, tracking and logging information for fundraising and reporting purposes
- Developed strong relationships with students, financial aid and registrars offices at tribal and mainstream colleges throughout the United States
- Participated and presented at numerous conferences including AIHEC (American Indian Higher Education Consortium), NIEA (National Indian Education Association) and AISES (American Indian Science and Engineering Society)
- Served on the scholarship selection committee for the Coca Cola Scholarship Program

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NATIVE AMERICAN RIGHTS FUND - BOULDER, CO

**Development Administrative Assistant**, 03/2001 to 10/2001

- Assisted development department with current and potential donor correspondence, direct mail processing and gift acknowledgement, donor research, grant proposals and other fundraising efforts

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PRAIRIE STAR GALLERY - SIOUX FALLS, SD

**Sales Associate**, 09/2000 to 03/2001

- Assisted customers regarding fine art purchases
- Promoted gallery and artists
- Managed store inventory

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SAINT PAUL PIONEER PRESS - ST. PAUL, MN

**Intern Staff Reporter**, 06/2000 to 08/2000

- Reported local news on general assignment team.

# Jill Daye Kessler

## Education

2004-2007 South Dakota State University Brookings, SD

### **Master of Science Degree in Counseling & Human Resource Development**

- Endorsement in School Counseling and Course Work Completion in Postsecondary Student Affairs
- CACREP Accredited Counseling & Human Resource Development Program
- GPA: 4.0

2000-2004 University of Minnesota-Morris Morris, MN

### **Bachelor of Arts Degree in Liberal Arts of the Human Services (Minor: Indian Studies)**

- GPA: 3.5

1996-2000 Cheyenne-Eagle Butte Schools Eagle Butte, SD

### **High School Diploma**

## Employment

01/2010-Present Bureau of Indian Education Eagle Butte, SD

### **Certified School Counselor, Cheyenne-Eagle Butte High School**

- Responsible for the design and implementation of a comprehensive school counseling program to serve students in 9<sup>th</sup>-12<sup>th</sup> grade. Services include developmental academic counseling, individual counseling, and consultation/referral services.
- Site Coordinator for the SD College Access Grant and the SD Gaining Early Awareness & Readiness for Undergraduate Programs.

10/2013-Present Cheyenne-Eagle Butte School District Eagle Butte, SD

### **Assistant Junior High Girls Basketball Coach**

- Currently responsible for the overall coordination of the Junior High Girls Basketball program which includes building and maintaining relationships with the team members while supporting them in their academic and athletic activities, scheduling and conducting practice, tracking inventory of athletic uniforms and equipment, serving as head coach for this team and the assistant coach for the head coach.

Summer 2013 College Horizons Albuquerque, NM

### **Staff Member, 2013 College Horizons at New York University**

- Responsible for carrying out organized activities and lessons geared towards the college admissions process. CH is a program for American Indian high school students.

01/2009-03/2013 Cheyenne-Eagle Butte School District Eagle Butte, SD

### **Assistant Girls Varsity Basketball Coach**

- Currently responsible for the overall coordination of the Junior

varsity team which includes building and maintaining relationships with the team members while supporting them in their academic and athletic activities, scheduling and conducting practice, tracking inventory of athletic uniforms and equipment, serving as head coach for this team and the assistant coach for the varsity team.

09/2007-01/2010 Bureau of Indian Education Eagle Butte, SD

**Certified School Counselor, Cheyenne-Eagle Butte Primary School**

- Was responsible for the design and implementation of a comprehensive school counseling program to serve students in K-2. Services included developmental classroom guidance, individual counseling, group counseling, and consultation/referral services.

**Professional memberships**

South Dakota Counseling Association (2004-Present)

South Dakota School Counseling Association (2004-Present)

- 2012-14 – Secondary Vice-President

South Dakota Indian Counseling Association (2004-Present)

**Awards received**

2012 Graduate Horizons Program Participant

2005-2007 Joyce M. Ashley Scholarship Recipient

2004-2005 Helen Roberti Scholarship Recipient

2004 University of Minnesota-Morris Chancellor Award Recipient

2003-2004 Indian Health Services Pre-Professional Scholarship Recipient

2002 Salt Springs Cultural Award Recipient

**References**

Ruth Harper, Professor of Counseling and Human Resource Development/South Dakota State University  
(605) 688-4364 or ruth.harper@sdstate.edu

Larry Keller, Assistant Principal/Cheyenne-Eagle Butte Schools  
(605) 964-2702 or larry.keller@k12.sd.us

Jodi Stoddard-Herber, Certified School Counselor/South Dakota College Access Grant Project Coordinator  
(605)685-8003 or jodi.stoddard.herber@gmail.com

## **Documentation of Indian Organization**

The American Indian Science and Engineering Society (AISES) is an Indian Organization meeting all of the below requirements for this designation:

Indian organization means an organization that—

(1) Is legally established—

(i) By tribal or inter-tribal charter or in accordance with State or tribal law; and

(ii) With appropriate constitution, by-laws, or articles of incorporation;

(2) Includes in its purposes the promotion of the education of Indians;

(3) Is controlled by a governing board, the majority of which is Indian;

(4) If located on an Indian reservation, operates with the sanction of or by charter from the governing body of that reservation;

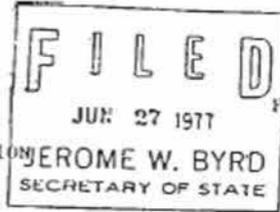
(5) Is neither an organization or subdivision of, nor under the direct control of, any institution of higher education; and

(6) Is not an agency of State or local government.

As documentation of the above criteria AISES' Articles of Incorporation, By-Laws, Mission Statement, and Board of Directors list with tribal affiliations are attached below.

FORM NO. 1D

AMENDED



FILE: \$5.00

ARTICLES OF INCORPORATION

STATE OF OKLAHOMA )  
COUNTY OF Cleveland ) SS:

TO THE SECRETARY OF STATE OF THE STATE OF OKLAHOMA:  
We, the undersigned trustees or directors

NAME	NO. & STREET	CITY & STATE
George Thomas (Executive Director)	640 Reed Street	Norman, Oklahoma 73069
Jerry Elliott	1515 Seagate	Houston, Texas
Alex Labadie	3604 Windsor Terrace	Okla. City, Okla. 73122

Being persons legally competent to enter into contracts, for the purpose of forming a non profit corporation under the laws of the State of Oklahoma (18 O.S. Supp. 1968, Secs. 851 to 862) do hereby adopt the following Articles of Incorporation:

ARTICLE ONE

The name of this corporation is National Society of American Indian Engineers

ARTICLE TWO

The address of its registered office in the State of Oklahoma is 640 Reed Street in the City of Norman County of Cleveland and the name of its registered agent at such address is George Thomas

ARTICLE THREE

The duration of the corporation is ten years (not to exceed 50 years)

ARTICLE FOUR

The purpose or purposes for which the corporation is formed are:  
See attachment one.

ARTICLE FIVE

This corporation does not afford pecuniary gain, incidentally or otherwise, to its members.

ARTICLE SIX

The number of directors constituting the first board of directors, the name and address of each such director, and the tenure in office of the first directors.

DIRECTORS	ADDRESS	TERM OF OFFICE
George Thomas	640 Reed Street Norman, Oklahoma	Three years
Jerry Elliott	1515 Seagate Houston, Texas	Three years
Alex Labadie	3604 Windsor Terrace Okla. City, Okla.	Three years

STATE OF OKLAHOMA )  
COUNTY OF \_\_\_\_\_ ) SS:

Before me, \_\_\_\_\_ a Notary Public in and for said county and State, on this \_\_\_\_\_ day of \_\_\_\_\_, 19 \_\_\_\_\_

To me known to be the identical persons who executed the foregoing Articles of Incorporation and acknowledged to me that they executed the same as their free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and seal the day and year written

\_\_\_\_\_  
Notary Public

(Seal)

My commission expires \_\_\_\_\_

ATTACHMENT ONE

Purpose: The Corporation is organized exclusively for charitable and educational purposes as described under Section 501(c) (3) of the Internal Revenue Code of 1954 (or the corresponding provisions of any future United States Internal Revenue Law) including but not limited to:

- A. Providing an organization for American Indian engineers and related scientists which will promote unity and cooperation and will provide a basis from which efforts may be made towards the advancement of the American Indian people.
  - B. Providing better communication among American Indian engineering students, and between the students and the American Indian people and the general public.
  - C. Providing a basis for the development of professionalism among the American Indian engineering students and members of the Organization.
  - D. Providing assistance to American Indian engineering students including but not limited to:
    - 1. Financial assistance during the academic year and summer,
    - 2. Educational opportunities such as curriculum development, research, publication and distribution of educational materials, and educational film production.
  - E. Providing a forum for the exploration of engineering problems relating to American Indian people and their lands.
  - F. Promoting the interest of American Indians to pursue careers as professional engineers.
  - G. Participating in any grant, program, benefits or services available under any federal, state, or local law from any other person, or organization or agency.
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ATTACHMENT TWO

ARTICLE FIVE-CONTINUED

No part of the net earnings of the corporation shall inure to the benefit of, or be distributable to, its members, trustees, officers, or other private persons, except that the corporation shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of the purposes set forth in Article 4 hereof. No substantial part of the activities of the corporation shall be the carrying on of propaganda, or otherwise attempting to influence legislation, and the corporation shall not participate in, or intervene in (including the publishing or distribution of statements) any political campaign on behalf of any candidate for public office. Notwithstanding any other provision of these articles, this corporation shall not, except to an insubstantial degree, engage in any activities or exercise any powers that are not in furtherance of the purposes of this corporation.

ARTICLE SEVEN

Upon the dissolution of the corporation, the Board of Directors shall, after paying or making provision for the payment of all of the liabilities of the corporation, dispose of all of the assets of the corporation exclusively for the purposes of the corporation in such manner, or to such organization or organizations organized and operated exclusively for the charitable, educational, religious, or scientific purposes as shall at the time qualify as an exempt organization or organizations under section 501 (c) (3) of the Internal Revenue Code of 1954 (or the corresponding provision of any future United States Internal Revenue Law) as the Board of Directors shall determine. Any such assets not so disposed of shall be disposed of by the Court of Common Pleas of the county in which the principal office of the corporation is then located, exclusively for such purposes or to such organization or organizations, as said Court shall determine, which are organized and operated exclusively for such purposes.

I, Alex Labadie, a member of the Board of Directors of the National Society of American Indian Engineers to be incorporated in the State of Oklahoma, as signing my name as an incorporator of said incorporation.

STATE OF Oklahoma )  
COUNTY OF Oklahoma ) SS:

Before me, (b)(6), a Notary Public in and for said county and State, on this 27<sup>th</sup> day of June, 19 77

Alex B. Labadie

To me known to be one of the identical persons who executed the foregoing Articles of Incorporation and acknowledged to me that he executed the same as his free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and seal the day and year written.



(b)(6)  
Notary Public

My commission expires April 3, 1979

I, George Thomas, a member of the Board of Directors of the National Society of American Indian Engineers to be incorporated in the State of Oklahoma, am signing my name as an incorporator of said incorporation.

STATE OF Oklahoma )  
COUNTY OF Delaware ) SS:

Before me, Vicky Carol Vestemeir, a Notary Public in and for said county and State, on this 20 day of December, 1976

(b)(6)

To me known to be one of the identical persons who executed the forgoing Articles of Incorporation and acknowledged to me that he executed the same as his free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and seal the day and year written.

(b)(6)

J Notary Public



My commission expires January 22, 1980

I, Jerry Elliott, a member of the Board of Directors of the National Society of American Indian Engineers to be incorporated in the State of Oklahoma, am signing my name as an incorporator of said incorporation.

STATE OF Oklahoma )  
COUNTY OF Delaware ) SS:

Before me, Vicky Carol Westemeir, a Notary Public in and for said county and State, on this 7<sup>th</sup> day of September, 1976

(b)(6)

To me known to be one of the identical persons who executed the foregoing Articles of Incorporation and acknowledged to me that he executed the same as his free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and seal the day and year written.

(b)(6)

Notary Public



My commission expires January 22, 1980



# BYLAWS OF THE AMERICAN INDIAN SCIENCE AND ENGINEERING SOCIETY

(Last updated on November 20, 2015 per Board Resolution # 112015AAISES and #  
112015BAISES)

## ARTICLE I - NAME AND PURPOSE

### Section 1 - Name

The name of this corporation is American Indian Science and Engineering Society, hereafter referred to as AISES.

### Section 2 - Purpose

AISES is organized exclusively for charitable and educational purposes as described under Section 501(c)(3) of the Internal Revenue Code of 1954 (or the corresponding provisions of any future United States Internal Revenue Law) including but not limited to:

- A. Providing an organization for American Indian engineers and scientists which will promote unity and cooperation and will provide a basis from which efforts may be made toward the advancement of the American Indian people, including substantially increasing the number of engineers, scientists, and technologists of American Indian descent.
- B. Providing better communication among American Indian science and engineering students, and between the students and the American Indian people and the general public.
- C. Providing a basis for the development of professionalism among the American Indian science and engineering students and members of AISES.
- D. Providing assistance to American Indian science and engineering students including but not limited to:
  1. Financial assistance during the academic year and summer.
  2. Educational opportunities such as curriculum development, research, publication, career counseling, and distribution of educational materials, and educational film production.
  3. Mentorship.
- E. Providing a forum for the exploration of scientific and engineering problems relating to American Indian people and their lands.
- F. Promoting the interest of American Indians to pursue careers as engineers, scientists and technologists.
- G. Participating in any grant, program, benefits or services available under any federal, state, or local law from any other person or organization or agency.
- H. The establishment of cooperative efforts with other engineering and scientific organizations which are concerned with the under representation of minorities in the scientific and engineering fields.

## ARTICLE II - MEMBERSHIP

## **Section 1 - Definition**

"American Indian" shall mean a person who is a member of any of the indigenous peoples of North America. American Indians, Alaska Natives, Native Hawaiians, Pacific Islanders and First Nations are among those included.

## **Section 2 - Individual Membership**

There shall be two categories of individual membership:

- A. General Membership shall be open, upon application to AISES, to any American Indian (as determined above) having a bachelor's or advanced degree in engineering or science; having an associate's degree in engineering or science with engineering or scientific work experience; having a bachelor's degree in engineering technology with engineering work experience.
- B. Associate Membership shall be open to any American Indian (as determined above) currently enrolled in any accredited college or university offering an engineering or engineering technology curriculum; or any scientists, engineers, or other interested persons who are not qualified as General Members, upon application to AISES. Associate Membership shall be open to any interested individual who does not qualify for General Membership.
- C. Membership, either General or Associate, shall not be transferable or assignable.
- D. Each General Member and Associate Member shall be entitled to one vote on each matter submitted to a vote of the General and Associate Membership.
- E. Any member, either General or Associate, may resign by filing a written resignation with the Membership Committee.
- F. Disciplinary Action: A member may be suspended or expelled from AISES for cause by a 2/3 vote of a quorum of the General and Associate Membership acting on a petition motion signed by at least five (5) members in good standing (i.e. membership dues paid up-to-date). A member also may be suspended or expelled from AISES for cause by a majority vote of the Board of Directors. Before any action for suspension or expulsion is taken in this matter, such member shall be given a written statement of the charges against him or her at least 30 days prior to the General meeting or Board meeting before which the member is to appear and shall be given an opportunity to answer any and all charges at the designated meeting. The decision of the Board of Directors is subject to appeal at a meeting of the General and Associate Membership.

A monetary fine may be imposed on an individual member for cause by a majority vote of the Board of Directors. A Student Chapter or a Professional Chapter may be held accountable by the Board of Directors for any costs or damages caused by the actions of one of its members. Before any action for imposition of a fine or financial responsibility is taken in this matter, such member or chapter shall be given a written statement of the charges at least 30 days prior to the Board meeting before which the member or chapter is to appear and shall be given an opportunity to answer any and all charges at the designated meeting. The decision of the Board of Directors is subject to appeal at a meeting of the General Membership.

Cause for suspension, expulsion, and imposition of fines includes (but is not limited to) violations of the AISES Code of Conduct or any other internal laws or rules governing AISES.

### **Section 3 - Corporate Membership**

Corporate Memberships shall be granted to those corporations that financially support AISES.

### **Section 4 - Tribal Membership**

1. Tribal memberships shall be granted to the American Indian tribes, Alaska Native regional or village corporations, and Native Hawaiian governing entities that financially support AISES.

## **ARTICLE III - MEETINGS**

### **Section 1 - Meetings**

- A. There shall be no less than one General meeting each year of the General and Associate Membership of AISES. The Board of Directors shall have the power to specify the day, time, and place these meetings are to be held, provided that proper notice of such meetings be given.
- B. The Chair of the Board must call a special meeting upon presentation of a petition containing the signatures of a simple majority of the General and Associate Membership.
- C. Written notice stating the place, day, and hour of any meeting of members shall be delivered either personally, by mail, or by email to each member, General or Associate, not less than two weeks or more than two months before the date of such meeting, by or at the direction of the Chair of the Board, the officers or persons calling the meeting. In the case of a special meeting or when required by law or by these bylaws, the purpose or purposes for which the meeting is called shall be stated in the notice. If mailed, the notice of a meeting shall be deemed to be delivered when deposited in the United States mail addressed to the member at his or her address as it appears on the record of AISES.
- D. Any action required by law to be taken at a meeting of the General and Associate Members, or any action which is or was planned to be taken at a meeting of the General and Associate Members, may be taken without a meeting if: (1) A written consent is signed by all members entitled to vote, and (2) The consent shall state the action to be taken, and (3) The consent is signed within one month after the written proposed action has been mailed or emailed to the members.
- E. Quorum: a quorum for action on business tabulated on the Agenda of the annual meeting shall be twenty (20) General and Associate Members or 20 percent of the entire current General and Associate Membership, whichever is smaller.
- F. All meetings are to be conducted by Robert's Rules of Order, revised.
- G. The Chair of the Board shall appoint a parliamentarian who will rule on the points of procedure at General meetings and board meetings and assure adherence to these bylaws during such meetings.

### **Section 2 - Voting**

- A. A majority of the vote entitled to be cast by the General and Associate Membership present at a meeting at which a quorum is present shall be necessary for the passage of any business requiring a vote. This subsection does not apply to bylaws amendments, board elections, or any vote that requires a greater proportion specified by law or these bylaws.
- B. Voting by proxy shall not be allowed.

### **Section 3 - Waivers of Notice**

Whenever any notice is required to be given under the provisions of the Non-profit Corporation Act of Oklahoma or under the provisions of the Articles of Incorporation or Bylaws of AISES, a waiver in writing signed by the person or persons entitled to such notice, whether before or after the time stated therein, shall be deemed equivalent to the giving of such notice.

## **ARTICLE IV - BOARD OF DIRECTORS**

### **Section 1 – Election to Board of Directors**

- A. The members of the Board of Directors shall be elected by the General and Associate Membership of AISES via secret letter ballot or by electronic ballot at the AISES website.
- B. The Nomination Committee shall call for nominations no later than May 1. The Nominating Committee Chair shall prepare and forward to each General and Associate Member of AISES, no later than August 1, a ballot containing the nominations made by the Nominating Committee. Ballots must be postmarked or electronically submitted by September 1, or as otherwise directed by the Nominating Committee. Elected nominee notifications will be completed on or before October 1. Terms will begin November (Winter Board Meeting).
- C. For each elective office position, at least two candidates shall be named by the Nominating Committee. All nominated and/or write-in candidates shall have agreed, in advance, to serve if elected.
- D. Secret letter ballots shall be mailed to the office of the Executive Director of AISES for the determination of the eligibility of the Voter and counting of the ballots by the appointed election inspectors.
- E. Three inspectors of the election shall be appointed from the General and/or Associate Membership by the Nominating Committee Chair. If three General and/or Associate Members are not available to serve as inspectors, then other persons may be appointed by the Nominating Committee Chair to bring the total number of inspectors to three. The inspectors cannot be current members of the Board of Directors nor can they be nominees for the offices up for election.
- F. The inspectors shall report the results of the election to the Nominating Committee Chair within ten working days, who shall then declare the candidates receiving the largest number of votes for the offices. Should a tie occur - the General and Associate Membership of AISES shall resolve the tie by secret ballot vote at the next General meeting of AISES.
- G. The elected candidates shall be installed, and their terms of office shall commence at the next winter Board of Directors meeting.

- H. Members' terms are three years. Members shall not be eligible for election to the Board for more than two consecutive terms (i.e., 6 years). The duration of an elected Board Member's term to the Board shall be determined such that no more than one third (1/3) of all Board Members terms terminate at any one time.
- I. The number of Board of Director Members shall be no less than seven (7) and no more than twelve (12). The Board of Director Membership shall be comprised of no less than five (5) General Members.
- J. Two Board of Director members may be from the Associate membership of AISES.
- K. Any member (Associate or General) in good standing may nominate fellow members in good standing to the Board of Directors.
- L. Self-nomination to the Board of Directors is acceptable.
- M. Each nomination to the Board of Directors shall be accompanied by two endorsements by members in good standing (i.e., membership dues paid up-to-date).
- N. Each nominee on the ballot shall be identified as Associate or General Member.
- O. The information in AISES Membership Database, at the time of nomination, will be used to define membership status.
- P. The membership status (Associate or General) of a nominee will not be reviewed or revised at February 1 of the nominee's election year.
- Q. Two students shall be selected by the AISES Student Chapters to be seated as Advisory, nonvoting members on the AISES Board of Directors. The students shall have staggered two year terms. The students must be in school through the spring semester of their final two year term. Financing of this placement will be administered by the AISES Executive Director.

## **Section 2 - Board of Director Officers**

- A. The number of Directors shall be no less than seven (7) or more than twelve (12). Two (2) Directors may be from the Associate Members of AISES and these two positions are not eligible to be an Officer. Four (4) Directors from the General Membership shall be officers elected by the Board of Directors to serve as the Chair, Vice Chair, Secretary and Treasurer.
- B. Board Members shall not be eligible for election to more than one office.
- C. All Officers shall serve two year terms unless removed from that office for cause, or if removed from the membership of AISES for reasons stated in these By-Laws or if the Officer resigns the position due to inability to satisfactorily perform the duties of said position or if the Officer resigns the position to pursue another Officer position.
- D. An officer of AISES Board of Directors shall not serve as an officer on any other corporation or enterprise that is operated wholly or partially by AISES. They may serve as a Board

member on one other AISES corporation or enterprise that is operated wholly or partially by AISES. The Chair of AISES Board of Directors, may serve as a member of the Board of any AISES corporation or enterprise as an ex-officio member only and shall not serve as an officer on that Board.

### **Section 3 - Duties and Powers**

- A. The affairs of AISES shall be managed by its Board of Directors. Directors need not be residents of the State of Oklahoma, and they must come from AISES Membership.
- B. The Board of Directors shall meet at the time of the General and Associate Membership.
- C. All meetings of the Board of Directors shall be open to the General and Associate Membership, except for special sessions which contain agenda items that, in the best interest of AISES, should be acted on by the Board and Executive officers only.
- D. Any Director may be removed and relieved of his or her duties for cause after an appropriate hearing, by a vote of 2/3 of the Board membership present, if a quorum exists. Any Director who is the subject of a removal proceeding will be excused of his/her administrative duties pending the outcome of the vote.
- E. All Directors shall serve until the commencement of the term of their successor.
- F. The Chair shall give notice of any special meeting of the Board of Directors at least twenty (20) days previous thereto by written notice delivered personally or sent by mail or telegram or any electronic means to each Director at his or her address as shown by AISES records. If notice is given by email, such notice shall be deemed to be delivered when the email is delivered to the sender's server. If notice is given by fax, such notice shall be deemed to be delivered when the fax acknowledges a send receipt. If mailed, such notice shall be deemed delivered when deposited in the United States mail in a sealed envelope so addressed with postage thereon prepaid. If notice is given by telegram, such notice shall be deemed to be delivered when the telegram is delivered to the telegraph company. Or, a meeting of the Board of Directors may be called as needed upon presentation to the Chair by the majority of Board members. Any Director may waive notice of such meeting with the express purpose of objecting to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted, nor the purpose of any regular or special meeting of the Board, need be specified in the notice or waiver of notice of such meeting, unless specially required by law or by these bylaws.
- G. A quorum of the Board of Directors in regular or special meetings shall be one more than half of the total members of the Board.
- H. The Chair may conduct meetings of the Board by conference call on issues requiring immediate actions by the Board or any electronic means concerning votes in writing, provided that waiver of notice be given orally, to be immediately followed by written waiver to the Secretary. Written confirmation of each vote shall be forwarded to the Secretary and notice of such decision(s) shall be sent to the General Membership via electronic means.

- I. The Chair may conduct meetings by mail or using any electronic means which pertain to issues requiring action necessary to AISES, provided that such a decision reached shall be by unanimous vote of the Board. Notice of such decision shall be sent to the General Membership via electronic means.
- J. The vote of a majority of the Directors present at a meeting at which a quorum is present shall be the act of the Board of Directors, unless the act of a greater number is required by law or these bylaws.
- K. Vacancies
  - 1. When a vacancy occurs on the Board of Directors, the Board may fill the vacancy by a temporary appointment by a vote of a majority of the remaining Directors, even though less than a quorum may exist. In the event that a vacancy occurs in the office of Chair, that office shall be assumed by the Vice-Chair. The Board shall then elect a succeeding Vice-Chair.
  - 2. A special election shall be called at the next General meeting to fill the unexpired term of the vacant office of AISES.
- L. Directors shall not receive any stated salaries for their services or other compensation in any form. However, nothing herein contained shall be construed to preclude any Director from serving AISES in any other capacity and receiving compensation therefore.
- M. Duties of the Board and Staff - The Board of Directors shall carry out the functions of AISES between meetings of that body and perform such acts as may be assigned to it from time to time, and shall carry out faithfully the purposes and policies of AISES. The acts of the Board of Directors shall be effective for all purposes as the act or authorization of AISES provided, however, that the Board of Directors shall have no authority to repeal, rescind, veto, or repudiate any action taken at any General meeting of AISES, or at any special meeting held thereafter.
  - 1. The Chair shall preside at all meetings of the Board of Directors and of the General Membership; he or she shall assume other duties as prescribed in these bylaws, and he or she shall undertake other duties as added or defined at the discretion of the Board of Directors or the General Membership.
  - 2. The Vice-Chair shall preside at all meetings in the absence or disability of the Chair, and shall undertake all other duties as added or defined at the discretion of the Board of Directors.
  - 3. The Secretary shall maintain a complete and accurate record of all meetings of AISES and the Board of Directors, safely and systematically keep all papers, records, and other documents belonging to AISES or pertaining to the business thereof; he or she shall send to each new member a copy of the Articles of Incorporation and Bylaws of AISES when the applicant becomes eligible for membership; and perform such acts as may be assigned to him or her from time to time.

4. The Treasurer shall keep and maintain an account for all monies, credit, or property of AISES of any and every nature which shall come into his or her hands and shall keep and maintain an accurate account of all money received and disbursed, and proper vouchers for money so disbursed. He or she shall require that the funds of AISES be collected and disbursed in the manner prescribed by AISES and the Board of Directors. He or she shall keep all the funds in a bank or banks or invest the amounts as the Educational Fund as authorized by the Board of Directors and in the name of AISES, subject to withdrawal or transfer in such a manner as may from time to time be directed by the Board of Directors. He or she shall render such accounts, statements, and inventories of monies received and disbursed and of money and property in hand and generally of all matters pertaining to his or her office as shall be required by AISES or the Board of Directors. He or she shall perform such duties as may be assigned to him or her from time to time.

N. Staff - To fulfill the stated purposes and objectives of AISES an Executive Director shall be employed.

1. The Board of Directors shall have the power to hire and fire the Executive Director.
2. The Executive Director shall be granted the power by the Board of Directors to hire, supervise and discharge the supportive staff in accordance with AISES Human Resources Manual implemented in 2001. AISES Human Resources Manual, approved by a majority of the Board Members, governs AISES personnel matters. Amendments to AISES Human Resources Manual require a majority vote by the Board of Directors.
3. Qualifications of the Executive Director shall be determined and reviewed by the Board of Directors. Selection criteria will include demonstrated fundraising abilities in addition to other appropriate administrative qualifications.

O. Duties of Executive Director

1. To seek out and obtain funding to support students who are deemed eligible to receive such support by the Board of Directors.
2. To seek out and obtain funding to support the educational institutions by including, but not limited to, producing educational films, literature, and brochures to be disseminated to American Indian high school and post-secondary students, and American Indian communities in conjunction with the established guidelines of the Board of Directors.
3. Oversee the coordination and implementation of the activities of the AISES General Membership, as prescribed by the Board of Directors.
4. Be responsible to carry out other functions and duties so specified by the Board of Directors of AISES.

## **ARTICLE V - COMMITTEES**

### **Section 1 - Standing Committees**

- A. A Finance Committee shall be recognized and shall have the duty of establishing policy for the gathering, use and distribution of funds in compliance with the stated goals and objectives of AISES.
- B. A Membership Committee shall be recognized and shall have the duty of determining eligibility of individuals for admission to this AISES, including the reviewing of all applicants for General and Associate Membership. This Committee shall also have the responsibility for advertising the advantages of AISES Membership to potential candidates for either General or Associate Membership.
- C. An Education Committee shall be recognized and shall have the duty of (1) planning and promoting means of producing and disseminating information on, including but not limited to, science, engineering, and engineering technology to junior and senior high schools; (2) assisting those organizations whose concern is the improvement of educational opportunities for American Indians; and (3) assisting the educational institutions with, including but not limited to, the development of curriculum for American Indian students.
- D. A Governance Committee shall be recognized and shall have the duty of reviewing the governing documents and policy of AISES, including all AISES entities, and propose revisions and amendments to the Board of Directors to promote the proper and effective governance of AISES.

### **Section 2 - Formation of Committees**

- A. The Chair of the Board of Directors will appoint the Chair of each committee from the members of the Board of Directors.
- B. The Chair of each committee shall appoint members to the committee subject to the majority approval of the Board of Directors.
- C. The terms of the Chair of each committee shall be for the duration of their Board term. The terms of the committee members shall be for one year or at the discretion of the committee Chair.
- D. The committee shall meet at the discretion of each committee Chair and shall report at regular Board of Directors' meetings and at regular General Membership meetings.

### **Section 3 - Special Committees**

A majority of the Board of Directors in meetings of the Board or the General Membership shall have the power to create any special committee when necessary and establish guidelines thereof.

## **ARTICLE VI - GENERAL BUSINESS**

### **Section 1 - Fiscal Year**

The fiscal year of AISES shall begin on the first day of January and end on the last day of December each year.

### **Section 2 - Offices**

AISES may have its principal office either within or without the state of Oklahoma, as the Board of Directors may determine or as the affairs of AISES may require from time to time. AISES shall have and continuously maintain in the state of Oklahoma a registered office and a registered agent. The registered office may be, but need not be, identical with the principal office, if the principal office is in the state of Oklahoma, and the address of the registered office may be changed from time to time by the Board of Directors.

### **Section 3 - Bonding, Contracts, Checks, Deposits, and Funds**

- A. Bonding: Officers and Employees. The Board of Directors shall require any officer or employee having custody of or handling funds of AISES to give bond with good sufficient surety in an amount and character to be determined by AISES in compliance with regulations and authorize the payment of the premium(s) from the funds of AISES.
- B. The Board of Directors may authorize any officer or officers, agent or agents of AISES, in addition to the officers so authorized by these bylaws, to enter into any contract, or execute and deliver any instrument in the name of and on behalf of AISES and such authority may be general or confined to specific instances.
- C. All checks, drafts, or orders for the payment of money, notes, or other evidence of indebtedness issued in the name of AISES shall be signed by such officers, agent or agents of AISES and in such manner as shall from time to time be determined by resolution of the Board of Directors.
- D. The Board of Directors may accept on behalf of AISES any contribution, gift, bequest, or devise for the general purpose or for any special purpose of AISES.

### **Section 4 - Regional/State Section (Reserved)**

### **Section 5 - Professional Chapters**

- A. The Board of Directors of AISES may authorize the formation of professional chapters upon the filing of a written petition of five or more General Members of good standing resident in the area where the proposed chapter would be located. The geographic boundary for any chapter shall be established by the Board of Directors of AISES. The Board of Directors of

AISES shall establish the procedures to be followed in the formation of and any conditions imposed upon the professional chapters.

- B. Any chapter formed under this Bylaw shall be organized and operated as an unincorporated or incorporated affiliate of AISES and shall be subject to the terms and provisions of the Articles of Incorporation and Bylaws of AISES and applicable laws governing the duties, obligations and functions of organizations exempt from general income taxation under Section 501(c)(3) of the Internal Revenue Code of 1986, as amended. AISES shall have the right to examine the books and records of any such chapter upon reasonable notice.
- C. Each chapter shall operate under and in accordance with the Bylaws of AISES. The officers of each chapter shall consist of a Chair, who shall serve as the President and Chief Executive Officer of such chapter, a Secretary and a Treasurer, and such other officers as may be elected by the members of each chapter. The president of each chapter must be a General Member of AISES. Other officers may be General or Associate Members. All professional chapter members must be members of AISES.
- D. Chapters may adopt bylaws, subject to the prior approval of the Board of Directors of AISES. Any such bylaws shall comply and be consistent with the Articles of Incorporation, Bylaws and laws applicable to AISES. The Board of Directors of AISES may rescind or revoke any chapter's authorization upon the affirmative vote of 2/3 of the Board of Directors of AISES present at any meeting at which a quorum is present, without cause. Chapters may make recommendations to the Board of Directors of AISES concerning proposed future programs, activities or functions for AISES. Any such recommendations shall be non-binding.
- E. Chapters shall conduct annual meetings for the election of officers and the conduct of such other matters as may properly come before the membership of each chapter. Written notice of such annual meetings shall be given to the members of such chapter at least ten (10) days in advance of the meeting. The chapter secretary shall (1) request approval of the AISES Board of Directors to proposed changes in chapter bylaws, (2) by January 1, report names of newly elected officers, and (3) by January 1, file annual financial and activities reports and a membership roster with the AISES Executive Director.
- F. Upon request, AISES shall assist chapters by providing administrative assistance, mailing labels, stationery, membership rosters and such other assistance as AISES may deem necessary or appropriate.

## **ARTICLE VII – ADVISORY COUNCILS**

### **Section 1 – Council of Elders**

The Council of Elders is nominated to and appointed by the Board of Directors and accountable to the Board of Directors for the purpose of cultural guidance to the AISES family as a whole. The Board of Directors approves the qualifications, appointment process, and responsibilities and will communicate this policy to the AISES membership.

### **Section 2 – Corporate Advisory Council (Reserved)**

**Section 3 – Government Relations Council (Reserved)**

**Section 4 – Tribal Government Advisory Council (Reserved)**

**ARTICLE VIII - AMENDMENTS**

**Section 1**

The Articles of Incorporation of AISES are subject to amendment by 2/3 vote of the General and Associate Membership.

**Section 2**

The bylaws of AISES may be approved or amended by simple majority vote of the General and Associate Membership via secret letter ballot or by electronic ballot at the AISES website. The Board of Directors will appoint three inspectors to oversee the counting and reporting of votes.

## AISES Mission Statement

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

## AISES Board of Directors List

<b>Board Member</b>	<b>Position</b>	<b>Business Affiliation</b>	<b>Tribal Affiliation</b>
Richard Stephens	Chair	Retired: Boeing Company	Pala Band of Mission Indians
Dr. Twyla Baker-Demaray	Vice Chair	Nueta Hidatsa Sahnish College	Three Affiliated Tribes
Dr. James May	Treasurer	Retired	United Keetowah Band
Paul Kabotie	Secretary	Indigenous Collaboration Inc.	Hopi
Dr. Mark Bellcourt	Director	University of Minnesota	White Earth Ojibwe
Amber Finley	Director	Northstar Council	Three Affiliated Tribes
Sheila Lopez	Director	Intel Company	Navajo
Lisa Lone Fight	Director	Mandan, Hidatsa and Arikara Nation	Mandan, Hidatsa, Sahnish
Crystal Tulley-Cordova	Sr. Student Representative	University of Utah	Navajo
Kory Joe	Jr. Student Representative	Northern Arizona University	Asa'carsarmiut Tribe

## Budget Narrative File(s)

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\* **Mandatory Budget Narrative Filename:**

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To add more Budget Narrative attachments, please use the attachment buttons below.

**American Indian Science and Engineering Society  
NYCP Budget Narrative**

**Year One**

**Personnel - \$33,200**

The *Traditional Knowledge, New Ideas, A Better Cheyenne River* project will pay the prorated amounts of salaries for the AISES Director of Special Projects and Research (project director), AISES Program Officer, AISES Director of Business and Program Development and CRST Program Coordinator.

The AISES Director of Special Projects and Research will be responsible of oversight of all planning and program delivery through the duration of the grant. This Director will develop evaluation tools and processes to measure knowledge transfer, participation and overall benefit to the participants and community.

The AISES Program Officer will be the primary point of contact for the C-EB schools and the tribe. Additionally, the Program Officer will deliver Power Up Workshops, Coordinate Web-based Trainings for educators, work with tribal and school officials to develop and deliver family STEM activities, coordinate participation in National Conference, Science Bowl, Science Fair and Energy Challenge.

The AISES Director of Business and Program Development is a member of the Cheyenne River Sioux Tribe. This Director will assist in the development and delivery of culturally appropriate curriculum and activities. Director will also work with the CRST school and tribal officials to fully engage and educate all tribal officials on the importance of STEM programming and opportunities for its youth. Director will travel to CRST to conduct annual review of the program with educators and tribal officials.

The CRST program coordinator will be identified by the tribal education department. Coordinator will work with AISES staff on planning all events and activities, in addition to conducting outreach throughout the grant period.

The positions and their time allocations and salaries allocated toward this project on a prorated basis are estimated as follows: Director of Programs, (10% of \$87,000 annual salary) (\$8,700); Program Officer, (25% of \$52,000) (\$12,500); Director of Business and Program Development, (10% of \$80,000) (\$8,000), CRST Program Coordinator (10% of \$40,000) (\$4,000).

**Fringe Benefits - \$8,300**

Taxes and fringe benefits are calculated at the following rates:

- FICA at 8% of wages for a total of \$2,656.
- SUI calculated at 2% salary. Total SUI is \$664.
- Worker's compensation is calculated at .50 %. The total is \$166.
- Health/dental/vision/life at 11.5% available to all full time employees. The total is \$3,818.
- AISES 403(b) match is calculated at 3%. The total is \$996.

### **Travel - \$34,000**

The travel category covers airfare, lodging, meals, mileage and any participation fees for the following: Participation in the annual AISES National Conference for students and educators, AISES staff travel to conduct Power Up Workshops and Family STEM nights, regional robotics competition for students.

- 6 C-EB teachers will attend and participate in AISES' 3-day National Conference. (\$600 air fare, \$150/night hotel \*4 nights, \$50/day per diem and ground transport, \$450 ea. Registration) – Total of \$ 11,100
- 12 C-EB High School Students will attend and participate in AISES' 3-day National Conference. (\$600 air fare, \$75/night hotel \* 4 nights, \$50/day per diem and ground transport, \$175 total registration) – Total of \$15,300
- AISES staff travel to present Power Up Workshops and Family/Community STEM activity and college preparation nights (\$600 air fare, \$150/night hotel \* 2 nights, \$100/day per diem and ground transport, \$300 rental car) x 4 trips – Total of \$5,600
- Travel and registration to regional robotics competition (\$150 registration + \$350 food and transportation) x 4 teams – Total of \$2,000

### **Equipment - \$25,000**

The equipment category includes all of the robotics kits, robot balls and operating devices. Said equipment has a life span of 1-3 years. In the introductory year, equipment will be introduced and in subsequent years, additional robotics equipment will further expand programming to include more students.

- VEX EDR Robotic Kits: Each EDR Kits come complete with all of the pieces, sensors, linkages and software for students to work together to build a robot as a classroom exercise or competition (2 for Jr. High, 2 for High School) \* \$1,200/ea = \$4,800
- LEGO WeDo 2.0 Kits: Each LEGO kit comes fully equipped with 8 complete robot sets. Sets include bricks, sensors, motor and smart hub. (2 for Elementary School, 2 for Upper Elementary) \* \$850 = \$3,400
- Sphero Robots and Operating Devices: Each Sphero SPRK sets come with a dozen robot balls that pair to a device (Apple, Android, Tablet). (1 for Elementary, 2 for Upper Elementary, 2 for Jr. High, 2 for High School) 7 total \* \$2,400/set = 16,800

### **Supplies - \$7,600**

Supplies include materials for the Power Up workshops and hospitality for family night and other after school activities, specifically Robotics Club.

- Power Up Workshop Supplies: Each year AISES staff will make four trips to Cheyenne River to deliver Power-Up curriculum to students in the Upper Elementary, Jr. High and High Schools. During each trip 4 workshops will be delivered. The estimated amount spent on supplies and to provide Power Up Manuals for students and teachers is \$200. The total cost for Power Up Workshop supplies = 4 sessions \* 4 trips \* \$200 = \$3,200

- Family night, community event/activity hospitality: Estimating 20 families of 2 and food cost of \$10/person \* 4 events= 600 = \$2,400
- VEX Robotics Weekly Team meeting hospitality: \$25/event \* 10 weeks \* 2 groups of teams = \$500
- Office Supplies: Each partner (AISES, C-EB Schools and CRST) will have an annual allowance for supplies to include paper, ink, printing and other general supplies: \$500\*3=\$1,500

### **Contractual - \$12,000**

The contractual category includes the consulting fee of the independent evaluator, Dr. Wren Walker Robbins. As the evaluator Dr. Robbins will individually evaluate specific project programs as well as the effectiveness of the entire project itself. Dr. Robbins is partner in the Changing Communities consulting group. Changing Communities' mission is to build STEM education and research programs that engage and grow diverse learners through cross-cultural partnership development, cultural proficiency workshops, facilitated programming, coaching, and programming planning and evaluation. Dr. Robbins has expressed her willingness to serve as the independent evaluator to AISES staff. As a Mohawk scientist, educator, and long-time AISES member, Dr. Robbins has a multitude of experiences to aid in her evaluation of the project, ability to contribute toward improving program elements in order to meet desired objectives, and identify effective strategies to be disseminated and replicated. Dr. Robbins will spend an estimated 3 weeks (120 hours) developing, implementing, compiling and analyzing data, and writing a summary report each year at an hourly rate of \$100 (120 hours \* 100/hour = \$12,000/year).

### **Construction - \$0**

No construction costs are included in the budget.

### **Other - \$31,600**

The "Other" category includes academic scholarships, teacher and program coordinator stipends, honorarium for tribal elders, and registration for virtual science fair participation.

- AISES will assist CRST in establishing a STEM academic scholarship program where 10 students would be awarded scholarships in the amount of \$2,000/academic year = \$20,000
- Stipends for teachers to coach the VEX activities club will compensate them for their time and expertise. We estimate 2 teachers \* \$50/week \* 10 weeks. The total will be \$1,000.
- Stipends for teachers to prepare students to participate in the virtual science fair will compensate them for their time and expertise. We estimate 6 teachers \* \$50/week \* 10 weeks. The total will be \$3,000.
- AISES will work closely with an administrator from the C-EB schools through the duration of the project to coordinate activities, evaluate needs, etc. Administrator will spend up to 100/hrs at a rate of \$25. The total will be \$2,500

- AISES will work with the C-EB High School Guidance Counselor in order to identify students to participate in National Conference. Additionally, the counselor will provide college prep programming to students by assisting with college tours and presentations, applications (admissions and financial aid), etc. Guidance Counselor will spend up to 100/hrs at a rate of \$25. The total will be \$2,500.
- Including tribal leadership and community elders in family STEM nights is a critical component of this project to incorporate the Lakota culture into programming. Elders and tribal leaders participating will be provided an honorarium of \$100 (4 individuals \* 4 events). The total amount is \$1,600
- In addition to working with school officials, AISES will call on Lakota Elders to assist in developing curriculum that includes the Lakota culture and language in its materials. AISES will provide a \$500 honorarium to 2 elders for approximately 20 hours of consultation per year = \$1,000
- Registration for students to participate in the virtual science fair participation is calculated as follows: \$25 per student \* 20 students. The total will be \$500.

**Indirect Charges - \$30,245.45**

Our current approved federal Indirect Cost rate is 25.31% (\$27,486.66) and this is charged on all items except for the pass through expenses which are calculated at 6.32% (\$2,758.79)

**American Indian Science and Engineering Society  
NYCP Budget Narrative**

**Year Two**

**Personnel - \$33,200**

The *Traditional Knowledge, New Ideas, A Better Cheyenne River* project will pay the prorated amounts of salaries for the AISES Director of Special Projects and Research (project director), AISES Program Officer, AISES Director of Business and Program Development and CRST Program Coordinator.

The AISES Director of Special Projects and Research will be responsible of oversight of all planning and program delivery through the duration of the grant. This Director will develop evaluation tools and processes to measure knowledge transfer, participation and overall benefit to the participants and community.

The AISES Program Officer will be the primary point of contact for the C-EB schools and the tribe. Additionally, the Program Officer will deliver Power Up Workshops, Coordinate Web-based Trainings for educators, work with tribal and school officials to develop and deliver family STEM activities, coordinate participation in National Conference, Science Bowl, Science Fair and Energy Challenge.

The AISES Director of Business and Program Development is a member of the Cheyenne River Sioux Tribe. This Director will assist in the development and delivery of culturally appropriate curriculum and activities. Director will also work with the CRST school and tribal officials to fully engage and educate all tribal officials on the importance of STEM programming and opportunities for its youth. Director will travel to CRST to conduct annual review of the program with educators and tribal officials.

The CRST program coordinator will be identified by the tribal education department. Coordinator will work with AISES staff on planning all events and activities, in addition to conducting outreach throughout the grant period.

The positions and their time allocations and salaries allocated toward this project on a prorated basis are estimated as follows: Director of Programs, (10% of \$87,000 annual salary) (\$8,700); Program Officer, (25% of \$52,000) (\$12,500); Director of Business and Program Development, (10% of \$80,000) (\$8,000), CRST Program Coordinator (10% of \$40,000) (\$4,000).

### **Fringe Benefits - \$8,300**

Taxes and fringe benefits are calculated at the following rates:

- FICA at 8% of wages for a total of \$2,656.
- SUI calculated at 2% salary. Total SUI is \$664.
- Worker's compensation is calculated at .50 %. The total is \$166.
- Health/dental/vision/life at 11.5% available to all full time employees. The total is \$3,818.
- AISES 403(b) match is calculated at 3%. The total is \$996.

### **Travel - \$34,000**

The travel category covers airfare, lodging, meals, mileage and any participation fees for the following: Participation in the annual AISES National Conference for students and educators, AISES staff travel to conduct Power Up Workshops and Family STEM nights, regional robotics competition for students.

- 6 C-EB teachers will attend and participate in AISES' 3-day National Conference. (\$600 air fare, \$150/night hotel \*4 nights, \$50/day per diem and ground transport, \$450 ea. Registration) – Total of \$ 11,100
- 12 C-EB High School Students will attend and participate in AISES' 3-day National Conference. (\$600 air fare, \$75/night hotel \* 4 nights, \$50/day per diem and ground transport, \$175 total registration) – Total of \$15,300
- AISES staff travel to present Power Up Workshops and Family/Community STEM activity and college preparation nights (\$600 air fare, \$150/night hotel \* 2 nights, \$100/day per diem and ground transport, \$300 rental car) x 4 trips – Total of \$5,600
- Travel and registration to regional robotics competition (\$150 registration + \$350 food and transportation) x 4 teams – Total of \$2,000

### **Equipment - \$13,000**

The equipment category includes all of the robotics kits, robot balls and operating devices. Said

equipment has a life span of 1-3 years. In the introductory year, equipment will be introduced and in subsequent years, additional robotics equipment will further expand programming to include more students.

- VEX EDR Robotic Kits: Each EDR Kits come complete with all of the pieces, sensors, linkages and software for students to work together to build a robot as a classroom exercise or competition (1 for Jr. High, 1 for High School) \* \$1,200/ea = \$2,400
- LEGO WeDo 2.0 Kits: Each LEGO kit comes fully equipped with 8 complete robot sets. Sets include bricks, sensors, motor and smart hub. (2 for Elementary School, 2 for Upper Elementary) \* \$850 = \$3,400
- Sphero Robots and Operating Devices: Each Sphero SPRK sets come with a dozen robot balls that pair to a device (Apple, Android, Tablet). (1 for Elementary, 2 for Upper Elementary, 2 for Jr. High, 2 for High School) 2 total \* \$2,400/set = \$7,200

### **Supplies - \$7,600**

Supplies include materials for the Power Up workshops and hospitality for family night and other after school activities, specifically Robotics Club.

- Power Up Workshop Supplies: Each year AISES staff will make four trips to Cheyenne River to deliver Power-Up curriculum to students in the Upper Elementary, Jr. High and High Schools. During each trip 4 workshops will be delivered. The estimated amount spent on supplies and to provide Power Up Manuals for students and teachers is \$200. The total cost for Power Up Workshop supplies = 4 sessions \* 4 trips \* \$200 = \$3,200
- Family night, community event/activity hospitality: Estimating 20 families of 2 and food cost of \$10/person \* 4 events= 600 = \$2,400
- VEX Robotics Weekly Team meeting hospitality: \$25/event \* 10 weeks \* 2 groups of teams = \$500
- Office Supplies: Each partner (AISES, C-EB Schools and CRST) will have an annual allowance for supplies to include paper, ink, printing and other general supplies: \$500\*3= \$1,500

### **Contractual - \$12,000**

The contractual category includes the consulting fee of the independent evaluator, Dr. Wren Walker Robbins. As the evaluator Dr. Robbins will individually evaluate specific project programs as well as the effectiveness of the entire project itself. Dr. Robbins is partner in the Changing Communities consulting group. Changing Communities' mission is to build STEM education and research programs that engage and grow diverse learners through cross-cultural partnership development, cultural proficiency workshops, facilitated programming, coaching, and programming planning and evaluation. Dr. Robbins has expressed her willingness to serve as the independent evaluator to AISES staff. As a Mohawk scientists, educator, and long-time AISES member, Dr. Robbins has a multitude of experiences to aid in her evaluation of the project, ability to contribute toward improving program elements in order to meet desired objectives, and identify effective strategies to be disseminated and replicated. Dr. Robbins will spend an estimated 3 weeks (120 hours) developing, implementing, compiling and analyzing

data, and writing a summary report each year at an hourly rate of \$100 (120 hours \* 100/hour = \$12,000/year).

### **Construction - \$0**

No construction costs are included in the budget.

### **Other - \$31,600**

The “Other” category includes academic scholarships, teacher and program coordinator stipends, honorarium for tribal elders, and registration for virtual science fair participation.

- AISES will assist CRST in establishing a STEM academic scholarship program where 10 students would be awarded scholarships in the amount of \$2,000/academic year = \$20,000
- Stipends for teachers to coach the VEX activities club will compensate them for their time and expertise. We estimate 2 teachers \* \$50/week \* 10 weeks. The total will be \$1,000.
- Stipends for teachers to prepare students to participate in the virtual science fair will compensate them for their time and expertise. We estimate 6 teachers \* \$50/week \* 10 weeks. The total will be \$3,000.
- AISES will work closely with an administrator from the C-EB schools through the duration of the project to coordinate activities, evaluate needs, etc. Administrator will spend up to 100/hrs at a rate of \$25. The total will be \$2,500
- AISES will work with the C-EB High School Guidance Counselor in order to identify students to participate in National Conference. Additionally, the counselor will provide college prep programming to students by assisting with college tours and presentations, applications (admissions and financial aid), etc. Guidance Counselor will spend up to 100/hrs at a rate of \$25. The total will be \$2,500.
- Including tribal leadership and community elders in family STEM nights is a critical component of this project to incorporate the Lakota culture into programming. Elders and tribal leaders participating will be provided an honorarium of \$100 (4 individuals \* 4 events. The total amount is \$1,600
- In addition to working with school officials, AISES will call on Lakota Elders to assist in developing curriculum that includes the Lakota culture in its materials. AISES will provide a \$250 honorarium to 4 elders = \$1,000
- Registration for students to participate in the virtual science fair participation is calculated as follows: \$25 per student \* 20 students. The total will be \$500.

### **Indirect Charges - \$27,208.25**

Our current approved federal Indirect Cost rate is 25.31% (\$24,449.46) and this is charged on all items except for the pass through expenses which are calculated at 6.32% (\$2,758.79)

## **American Indian Science and Engineering Society**

## NYCP Budget Narrative

### Year Three

#### **Personnel - \$33,200**

The *Traditional Knowledge, New Ideas, A Better Cheyenne River* project will pay the prorated amounts of salaries for the AISES Director of Special Projects and Research (project director), AISES Program Officer, AISES Director of Business and Program Development and CRST Program Coordinator.

The AISES Director of Special Projects and Research will be responsible of oversight of all planning and program delivery through the duration of the grant. This Director will develop evaluation tools and processes to measure knowledge transfer, participation and overall benefit to the participants and community.

The AISES Program Officer will be the primary point of contact for the C-EB schools and the tribe. Additionally, the Program Officer will deliver Power Up Workshops, Coordinate Web-based Trainings for educators, work with tribal and school officials to develop and deliver family STEM activities, coordinate participation in National Conference, Science Bowl, Science Fair and Energy Challenge.

The AISES Director of Business and Program Development is a member of the Cheyenne River Sioux Tribe. This Director will assist in the development and delivery of culturally appropriate curriculum and activities. Director will also work with the CRST school and tribal officials to fully engage and educate all tribal officials on the importance of STEM programming and opportunities for its youth. Director will travel to CRST to conduct annual review of the program with educators and tribal officials.

The CRST program coordinator will be identified by the tribal education department. Coordinator will work with AISES staff on planning all events and activities, in addition to conducting outreach throughout the grant period.

The positions and their time allocations and salaries allocated toward this project on a prorated basis are estimated as follows: Director of Programs, (10% of \$87,000 annual salary) (\$8,700); Program Officer, (25% of \$52,000) (\$12,500); Director of Business and Program Development, (10% of \$80,000) (\$8,000), CRST Program Coordinator (10% of \$40,000) (\$4,000).

#### **Fringe Benefits - \$8,300**

Taxes and fringe benefits are calculated at the following rates:

- FICA at 8% of wages for a total of \$2,656.
- SUI calculated at 2% salary. Total SUI is \$664.
- Worker's compensation is calculated at .50 %. The total is \$166.
- Health/dental/vision/life at 11.5% available to all full time employees. The total is \$3,818.
- AISES 403(b) match is calculated at 3%. The total is \$996.

#### **Travel - \$34,000**

The travel category covers airfare, lodging, meals, mileage and any participation fees for the following: Participation in the annual AISES National Conference for students and educators, AISES staff travel to conduct Power Up Workshops and Family STEM nights, regional robotics competition for students.

- 6 C-EB teachers will attend and participate in AISES' 3-day National Conference. (\$600 air fare, \$150/night hotel \*4 nights, \$50/day per diem and ground transport, \$450 ea. Registration) – Total of \$ 11,100
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- AISES staff travel to present Power Up Workshops and Family/Community STEM activity and college preparation nights (\$600 air fare, \$150/night hotel \* 2 nights, \$100/day per diem and ground transport, \$300 rental car) x 4 trips – Total of \$5,600
- Travel and registration to regional robotics competition (\$150 registration + \$350 food and transportation) x 4 teams – Total of \$2,000

### **Equipment - \$22,600**

The equipment category includes all of the robotics kits, robot balls and operating devices. Said equipment has a life span of 1-3 years. In the introductory year, equipment will be introduced and in subsequent years, additional robotics equipment will further expand programming to include more students.

- VEX EDR Robotic Kits: Each EDR Kits come complete with all of the pieces, sensors, linkages and software for students to work together to build a robot as a classroom exercise or competition (1 for Jr. High, 1 for High School) \* \$1,200/ea = \$2,400
- LEGO WeDo 2.0 Kits: Each LEGO kit comes fully equipped with 8 complete robot sets. Sets include bricks, sensors, motor and smart hub. (2 for Elementary School, 2 for Upper Elementary) \* \$850 = \$3,400
- Sphero Robots and Operating Devices: Each Sphero SPRK sets come with a dozen robot balls that pair to a device (Apple, Android, Tablet). (1 for Elementary, 2 for Upper Elementary, 2 for Jr. High, 2 for High School) 7 total \* \$2,400/set = 16,800

### **Supplies - \$7,600**

Supplies include materials for the Power Up workshops and hospitality for family night and other after school activities, specifically Robotics Club.

- Power Up Workshop Supplies: Each year AISES staff will make four trips to Cheyenne River to deliver Power-Up curriculum to students in the Upper Elementary, Jr. High and High Schools. During each trip 4 workshops will be delivered. The estimated amount spent on supplies and to provide Power Up Manuals for students and teachers is \$200. The total cost for Power Up Workshop supplies = 4 sessions \* 4 trips \* \$200 = \$3,200
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- VEX Robotics Weekly Team meeting hospitality: \$25/event \* 10 weeks \* 2 groups of teams = \$500
- Office Supplies: Each partner (AISES, C-EB Schools and CRST) will have an annual allowance for supplies to include paper, ink, printing and other general supplies: \$500\*3=\$1,500

### **Contractual - \$12,000**

The contractual category includes the consulting fee of the independent evaluator, Dr. Wren Walker Robbins. As the evaluator Dr. Robbins will individually evaluate specific project programs as well as the effectiveness of the entire project itself. Dr. Robbins is partner in the Changing Communities consulting group. Changing Communities' mission is to build STEM education and research programs that engage and grow diverse learners through cross-cultural partnership development, cultural proficiency workshops, facilitated programming, coaching, and programming planning and evaluation. Dr. Robbins has expressed her willingness to serve as the independent evaluator to AISES staff. As a Mohawk scientist, educator, and long-time AISES member, Dr. Robbins has a multitude of experiences to aid in her evaluation of the project, ability to contribute toward improving program elements in order to meet desired objectives, and identify effective strategies to be disseminated and replicated. Dr. Robbins will spend an estimated 3 weeks (120 hours) developing, implementing, compiling and analyzing data, and writing a summary report each year at an hourly rate of \$100 (120 hours \* 100/hour = \$12,000/year).

### **Construction - \$0**

No construction costs are included in the budget.

### **Other - \$31,600**

The "Other" category includes academic scholarships, teacher and program coordinator stipends, honorarium for tribal elders, and registration for virtual science fair participation.

- AISES will assist CRST in establishing a STEM academic scholarship program where 10 students would be awarded scholarships in the amount of \$2,000/academic year = \$20,000
- Stipends for teachers to coach the VEX activities club will compensate them for their time and expertise. We estimate 2 teachers \* \$50/week \* 10 weeks. The total will be \$1,000.
- Stipends for teachers to prepare students to participate in the virtual science fair will compensate them for their time and expertise. We estimate 6 teachers \* \$50/week \* 10 weeks. The total will be \$3,000.
- AISES will work closely with an administrator from the C-EB schools through the duration of the project to coordinate activities, evaluate needs, etc. Administrator will spend up to 100/hrs at a rate of \$25. The total will be \$2,500
- AISES will work with the C-EB High School Guidance Counselor in order to identify students to participate in National Conference. Additionally, the counselor will provide

college prep programming to students by assisting with college tours and presentations, applications (admissions and financial aid), etc. Guidance Counselor will spend up to 100/hrs at a rate of \$25. The total will be \$2,500.

- Including tribal leadership and community elders in family STEM nights is a critical component of this project to incorporate the Lakota culture into programming. Elders and tribal leaders participating will be provided an honorarium of \$100 (4 individuals \* 4 events). The total amount is \$1,600
- In addition to working with school officials, AISES will call on Lakota Elders to assist in developing curriculum that includes the Lakota culture in its materials. AISES will provide a \$250 honorarium to 4 elders = \$1,000
- Registration for students to participate in the virtual science fair participation is calculated as follows: \$25 per student \* 20 students. The total will be \$500.

### **Indirect Charges - \$29,638.01**

Our current approved federal Indirect Cost rate is 25.31% (\$26,879.22) and this is charged on all items except for the pass through expenses which are calculated at 6.32% (\$2,758.79)

## **American Indian Science and Engineering Society NYCP Budget Narrative**

### **Year Four**

#### **Personnel - \$33,200**

The *Traditional Knowledge, New Ideas, A Better Cheyenne River* project will pay the prorated amounts of salaries for the AISES Director of Special Projects and Research (project director), AISES Program Officer, AISES Director of Business and Program Development and CRST Program Coordinator.

The AISES Director of Special Projects and Research will be responsible of oversight of all planning and program delivery through the duration of the grant. This Director will develop evaluation tools and processes to measure knowledge transfer, participation and overall benefit to the participants and community.

The AISES Program Officer will be the primary point of contact for the C-EB schools and the tribe. Additionally, the Program Officer will deliver Power Up Workshops, Coordinate Web-based Trainings for educators, work with tribal and school officials to develop and deliver family STEM activities, coordinate participation in National Conference, Science Bowl, Science Fair and Energy Challenge.

The AISES Director of Business and Program Development is a member of the Cheyenne River Sioux Tribe. This Director will assist in the development and delivery of culturally appropriate curriculum and activities. Director will also work with the CRST school and tribal officials to fully engage and educate all tribal officials on the importance of STEM programming and opportunities for its youth. Director will travel to CRST to conduct annual review of the

program with educators and tribal officials.

The CRST program coordinator will be identified by the tribal education department. Coordinator will work with AISES staff on planning all events and activities, in addition to conducting outreach throughout the grant period.

The positions and their time allocations and salaries allocated toward this project on a prorated basis are estimated as follows: Director of Programs, (10% of \$87,000 annual salary) (\$8,700); Program Officer, (25% of \$52,000) (\$12,500); Director of Business and Program Development, (10% of \$80,000) (\$8,000), CRST Program Coordinator (10% of \$40,000) (\$4,000).

### **Fringe Benefits - \$8,300**

Taxes and fringe benefits are calculated at the following rates:

- FICA at 8% of wages for a total of \$2,656.
- SUI calculated at 2% salary. Total SUI is \$664.
- Worker's compensation is calculated at .50 %. The total is \$166.
- Health/dental/vision/life at 11.5% available to all full time employees. The total is \$3,818.
- AISES 403(b) match is calculated at 3%. The total is \$996.

### **Travel - \$34,000**

The travel category covers airfare, lodging, meals, mileage and any participation fees for the following: Participation in the annual AISES National Conference for students and educators, AISES staff travel to conduct Power Up Workshops and Family STEM nights, regional robotics competition for students.

- 6 C-EB teachers will attend and participate in AISES' 3-day National Conference. (\$600 air fare, \$150/night hotel \*4 nights, \$50/day per diem and ground transport, \$450 ea. Registration) – Total of \$ 11,100
- 12 C-EB High School Students will attend and participate in AISES' 3-day National Conference. (\$600 air fare, \$75/night hotel \* 4 nights, \$50/day per diem and ground transport, \$175 total registration) – Total of \$15,300
- AISES staff travel to present Power Up Workshops and Family/Community STEM activity and college preparation nights (\$600 air fare, \$150/night hotel \* 2 nights, \$100/day per diem and ground transport, \$300 rental car) x 4 trips – Total of \$5,600
- Travel and registration to regional robotics competition (\$150 registration + \$350 food and transportation) x 4 teams – Total of \$2,000

### **Equipment - \$13,000**

The equipment category includes all of the robotics kits, robot balls and operating devices. Said equipment has a life span of 1-3 years. In the introductory year, equipment will be introduced and in subsequent years, additional robotics equipment will further expand programming to include more students.

- VEX EDR Robotic Kits: Each EDR Kits come complete with all of the pieces, sensors, linkages and software for students to work together to build a robot as a classroom exercise or competition (1 for Jr. High, 1 for High School) \* \$1,200/ea = \$2,400
- LEGO WeDo 2.0 Kits: Each LEGO kit comes fully equipped with 8 complete robot sets. Sets include bricks, sensors, motor and smart hub. (2 for Elementary School, 2 for Upper Elementary) \* \$850 = \$3,400
- Sphero Robots and Operating Devices: Each Sphero SPRK sets come with a dozen robot balls that pair to a device (Apple, Android, Tablet). (1 for Elementary, 2 for Upper Elementary, 2 for Jr. High, 2 for High School) 2 total \* \$2,400/set = \$7,200

### **Supplies - \$7,600**

Supplies include materials for the Power Up workshops and hospitality for family night and other after school activities, specifically Robotics Club.

- Power Up Workshop Supplies: Each year AISES staff will make four trips to Cheyenne River to deliver Power-Up curriculum to students in the Upper Elementary, Jr. High and High Schools. During each trip 4 workshops will be delivered. The estimated amount spent on supplies and to provide Power Up Manuals for students and teachers is \$200. The total cost for Power Up Workshop supplies = 4 sessions \* 4 trips \* \$200 = \$3,200
- Family night, community event/activity hospitality: Estimating 20 families of 2 and food cost of \$10/person \* 4 events= 600 = \$2,400
- VEX Robotics Weekly Team meeting hospitality: \$25/event \* 10 weeks \* 2 groups of teams = \$500
- Office Supplies: Each partner (AISES, C-EB Schools and CRST) will have an annual allowance for supplies to include paper, ink, printing and other general supplies: \$500\*3= \$1,500

### **Contractual - \$12,000**

The contractual category includes the consulting fee of the independent evaluator, Dr. Wren Walker Robbins. As the evaluator Dr. Robbins will individually evaluate specific project programs as well as the effectiveness of the entire project itself. Dr. Robbins is partner in the Changing Communities consulting group. Changing Communities' mission is to build STEM education and research programs that engage and grow diverse learners through cross-cultural partnership development, cultural proficiency workshops, facilitated programming, coaching, and programming planning and evaluation. Dr. Robbins has expressed her willingness to serve as the independent evaluator to AISES staff. As a Mohawk scientist, educator, and long-time AISES member, Dr. Robbins has a multitude of experiences to aid in her evaluation of the project, ability to contribute toward improving program elements in order to meet desired objectives, and identify effective strategies to be disseminated and replicated. Dr. Robbins will spend an estimated 3 weeks (120 hours) developing, implementing, compiling and analyzing data, and writing a summary report each year at an hourly rate of \$100 (120 hours \* 100/hour = \$12,000/year).

### **Construction - \$0**

No construction costs are included in the budget.

**Other - \$31,600**

The “Other” category includes academic scholarships, teacher and program coordinator stipends, honorarium for tribal elders, and registration for virtual science fair participation.

- AISES will assist CRST in establishing a STEM academic scholarship program where 10 students would be awarded scholarships in the amount of \$2,000/academic year = \$20,000
- Stipends for teachers to coach the VEX activities club will compensate them for their time and expertise. We estimate 2 teachers \* \$50/week \* 10 weeks. The total will be \$1,000.
- Stipends for teachers to prepare students to participate in the virtual science fair will compensate them for their time and expertise. We estimate 6 teachers \* \$50/week \* 10 weeks. The total will be \$3,000.
- AISES will work closely with an administrator from the C-EB schools through the duration of the project to coordinate activities, evaluate needs, etc. Administrator will spend up to 100/hrs at a rate of \$25. The total will be \$2,500
- AISES will work with the C-EB High School Guidance Counselor in order to identify students to participate in National Conference. Additionally, the counselor will provide college prep programming to students by assisting with college tours and presentations, applications (admissions and financial aid), etc. Guidance Counselor will spend up to 100/hrs at a rate of \$25. The total will be \$2,500.
- Including tribal leadership and community elders in family STEM nights is a critical component of this project to incorporate the Lakota culture into programming. Elders and tribal leaders participating will be provided an honorarium of \$100 (4 individuals \* 4 events. The total amount is \$1,600
- In addition to working with school officials, AISES will call on Lakota Elders to assist in developing curriculum that includes the Lakota culture in its materials. AISES will provide a \$250 honorarium to 4 elders = \$1,000
- Registration for students to participate in the virtual science fair participation is calculated as follows: \$25 per student \* 20 students. The total will be \$500.

**Indirect Charges - \$27,208.25**

Our current approved federal Indirect Cost rate is 25.31% (\$24,449.46) and this is charged on all items except for the pass through expenses which are calculated at 6.32% (\$2,758.79)

U.S. DEPARTMENT OF EDUCATION  
SUPPLEMENTAL INFORMATION  
FOR THE SF-424

**1. Project Director:**

Prefix: Dr.	First Name: Kathy	Middle Name:	Last Name: DeerInWater	Suffix:
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Address:

Street1:	2305 Renard SE, Suite 200
Street2:	
City:	Albuquerque
County:	
State:	NM: New Mexico
Zip Code:	87106-4313
Country:	USA: UNITED STATES

Phone Number (give area code)	Fax Number (give area code)
(720) 552-6123	(720) 526-6940

Email Address:  
kdeerinwater@aises.org

**2. Novice Applicant:**

Are you a novice applicant as defined in the regulations in 34 CFR 75.225 (and included in the definitions page in the attached instructions)?  
 Yes  No  Not applicable to this program

**3. Human Subjects Research:**

a. Are any research activities involving human subjects planned at any time during the proposed Project Period?  
 Yes  No

b. Are ALL the research activities proposed designated to be exempt from the regulations?

Yes Provide Exemption(s) #:  1  2  3  4  5  6

No Provide Assurance #, if available:

c. If applicable, please attach your "Exempt Research" or "Nonexempt Research" narrative to this form as indicated in the definitions page in the attached instructions.

	Add Attachment	Delete Attachment	View Attachment
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**U.S. DEPARTMENT OF EDUCATION  
BUDGET INFORMATION  
NON-CONSTRUCTION PROGRAMS**

OMB Number: 1894-0008  
Expiration Date: 06/30/2017

Name of Institution/Organization

American Indian Science and Engineering Society

Applicants requesting funding for only one year should complete the column under "Project Year 1." Applicants requesting funding for multi-year grants should complete all applicable columns. Please read all instructions before completing form.

**SECTION A - BUDGET SUMMARY  
U.S. DEPARTMENT OF EDUCATION FUNDS**

Budget Categories	Project Year 1 (a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	33,200.00	33,200.00	33,200.00	33,200.00		132,800.00
2. Fringe Benefits	8,300.00	8,300.00	8,300.00	8,300.00		33,200.00
3. Travel	34,000.00	34,000.00	34,000.00	34,000.00		136,000.00
4. Equipment	25,000.00	13,000.00	22,600.00	13,000.00		73,600.00
5. Supplies	7,600.00	7,600.00	7,600.00	7,600.00		30,400.00
6. Contractual	12,000.00	12,000.00	12,000.00	12,000.00		48,000.00
7. Construction						
8. Other	32,100.00	32,100.00	32,100.00	32,100.00		128,400.00
9. Total Direct Costs (lines 1-8)	152,200.00	140,200.00	149,800.00	140,200.00		582,400.00
10. Indirect Costs*	30,245.45	27,208.25	29,638.01	27,208.25		114,299.96
11. Training Stipends						
12. Total Costs (lines 9-11)	182,445.45	167,408.25	179,438.01	167,408.25		696,699.96

**\*Indirect Cost Information (To Be Completed by Your Business Office):**

If you are requesting reimbursement for indirect costs on line 10, please answer the following questions:

(1) Do you have an Indirect Cost Rate Agreement approved by the Federal government?  Yes  No

(2) If yes, please provide the following information:

Period Covered by the Indirect Cost Rate Agreement: From: 08/23/2011 To: 12/31/2016 (mm/dd/yyyy)

Approving Federal agency:  ED  Other (please specify): Department of Labor

The Indirect Cost Rate is 25.31%.

(3) If this is your first Federal grant, and you do not have an approved indirect cost rate agreement, are not a State, Local government or Indian Tribe, and are not funded under a training rate program or a restricted rate program, do you want to use the de minimis rate of 10% of MTDC?  Yes  No If yes, you must comply with the requirements of 2 CFR § 200.414(f).

(4) If you do not have an approved indirect cost rate agreement, do you want to use the temporary rate of 10% of budgeted salaries and wages?  
 Yes  No If yes, you must submit a proposed indirect cost rate agreement within 90 days after the date your grant is awarded, as required by 34 CFR § 75.560.

(5) For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:

Is included in your approved Indirect Cost Rate Agreement? Or,  Complies with 34 CFR 76.564(c)(2)? The Restricted Indirect Cost Rate is 6.32%.  
PR/Award # S299A160085

Name of Institution/Organization American Indian Science and Engineering Society	Applicants requesting funding for only one year should complete the column under "Project Year 1." Applicants requesting funding for multi-year grants should complete all applicable columns. Please read all instructions before completing form.	
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**SECTION B - BUDGET SUMMARY  
NON-FEDERAL FUNDS**

Budget Categories	Project Year 1 (a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel						
2. Fringe Benefits						
3. Travel						
4. Equipment						
5. Supplies						
6. Contractual						
7. Construction						
8. Other						
9. Total Direct Costs (lines 1-8)						
10. Indirect Costs						
11. Training Stipends						
12. Total Costs (lines 9-11)						

**SECTION C - BUDGET NARRATIVE (see instructions)**

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