Preview of Award 1444853 - Annual Project Report

Cover
Federal Agency and Organization Element to Which Report is Submitted:

Federal Grant or Other Identifying Number Assigned by Agency: 1444853

Project Title: Lighting the Pathway to Faculty Careers for Natives in STEM

PD/PI Name:
Sarah Echohawk, Principal Investigator
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Melinda McClanahan, Co-Principal Investigator
Robert E Megginson, Co-Principal Investigator
Mary Jo Ondrechen, Co-Principal Investigator

Recipient Organization: American Indian Science and Engineering Society (AISES)

Project/Grant Period: 08/15/2014 - 07/31/2019

Reporting Period: 08/01/2017 - 07/31/2018

Submitting Official (if other than PD/PI): Sarah Echohawk
Principal Investigator

Submission Date: 06/28/2018

Signature of Submitting Official (signature shall be submitted in accordance with agency specific instructions) Sarah Echohawk

Accomplishments

* What are the major goals of the project?

The major goal of this project is to increase the representation of American Indians, Alaskan Natives, and Native Hawaiians in STEM faculty positions across the country. Key objectives of the project include: 1) achieve student persistence in STEM degree programs and high rates of degree attainment; 2) assist Scholars to develop a strong set of qualifications (e.g., research experience, portfolio building) to advance to the next level; 3) achieve high rates of student advancement to the
next academic/career rank; 4) increase Scholars’ understanding of academic careers (e.g., what is required to become and to succeed as a professor in a STEM field); 5) increase Scholars’ understanding of the integration of Native culture and traditions within an academic STEM career; 6) increase the number of A/ANs in STEM faculty positions in the long-term; and 7) by the end of the fifth year, publish results of an externally-conducted evaluation of this pilot to assess the value of this experience for the Scholars and its impact on their academic and professional paths. These findings will serve as a guide for future, expanded-scale projects and will also inform application to other underrepresented groups.

*What was accomplished under these goals (you must provide information for at least one of the 4 categories below)?*

**Major Activities:** LTP scholars and faculty mentors convened at two in-person events, the AISES National Conference in Denver, CO in September 2017 and the AISES Leadership Summit in Alpine, CA in March 2018. At both events the LTP Program Director developed and hosted the Faculty Career Development Workshop to provide professional development, community building, and in-person mentorship to LTP scholars. The Faculty Career Development Workshop consisted of a full, pre-conference day of programming attended by LTP scholars and LTP faculty. The workshop included: 1) networking with faculty mentors, peers, and other scholars; 2) informational talks on funding, fellowships, and research opportunities; 3) career exploration; 4) academic career track guidance; and 5) cultural activities and discussions about Native identity and STEM research and careers. 52 LTP scholars and 8 LTP faculty mentors attended the National Conference. 23 LTP scholars and 3 LTP faculty mentors attended the Leadership Summit.

To further enhance the professional development received by LTP scholars, AISES is currently developing and providing a summer webinar series. The webinar series is occurring over the summer to increase participation and engagement in webinars.

Monthly mentor-mentee meetings are a major activity of this program. These meetings help the students to persist in their degree programs, complete degrees, and advance to the next level, while increasing understanding of academic careers, and integrating native culture and traditions within an academic STEM career.

Cohort 3 and 4 scholars received stipends for their participation in the program as well as travel funding to attend the AISES National Conference and either the AISES Leadership Summit or a discipline-specific conference of their choice. Scholars who attended the AISES National Conference also presented their research via an oral or poster presentation.

**Specific Objectives:** Key objectives of the project include: 1) achieve student persistence in STEM degree programs and high rates of degree attainment; 2) assist Scholars to develop a strong set of qualifications (e.g., research experience, portfolio building) to advance to the next level; 3) achieve high rates of student advancement to the next academic/career rank; 4) increase Scholars’ understanding of academic careers (e.g., what is required to become and to succeed as a professor in a STEM field); 5) increase Scholars’ understanding of the integration of Native culture and traditions within an academic STEM career; 6) increase the number of Natives in STEM faculty positions in the long-term; and 7) by the end of the fifth year, publish results of an externally conducted evaluation of this pilot to assess the value of this experience for the Scholars and its impact on their academic and professional paths. These findings will serve as a guide for future, expanded scale projects and will also inform application to other underrepresented groups.

**Significant Results:** The LTP program now has 100 scholars in four cohorts, all are American Indian, Alaska Native, or Native Hawaiian undergraduate and graduate students or post-doctoral scholars in STEM fields. The program also includes more than 35 Native, STEM faculty mentors.
36 of 80 scholars are continuing students and post docs.
35 of 80 scholars completed degrees while in the program.
25 of the 35 who completed degrees moved on to the next academic stage.
5 of the 80 scholars are now Faculty or negotiating Faculty positions.

Of the 100 LTP scholars, 37 began the program studying disciplines within the biological sciences. Over the past 4 years 15 scholars completed their degree, 7 are currently undergraduates, 8 are Master’s students, 9 are in PhD programs, 6 are now Post Doctorates, 5 are now science professionals, and 1 has moved on to a faculty position. Of the 100 LTP scholars, 18 began the program studying engineering disciplines. Over the past 4 years 6 scholars completed their degree, 2 are currently undergraduates, 2 are Master’s students, 6 are in PhD programs, 1 is now a Post Doctorate, 3 are now engineering professionals, and 1 has moved on to a faculty position. Of the 100 LTP scholars, 19 began the program studying geoscience disciplines. Over the past 4 years 5 scholars completed their degree, 2 are currently undergraduates, 3 are Master’s students, 3 are in PhD programs, 3 are now Post Doctorates, 1 is now a geoscience professional, and 1 has moved on to a faculty position. Of the 100 LTP scholars, 15 began the program studying disciplines within mathematical and physical sciences. Over the past 4 years 6 scholars completed their degree, 3 are currently undergraduates, 10 are in PhD programs, 3 are now Post Doctorates, 6 are now STEM professionals, and 1 has moved on to a faculty position. Of the 100 LTP scholars, 4 began the program studying computer science. Over the past 4 years 2 scholars completed their degrees, 2 are current undergraduate students, 1 is in a PhD program, and 1 is a computer science professional. Of the 100 LTP scholars, 6 began the program studying STEM education. Over the past 4 years 2 scholars completed their degree, 1 is currently a Master’s student, 3 are in PhD programs, 1 is now a Post Doctorate, and 1 has moved on to a faculty position. Of the 100 LTP scholars, 3 began the program studying computer science and are currently in PhD programs.

The LTP project has generated a one-of-a-kind longitudinal dataset on 100 Native scholars. Scholars receive surveys every six months starting immediately upon acceptance into the program (i.e. baseline), with the goal of collecting data on 100 scholars for two years. Scholars in the program have maintained stable STEM Efficacy, STEM Identity, STEM Values, and intention to persist in STEM. STEM Identity is significantly correlated with Intention to Persist in STEM. The surveys also provide information on aspects of mentorship pertaining to Native scholars. For example, the extent to which their mentor shares their cultural values and the importance of having a mentor who can related to their Native culture and identity are significantly correlated with their Intention to Persist in STEM, and overall satisfaction with their mentor was also significantly correlated with their Intention to Persist. Additionally, to what extent a mentor shared a student’s cultural values is significantly correlated with their satisfaction with their mentor. This project is illuminating important insights into the mechanisms facilitating persistence in STEM among Native scholars.

Key outcomes or Other achievements:

Key findings from the independent evaluation and bi-annual surveys completed by LTP scholars indicate: 1) The vast majority of scholars report high to moderate satisfaction with their mentors (73% of 2015 cohort, 55% of 2014 Cohort, and 53% of the 2016 Cohort), 2) Scholars report strong and relatively stable intentions to pursue a STEM career throughout the 3 cohorts, and 3) Students in all three cohorts rated sharing culture with mentors as most valuable to them.

Data collected through the surveys help us to answer the question: What predicts a scholar maintaining high intentions to persist? In terms of predicting persistence (measured by intentions), the data shows two interesting relationships:

1. The more students endorsed scientific community values, the stronger their intentions were to pursue a STEM related career at 18 months for the 2014 Cohort ($r=.45$, $p<.05$) and 6 months for the 2015 Cohort ($r=.62$, $p<.01$), however that
relationship was not significant for the 2014 Cohort in the spring 2017 (30M) and the 2015 Cohort (18M). This lack of significance might be due to the fact that half of the participants are no longer in their respective cohorts and thus there is less power to detect these relationships.

2. The higher students reported Scientific Identity, the more strongly they intended to pursue a STEM related career for the 2014 Cohort \( (r=.76, p<.01) \) and the 2015 Cohort \( (r=.68, p<.01) \), and this relationship remained for the 2014 Cohort in the spring 2017 \( (r=.50, p<.05) \).

For the 2015 Cohort there is a positive relationship between baseline intentions to pursue a STEM research career and their spring 2017 science efficacy \( (r=.62, p<.05) \).

Data collected through the surveys also help us to answer the question: What does quality mentorship relate to? The following relationship analysis is from the longitudinal data for the 2014 Cohort for the spring 2017 now 30 months from baseline and currently graduated out of the program and the 2015 Cohort also for spring 2017 18 months into the program and currently still active in the AISES program.

- For the 2014 Cohort, current intention was positively related to the importance of their perception of shared cultural values with their mentor \( (r=.52, P<.05) \).
- Current quality of mentorship is related to current intentions to pursue science careers for some students. Scholars in the 2015 Cohort who report experiencing more satisfactory quality mentorship are more likely to intend to persist \( (r=.68, P<.05) \).
- For the 2015 Cohort their current intentions to pursue a STEM related career was positively correlated with how often their mentor encouraged them to talk about their fears and anxiety \( (r=.67, P<.05) \), helped them complete an assignment \( (r=.72, P<.05) \), challenged them to learn new skills \( (r=.68, P<.05) \), helped them network outside of the university \( (r=.61, P<.05) \), and helped them network within their field inside the university \( (r=.74, P<.01) \) as well as network with other professionals within their field \( (r=.81, P<.01) \).
- Intentions to persists, for those in the 2016 Cohort, is positively related to mentors who have discussed the student’s feelings of competence \( (r=.45, P<.05) \) and conveyed empathy for their concerns \( (r=.48, P<.05) \).

Please note that as we continue to add cohorts to the study and the number of participants goes up, we will be able to test the above relationships using more sophisticated methodologies. But these preliminary findings are promising and potentially publishable.

* What opportunities for training and professional development has the project provided?

Undergraduate students received assistance applying for and securing REU positions. Through faculty mentor connections, a number of undergraduate students were able to secure summer research positions. LTP scholars receive significant professional development through the Faculty Career Development Workshops provided during in-person gatherings and webinars, as described above. Scholars learned about portfolio building fellowships and funding opportunities and other information from peers and faculty mentors in the program, enhancing their understanding of and ability to navigate the academic career track.

* How have the results been disseminated to communities of interest?

Co-PI Dr. Mary Jo Ondrechen has presented on the LTP program at an ACS meeting in year 3. The Project Director, Dr. Kathy DeerInWater frequently presents on the LTP program during various partner and potential funder meetings, and promotes the program via AISES communications and social media to the AISES Network. In February 2018, Dr. DeerInWater presented the current results and key findings of the LTP program to NSF program officers.

* What do you plan to do during the next reporting period to accomplish the goals?

The Program Director plans to continue to coordinate and conduct more webinars, provide additional mentor-mentee training, continue to facilitate peer mentorship focus on publication, grant writing, and community/network building. Additionally, AISES hopes to further develop virtual community building and virtual engagement by updating the LTP program Facebook group to
share information regarding students’ success stories, education and career resources, and prepare students for the next season of applications (i.e. fellowship, graduate school, and postdoc applications). AISES will continue to have its in-person events and further develop the Faculty Career Development Workshop to meet the changing needs of the LTP scholars and faculty mentors. Mentors and mentees will continue to meet and peer mentoring will also continue. AISES will also continue to administer participant stipends, travel funding, and participate in the evaluation and research components of this project.

**Products**

**Books**
Nothing to report.

**Book Chapters**
Nothing to report.

**Inventions**
Nothing to report.

**Journals or Juried Conference Papers**
Nothing to report.

**Licenses**
Nothing to report.

**Other Conference Presentations / Papers**
Nothing to report.

**Other Products**
Nothing to report.

**Other Publications**
Nothing to report.

**Patents**
Nothing to report.

**Technologies or Techniques**
Nothing to report.

**Thesis/Dissertations**
Nothing to report.

**Websites**
Nothing to report.

**Participants/Organizations**

**What individuals have worked on the project?**

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**Full details of individuals who have worked on the project:**

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**Email:** sechowak@aises.org  
**Most Senior Project Role:** PD/PI  
**Nearest Person Month Worked:** 1

**Contribution to the Project:** Oversees operation of the program and grant budget.

**Funding Support:** None

**International Collaboration:** No  
**International Travel:** No

**Chris J Cornelius**

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**Most Senior Project Role:** Co PD/PI  
**Nearest Person Month Worked:** 0

**Contribution to the Project:** Serves as faculty mentor

**Funding Support:** None

**International Collaboration:** No  
**International Travel:** No
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Most Senior Project Role: Co PD/PI  
Nearest Person Month Worked: 0  

Contribution to the Project: Advisor  
Funding Support: None  
International Collaboration: No  
International Travel: No  

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Most Senior Project Role: Co PD/PI  
Nearest Person Month Worked: 0  

Contribution to the Project: Serves as faculty mentor  
Funding Support: None  
International Collaboration: No  
International Travel: No  

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Most Senior Project Role: Co PD/PI  
Nearest Person Month Worked: 0  

Contribution to the Project: Serves as faculty mentor and adviser  
Funding Support: None  
International Collaboration: No  
International Travel: No  

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Nearest Person Month Worked: 0  

Contribution to the Project: Mentor  
Funding Support: None  
International Collaboration: No  
International Travel: No  

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Nearest Person Month Worked: 0  

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor

Funding Support: None

International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor

Funding Support: None

International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor

Funding Support: None

International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor

Funding Support: None

International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor

Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0
Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0
Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0
Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0
Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0
Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No
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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0
Contribution to the Project: Mentor

Funding Support: None

International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor

Funding Support: None

International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Mentor

Funding Support: None

International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Scholar

Funding Support: None

International Collaboration: No
International Travel: No

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Most Senior Project Role: Faculty
Nearest Person Month Worked: 0

Contribution to the Project: Mentor

Funding Support: None

International Collaboration: No
International Travel: No
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Most Senior Project Role: Postdoctoral (scholar, fellow or other postdoctoral position)  
Nearest Person Month Worked: 0  
Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0  
Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0  
Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Most Senior Project Role: Postdoctoral (scholar, fellow or other postdoctoral position)  
Nearest Person Month Worked: 0  
Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

Megan Kiedrowski  
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Most Senior Project Role: Postdoctoral (scholar, fellow or other postdoctoral position)  
Nearest Person Month Worked: 0  
Contribution to the Project: Scholar  
Funding Support: None
International Collaboration: No
International Travel: No

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Most Senior Project Role: Postdoctoral (scholar, fellow or other postdoctoral position)
Nearest Person Month Worked: 0
Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Most Senior Project Role: Postdoctoral (scholar, fellow or other postdoctoral position)
Nearest Person Month Worked: 0
Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Most Senior Project Role: Postdoctoral (scholar, fellow or other postdoctoral position)
Nearest Person Month Worked: 0
Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

Kathy DeerInWater
Email: kdeerinwater@aises.org
Most Senior Project Role: Other Professional
Nearest Person Month Worked: 6
Contribution to the Project: Serves as the program director. The program director develops, plans, and coordinates all Pathway activities, facilitates interactions between mentors and students in the program, manages the grant budget and oversees the ultimate success of the Pathway program.
Funding Support: None
International Collaboration: No
International Travel: No

Chad Auginash
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Most Senior Project Role: Graduate Student (research assistant)
Nearest Person Month Worked: 0

Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Most Senior Project Role: Graduate Student (research assistant)
Nearest Person Month Worked: 0

Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Most Senior Project Role: Graduate Student (research assistant)
Nearest Person Month Worked: 0

Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Most Senior Project Role: Graduate Student (research assistant)
Nearest Person Month Worked: 0

Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

---

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**Most Senior Project Role:** Graduate Student (research assistant)
**Nearest Person Month Worked:** 0

**Contribution to the Project:** Scholar
**Funding Support:** None

International Collaboration: No
International Travel: No

---

**Rebecca Buckman**
**Email:** rsbuckman@gmail.com
**Most Senior Project Role:** Graduate Student (research assistant)
**Nearest Person Month Worked:** 0

**Contribution to the Project:** Scholar
**Funding Support:** None

International Collaboration: No
International Travel: No

---

**Landon Charlo**
**Email:** lcharlo@wsu.edu
**Most Senior Project Role:** Graduate Student (research assistant)
**Nearest Person Month Worked:** 0

**Contribution to the Project:** Scholar
**Funding Support:** None

International Collaboration: No
International Travel: No

---

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**Most Senior Project Role:** Graduate Student (research assistant)
**Nearest Person Month Worked:** 0

**Contribution to the Project:** Scholar
**Funding Support:** None

International Collaboration: No
International Travel: No

---

**Katherine Crocker**
**Email:** katherine.crocker@gmail.com
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**Nearest Person Month Worked:** 0
Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Most Senior Project Role: Graduate Student (research assistant)
Nearest Person Month Worked: 0
Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0
Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0
Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0
Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No
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Nearest Person Month Worked: 0  
Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0  
Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0  
Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0  
Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0  
Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0  
Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0  
Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0  
Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0  
Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0
Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0

Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No
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Nearest Person Month Worked: 0  

Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0  

Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0  

Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0  

Contribution to the Project: Scholar  
Funding Support: None  
International Collaboration: No  
International Travel: No

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Nearest Person Month Worked: 0  

Contribution to the Project: Scholar  
Funding Support: None
International Collaboration: No
International Travel: No

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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0
Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Nearest Person Month Worked: 0
Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Funding Support: None
International Collaboration: No
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Funding Support: None
International Collaboration: No
International Travel: No
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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Funding Support: None
International Collaboration: No
International Travel: No

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Funding Support: None
International Collaboration: No
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Contribution to the Project: Scholar
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International Collaboration: No
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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Contribution to the Project: Scholar
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International Collaboration: No
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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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International Collaboration: No
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Contribution to the Project: Scholar
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International Collaboration: No
International Travel: No
International Collaboration: No
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Funding Support: None
International Collaboration: No
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Funding Support: None
International Collaboration: No
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Funding Support: None
International Collaboration: No
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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
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Funding Support: None
International Collaboration: No
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International Collaboration: No
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International Collaboration: No
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International Collaboration: No
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International Collaboration: No
International Travel: No

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International Collaboration: No
International Travel: No

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International Collaboration: No
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Funding Support: None
International Collaboration: No
International Travel: No

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**Funding Support:** None

**International Collaboration:** No

**International Travel:** No

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**Nearest Person Month Worked:** 0

**Contribution to the Project:** Scholar

**Funding Support:** None

**International Collaboration:** No

**International Travel:** No

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**Nearest Person Month Worked:** 0

**Contribution to the Project:** Scholar

**Funding Support:** None

**International Collaboration:** No

**International Travel:** No

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**Nearest Person Month Worked:** 0

**Contribution to the Project:** Scholar

**Funding Support:** None

**International Collaboration:** No

**International Travel:** No

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**Nearest Person Month Worked:** 0

**Contribution to the Project:** Scholar

**Funding Support:** None

**International Collaboration:** No

**International Travel:** No
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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

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Funding Support: None
International Collaboration: No
International Travel: No

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Funding Support: None
International Collaboration: No
International Travel: No

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International Collaboration: No
International Travel: No

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Contribution to the Project: Scholar
Funding Support: None
International Collaboration: No
International Travel: No

What other organizations have been involved as partners?
Nothing to report.

What other collaborators or contacts have been involved?
Dr. Mica Estrada and Ms. Lilibeth Flores from UCSF are the LTP project independent evaluators.

Impacts

What is the impact on the development of the principal discipline(s) of the project?
Currently, there are 1,746 faculty working for tribal colleges and universities (TCUs), of those only 43% are Native and of those Native faculty only 7% have a doctorate degree. For context, across all institutions of higher education, there were only 1,834 American Indian and Alaska Native tenured or tenure track faculty in 2016, which was a decrease from the 1,846 in 2013 (NCES). American Indians represent approximately 2% of the population and American Indian students comprise 1% or less of enrolled undergraduate students; however, American Indian faculty make up only 0.35% of the entire professoriate. There are no studies reporting numbers of Native STEM faculty. To address this lack of representation, the LTP program supports Native students and post doctorates through the establishment of programs and best practices guiding and assisting scholars at each academic and career state, helping them to succeed and advance to the next stage. Findings from the LTP project will contribute significantly to our understanding of how best to support Native higher education students in STEM, especially those pursuing careers in academia.

What is the impact on other disciplines?
Nothing to report.

What is the impact on the development of human resources?
The program now has 100 scholars, all are American Indian, Alaska Native, or Native Hawaiian undergraduate and graduate students or post-doctoral scholars in STEM fields. The program also includes more than 30 Native, STEM faculty mentors.

- 36 of 80 scholars are continuing students and post docs.
- 35 of 80 scholars completed degrees while in the program.
- 25 of the 35 who completed degrees moved on to the next academic stage.
- 5 of the 80 scholars are now Faculty or negotiating Faculty positions.

This program improved the performance, skills, and attitudes of Native American students by improving their persistence, degree attainment, and advancement to the next level. Students also increased their understanding of the academic career track and received professional development aimed at securing fellowship, funding, and research opportunities. These objectives were met through participation in program activities such as inperson AISES events, webinars, monthly mentor meetings, and developing a full circle network of support among program participants.

What is the impact on physical resources that form infrastructure?
Nothing to report.

What is the impact on institutional resources that form infrastructure?
Nothing to report.

What is the impact on information resources that form infrastructure?
Nothing to report.

What is the impact on technology transfer?
Nothing to report.

What is the impact on society beyond science and technology?
Results from this project inform best practices for increasing the representation of Native Americans specifically and underrepresented minorities in general in STEM fields within academia. What we have found so far is the importance of developing a sense of community, access to faculty and peer mentors that are culturally aware and sensitive, and the integration of culture and multiple identities into discussions of STEM research and careers.

Changes/Problems

Changes in approach and reason for change
Nothing to report.

Actual or Anticipated problems or delays and actions or plans to resolve them

This year AISES experienced a delay in mating mentors and mentees. Mentors and mentees are now matched. A change in staffing impacted the workload of the program director, contributing to the delay. AISES has since hired a new staff member to support the LTP program so that no delay are experienced in current and future programming.

Changes that have a significant impact on expenditures
Nothing to report.

Significant changes in use or care of human subjects
Nothing to report.

Significant changes in use or care of vertebrate animals
Nothing to report.

Significant changes in use or care of biohazards
Nothing to report.