

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

APPLICATION FOR GRANTS
UNDER THE

FY18 Professional Development 84.299B

CFDA # 84.299B

PR/Award # S299B180003

Grants.gov Tracking#: GRANT12684773

OMB No. 1810-0580, Expiration Date: 09/30/2018

Closing Date: Jul 30, 2018

PR/Award # S299B180003

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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="07/26/2018"/>	4. Applicant Identifier: <input type="text" value="University of Arizona"/>	
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: <input type="text" value="Arizona Board of Regents, University of Arizona"/>		
* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="742652689"/>	* c. Organizational DUNS: <input type="text" value="8063456170000"/>	
d. Address:		
* Street1:	<input type="text" value="P.O. Box 210158, Room 510"/>	
Street2:	<input type="text"/>	
* City:	<input type="text" value="Tucson"/>	
County/Parish:	<input type="text" value="Pima"/>	
* State:	<input type="text" value="AZ: Arizona"/>	
Province:	<input type="text"/>	
* Country:	<input type="text" value="USA: UNITED STATES"/>	
* Zip / Postal Code:	<input type="text" value="85721-0158"/>	
e. Organizational Unit:		
Department Name: <input type="text" value="Teaching/Learning & Socio"/>	Division Name: <input type="text" value="College of Education"/>	
f. Name and contact information of person to be contacted on matters involving this application:		
Prefix: <input type="text" value="Mr."/>	* First Name:	<input type="text" value="Paul"/>
Middle Name:	<input type="text"/>	
* Last Name:	<input type="text" value="Sandoval"/>	
Suffix:	<input type="text"/>	
Title:	<input type="text" value="Director, Post Award"/>	
Organizational Affiliation: <input type="text" value="Arizona Board of Regents, University of Arizona"/>		
* Telephone Number: <input type="text" value="520-626-6000"/>	Fax Number: <input type="text" value="520-626-4130"/>	
* Email: <input type="text" value="sponsor@email.arizona.edu"/>		

Application for Federal Assistance SF-424

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

H: Public/State Controlled Institution of Higher Education

Type of Applicant 2: Select Applicant Type:

S: Hispanic-serving Institution

Type of Applicant 3: Select Applicant Type:

* Other (specify):

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

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-061418-001

* Title:

Office of Elementary and Secondary Education (OESE): Office of Indian Education (OIE): Indian Education Discretionary Grants Programs: Professional Development Grants Program CFDA Number 84.299B

13. Competition Identification Number:

84-299B2018-1

Title:

FY18 Professional Development 84.299B

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

Add Attachment

Delete Attachment

View Attachment

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

Indigenous Teacher Education Project

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.

Add Attachment

Delete Attachment

View Attachment

17. Proposed Project:

* a. Start Date:

* b. End Date:

18. Estimated Funding (\$):

* a. Federal

* b. Applicant

* c. State

* d. Local

* e. Other

* f. Program Income

* g. TOTAL

*** 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

Add Attachment

Delete Attachment

View Attachment

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:

**U.S. DEPARTMENT OF EDUCATION
BUDGET INFORMATION
NON-CONSTRUCTION PROGRAMS**

OMB Number: 1894-0008
Expiration Date: 08/31/2020

Name of Institution/Organization

Arizona Board of Regents, University of Arizona

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	69,780.00	51,155.00	84,448.00	71,757.00	73,092.00	350,232.00
2. Fringe Benefits	21,771.00	15,051.00	25,787.00	21,141.00	22,179.00	105,929.00
3. Travel	4,514.00	4,315.00	2,000.00	7,435.00	7,435.00	25,699.00
4. Equipment	0.00	0.00	0.00	0.00	0.00	0.00
5. Supplies	1,500.00	4,200.00	1,000.00	2,500.00	800.00	10,000.00
6. Contractual	8,561.00	5,626.00	6,768.00	7,250.00	7,250.00	35,455.00
7. Construction	0.00	0.00	0.00	0.00	0.00	0.00
8. Other	2,500.00	1,500.00	1,500.00	1,000.00	355.00	6,855.00
9. Total Direct Costs (lines 1-8)	108,626.00	81,847.00	121,503.00	111,083.00	111,111.00	534,170.00
10. Indirect Costs*	8,690.00	6,548.00	9,720.00	8,887.00	8,889.00	42,734.00
11. Training Stipends	187,362.00	311,602.00	174,765.00	0.00	0.00	673,729.00
12. Total Costs (lines 9-11)	304,678.00	399,997.00	305,988.00	119,970.00	120,000.00	1,250,633.00

***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: 07/01/2016 To: 06/30/2020 (mm/dd/yyyy)

Approving Federal agency: ED Other (please specify): Health and Human Services

The Indirect Cost Rate is 47.00%.

(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 8.00%.
PR/Award # S299B180003

Name of Institution/Organization Arizona Board of Regents, University of Arizona	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	(b)(4)					
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)

ED 524

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>Kirsten A Sherman-Haynes</p>	<p>TITLE</p> <p>Interim Vice President for Research</p>
<p>APPLICANT ORGANIZATION</p> <p>Arizona Board of Regents, University of Arizona</p>	<p>DATE SUBMITTED</p> <p>07/26/2018</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
4040-0013

1. * Type of Federal Action: <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	2. * Status of Federal Action: <input type="checkbox"/> a. bid/offer/application <input checked="" type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	3. * Report Type: <input checked="" type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change
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4. Name and Address of Reporting Entity:

Prime SubAwardee

* Name: Board of Regents, University of Arizona

* Street 1: P.O. Box 210158, Room 510 Street 2: _____

* City: Tucson State: AZ: Arizona Zip: 85721-0158

Congressional District, if known: AZ-003

5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime:

6. * Federal Department/Agency: N/A	7. * Federal Program Name/Description: Indian Education -- Special Programs for Indian Children CFDA Number, if applicable: 84.299
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8. Federal Action Number, if known: _____	9. Award Amount, if known: \$ _____
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10. a. Name and Address of Lobbying Registrant:

Prefix _____ * First Name N/A Middle Name _____

* Last Name N/A Suffix _____

* Street 1 N/A Street 2 _____

* City N/A State _____ Zip _____

b. Individual Performing Services (including address if different from No. 10a)

Prefix _____ * First Name N/A Middle Name _____

* Last Name N/A Suffix _____

* Street 1 N/A Street 2 _____

* City N/A State _____ Zip _____

11. 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: Kirsten A Sherman-Haynes

* Name: Prefix Dr. * First Name Kimberly Middle Name L. Last Name Ogden Suffix _____

Title: Interim Vice President for Research Telephone No.: 520-626-6000 Date: 07/26/2018

Federal Use Only: Authorized for Local Reproduction
Standard Form - LLL (Rev. 7-97)

NOTICE TO ALL APPLICANTS

OMB Number: 1894-0005
Expiration Date: 04/30/2020

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 and reference the OMB Control Number 1894-0005.

Optional - You may attach 1 file to this page.

1238-GEPA.pdf	Add Attachment	Delete Attachment	View Attachment
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Equitable Access and Participation (GEPA 427 Statement)

Our recruitment efforts are aimed at all qualified applicants, including those who are members of groups that have traditionally been underrepresented based on race, color, national origin, gender, age, or disability. However, according to UA hiring, diversity, and anti-harassment guidelines and statements (<http://diversity.arizona.edu/policies-statements>), all project participants and employees will be selected without regard to gender, race, national origin, color, age or disability.

Our recruitment plan will follow the guidelines. It is based on strategies that have been effective in increasing applications and enrollment from persons from underrepresented groups. At present, 12% of our EE undergraduate students are from underrepresented groups. Our tenure-track faculty includes 22 women and 7 males, 16 White, 7 Hispanic/Latino/a, and 3 American Indian.

We are committed to including scholars from underrepresented groups as well as to the development of training opportunities that result in culturally responsive individuals. Potential candidates will be recruited through a comprehensive process that includes a review of EE program application (e.g., meets admission requirements, essay on Indigenous education, professional references) and in-person interviews.

Specific strategies to include participation by individuals who are traditionally underrepresented include (a) efforts by faculty who currently work on minority outreach through committees, with particular emphasis on Indigenous education initiatives among NA populations; (b) personal letters and flyers to Tribal education entities, educators, and schools serving NA students; (c) recruitment presentations with community colleges and Tribal agencies,

and (d) advertisements on websites, social networks, and NA listservs that target NA populations.

Finally, all existing UA resources will be used. The UA Office of Tribal Relations, Native Nations Institute (NNI), Native American Student Affairs (NASA), Tohono O'odham Student Association (TOSA) and IndigiCat Student Association (ISA) will be consulted for recruitment and retention of NA scholars.

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

Arizona Board of Regents, University of Arizona

* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

Prefix: Dr. * First Name: Kimberly Middle Name: L

* Last Name: Ogden Suffix: Ph.D.

* Title: Interim Vice President for Research

* SIGNATURE: Kirsten A Sherman-Haynes

* DATE: 07/26/2018

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

OMB Number: 1894-0007
Expiration Date: 09/30/2020

1. Project Director:

Prefix:	First Name:	Middle Name:	Last Name:	Suffix:
Dr.	Valerie	J.	Shirley	

Address:

Street1:	1430 E Second Street, Room 713
Street2:	
City:	Tucson
County:	Pima
State:	AZ: Arizona
Zip Code:	85721-0069
Country:	USA: UNITED STATES

Phone Number (give area code)	Fax Number (give area code)
520-626-2232	520-621-9271

Email Address:

vshirley@email.arizona.edu

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

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.]

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:

INDIGENOUS TEACHER EDUCATION PROJECT (ITEP)
Indian Education Professional Development Program – CFDA 84.299B
Absolute Priority 1

The Indigenous Teacher Education Project (ITEP) will recruit a cohort of 14 Native American (NA) preservice teachers in the University of Arizona’s (UA) Elementary Education (EE) program. The overarching goal of this project is to increase the number of NA teachers serving NA students and schools. The UA will partner with 5 schools serving NA students: the Gila River Community Schools (Blackwater, Gila Crossing, Casa Blanca), Hopi Tribal Education Department, Navajo Nation Department of Diné Education, Sacaton Public School District, and Tohono O’odham Baboquivari Unified School District in this unique effort.

Specific objectives and outcomes that will be met are:

- To indigenize EE existing, pedagogy, curriculum, mentoring, and community partnerships,
- To prepare 14 qualified NA project participants to graduate and obtain certification,
- To facilitate employment and provide professional support and mentoring during induction services,
- To infuse Indigenizing STEM practices into the preparation of project participants,
- To build strong partnerships with Tribes, LEAs, and IHEs for sustainability of ITEP.

This project seeks to build on the foundational components of Indigenous teacher education by infusing Indigenous knowledges, values, languages, histories, and cultures into the curriculum. In addition, this project will work to strengthen participant’s understandings, skills, and confidence through Indigenizing STEM (I-STEM) for NA students. In order to reach our goal of increasing the number of NA teachers, we need to address the different phases of the project: recruitment, induction, and assisting with payback obligations.

Recruitment. A comprehensive and multidimensional recruitment process will include resources from the UA, project Partners, community colleges, and the schools. Potential

participants will be recruited from the Partner schools (elementary schools and tribal colleges). Presentations and dissemination of recruitment materials will occur during visits to tribal colleges, community colleges in the state, and Tribal community agencies. Flyers will be disseminated and advertised on social networks, websites and NA listserves.

Induction. Mentoring and induction services will increase retention, graduation, certification, and employment rates. The professional support of teachers calls for on-going mentoring beyond the completion of the program. The induction program will include (a) contact with an assigned mentor; (b) UA mentorship; (c) focus group sessions in regional areas of the state; (d) workshops by STEM organizations and consultants; and (e) participation in induction services offered by their school/district.

Assisting with Service Payback Obligations. Participants will be required to sign a Service Payback Agreement and ITEP Agreement prior to starting the EE program. The terms of the agreement will be clearly conveyed to participants prior to, during and after ITEP. The information conveyed to each ITEP participant will include. In addition, a budget tracking sheet for each participant will be shared with participants every semester so they will have more “real time” knowledge of their funding. We will be working closely with participants during the induction period (in-person, video/phone conference, group sessions) to provide professional support to sustain employment in a school and to assist in ensuring participants update and submit required information to the data collection system.

The UA and partners are dedicated to using this project to advocate for change within Tribal communities. Ultimately, the outcomes of this project to indigenize teacher preparation and infuse STEM content and pedagogy will impact Indigenous communities, teacher education programs, teachers, and NA students.

Project Narrative File(s)

* Mandatory Project Narrative File Filename:

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INDIGENOUS TEACHER EDUCATION PROJECT (ITEP)

Critical issues facing the culturally responsive education of Native American (NA) children in elementary schools must be addressed in teacher education programs. Essential are the needs to increase the number of NA teachers, modify existing programs to focus on Indigenous perspectives, and increase the resources to support undergraduates to graduate, obtain certification, and secure/sustain employment. The University of Arizona (UA) preservice Elementary Education (EE) was awarded funding to support 15 NA students (participants) in 2015. The *Indigenous Teacher Education Project* (ITEP) has opened pathways for the UA to engage in critical analysis of what it means to modify an existing program in relation to the diverse NA preservice teachers (participants) and communities they represent. The project is currently in year 2 with participants on track to graduate and obtain certification. The success of supporting the current cohort is attributed to the shared interests of the UA faculty and community partners. ITEP has received heightened attention and recognition for its efforts to provide quality teacher preparation that infuses Indigenous knowledge systems and languages with academic expectations. We are continuing to build on these efforts and lessons learned to strengthen the EE program for NA preservice teachers, schools, and communities.

The UA will continue to address and meet the identified needs (i.e., increase NA teachers, modify existing EE program, etc.) by developing, implementing, and sustaining a preservice EE program for NA students (participants); with a new focus on Indigenizing STEM (I-STEM). The UA will partner with the Tohono O’odham Baboquivari Unified School District, Gila River Community Schools (Blackwater, Gila Crossing, Casa Blanca), Sacaton Public School District, Hopi Tribal Education Department, Tohono O’odham Community College, Tohono O’odham Nation Education Department and San Carlos Apache College in this unique effort.

(1) Specific Gaps and Weaknesses in Teacher Preparation Programs

Specific areas addressed include (a) increasing academic achievement of NA students, (b) increasing the number of NA teachers, (c) indigenizing and integrating STEM into existing EE program, and (d) building and sustaining strong partnerships with Tribal entities.

Need to Increase the Academic Achievement of NA Students

According to the *2017 AZ Indian Education Annual Report* (Office of Indian Education, ADE, 2017), AZ has the third largest NA population in the nation, with 22 Tribes in the state, and is identified as the second highest in NA students at 50,331. The disparities in the academic achievement between NA students and non-Native peers are evident when compared on the Arizona's new state assessment, AzMerit, for grades 3-8. According to the report, proficiency in English Language Arts was 13% for NA students compared to 41% for their white peers. In math, achievement is 16% for NA students compared to 39% for their white peers (OIE-ADE, 2017). The data within this report confirm a longstanding trend of low academic achievement among NA students. In addition to low academic achievement, according to the *2018 Arizona Minority Student Progress Report*, findings from 2015 indicate NA students have the highest dropout rate among their counterparts at 7% followed by Hispanic (4%), Black (4%), White (2%), and Asian Pacific Islander students (1%). NA students have the lowest graduation rates with only 66% of NA students graduating in 4 years (Vagi, Ross, & Somani, 2018). This project will counter these dismal statistics and will work to increase the academic achievement of NA students by training a cohort of NA preservice teachers in the UA EE program.

Need to Increase the Number and Quality of NA Teachers

The academic achievement of students has a direct correlation with the quality of teachers with whom they work (Kamil, 2011). One reason for the low academic achievement of

NA students is linked to cultural differences between NA students and their non-Native teachers (Castagno & Brayboy, 2008). When teachers understand the context of specific Indigenous cultures, histories, knowledge systems, and values, the teachers are better equipped to teach NA students (Brayboy & McCarty, 2010). A shortage of NA teachers exists in schools serving a large number of NA students. The need to increase the number of NA teachers has been an issue for nearly a century. In fact, it was an initial recommendation for improving Indian education in the Meriam Report of 1928 (Adams, 1995; Beaulieu, 2006; Lomawaima & McCarty, 2006; McCarty, 2002; Meriam et al., 1928; Szasz, 1999). Yet, less than 1% of teachers in the U.S. identify as American Indian or Alaska Native (Goldring, Gray, Bitterman, & Broughman, 2013). Due to the low number of preservice teachers enrolled in teacher education programs, hiring NA teachers in Tribal schools is a challenge. The UA EE has averaged less than 1 % of NA students enrolled in their EE programs. New data in 2017 reflected a slight increase of 7% NA EE students who are part of the current ITEP efforts being funded by the OIE (Dean's Report, 2017). ITEP has exemplified the need to modify teacher education programs in order to meet the needs of NA preservice teachers and Indigenous contexts. The project will continue to increase the number of qualified NA teachers who will teach in schools serving a high proportion of NA students.

Need to Modify Teacher Education Program to Incorporate Indigenous Ed. and STEM

Teacher education programs typically have not adequately prepared NA teachers to teach in NA schools (Castagno, 2012). Training teachers to address unique Tribal needs is essential and requires a shift in curriculum and teaching methods within teacher education programs (Garcia & Shirley, 2012; Grande, 2015; Kana'iaupuni & Kawai'ae'a, 2008; Kawai'ae'a, 2008; Shirley, 2017; Whitinui, France & McIvor, 2017). Given the unique social and political realities within Indigenous communities, Indigenous concerns, needs, languages, and knowledge systems are central to the process of indigenizing teaching and teacher education. Thus, Indigenous

teacher education becomes a process where preservice teachers understand the importance of developing a critical and culturally sustaining/revitalizing pedagogy that promotes sovereignty and self-determination (McCarty & Lee, 2014). When Indigenous contexts are integrated in teacher education programs, preservice teachers will begin to develop a critical consciousness around such efforts and will, therefore, become intentional in building curriculum around Indigenous issues and concerns. This change will preserve and privilege Indigenous knowledge systems while contributing to increasing the academic achievement of NA students and bringing about positive social change in Indigenous communities (Brayboy & McCarty, 2010; Garcia & Shirley, 2012; Lansing, 2014; Lee, 2006; Shirley, 2017).

Our project seeks to build on the foundational components of Indigenous teacher education by infusing Indigenous knowledges, values, languages, histories, and cultures into the curriculum. ITEP has made modifications to the UA EE teacher preparation program by creating learning opportunities that are contextualized in the following framework of a) Teachers as Nation-builders, b) Indigenous Knowledge, Values, and Language, c) Critical and Culturally Sustaining Pedagogies, d) Justice-Centered Pedagogies. Essential to this process includes Indigenous perspectives established in consultation and partnerships with Tribal communities. We have identified Indigenizing STEM (I-STEM) as an additional core component that needs to be incorporated into Indigenous teacher education.

Contextualized within the analysis of the low interest rates of NA students entering STEM-related fields, we recognize the urgency in the need for teachers serving NA students to be equipped with the skills, understanding, and confidence to support NA student interest and experiences in STEM. The National Science Foundation reported in 2014 that American Indian/Alaska Natives (AI/AN) freshmen who intended to major in science and engineering (S & E) fields reflected 30% compared to that of White students (40.3%) and Asian Americans

(54.2%). In 2014, 6% AI/AN earned a bachelor's degree in S & E as compared to 88.4% non-Hispanic or Latinos. In regards to master's degrees, 0.5% AI/AN completed their degrees in comparison to 91.5% non-Hispanic or Latinos (2016). Likewise, only 3% of NA students in Arizona met the ACT STEM college readiness benchmark in 2016 (Vagi, Ross, & Somani, 2018). There are many factors impacting the low rate of NA students pursuing STEM fields. This begins early as NA students in K-12 are not provided with academic and quality experiences in STEM in comparison to non-Natives (Windchief & Brown, 2017). In addition, NA students grounded in their culture and knowledge may find it difficult to relate to STEM disciplines (Cajete, 2015; Smith, Cech, Metz, Huntoon, & Moyer, 2014). Critical to engaging NA students in STEM is the need for teachers to provide opportunities for students to understand STEM in relation to their Tribal values, knowledge, and goals (Cajete, 2000; Bang & Medin, 2010; Bang & Marin, 2015; Medin & Bang, 2014). Finally, considering the dismal percentages of NAs pursuing STEM disciplines, NA teachers are most likely challenged with seeing themselves as teachers of STEM. Our project will work to strengthen participant's understandings, skills, and confidence through Indigenizing STEM (I-STEM) for NA students.

Need to Build Stronger Partnerships with Tribal Entities

As sovereign entities, Tribal Nations have unique needs and concerns that should be acknowledged in order to develop strong partnerships for education. The UA is situated within close proximity to the Tohono O'odham Nation, Pascua Yaqui Nation, and Gila River Indian Community. Each Nation has particular needs that can be addressed by teacher training initiatives that seek to prepare Indigenous teachers as nation builders (Kawai'ae'a, 2008). To employ "teachers as nation-builders" in a teacher education program, this process would require strong partnerships and consistent dialogue with Tribal communities (Lansing, 2016). If

Indigenous knowledge systems and pedagogy are to be infused in courses and field experiences, creating sustainable Tribal partnerships is essential.

A mutual benefit in partnering with Tribal entities is that Indigenous EE students incorporate unique perspectives and experiences that educate non-Native preservice teachers and faculty regarding Indigenous issues, perspectives, and cultures. This cross-cultural interaction is essential as there are approximately 644,000 NA students enrolled in U.S. public elementary and secondary schools, about 90% of these students attend public schools with their non-Native peers (National Indian Education Association, 2018). The perspectives NA preservice teachers bring to the courses will help raise awareness among non-Native preservice teachers who will develop a better understanding of Indigenous people and communities. This knowledge also will benefit non-Native teachers to comfortably and respectfully integrate Indigenous histories, people and cultures into their future classrooms, especially when it is likely they will have a NA student in their classroom.

(2) Employment Opportunities

Within the state of AZ, current issues of teacher pay and teacher turnover have created a high demand for EE certified teachers. According the ADE report from the Superintendent of Public Instruction, Arizona teachers are officially the lowest paid in the nation. Arizona also has a high teacher shortage and a 45% teacher turnover rate in the first two years of teaching (ADE, 2015). The report on *Teacher Shortage Areas Nationwide Listing 1990-1991 through 2017-2018* (U.S. Department of Education, 2018) indicated in 2016-2017, 13 of the 15 counties in AZ had teacher shortages. In 2017-2018, all 15 counties reflected a teacher shortage. Tribal Nations are located in 12 of the 15 counties in the state. Certain counties report high proportions of NA students who make up majority of the student population. For instance, the *2017 AZ Indian*

Education Annual Report reported Apache (69%), Coconino (55%), Navajo (47%), and LaPaz (36%) as being counties with high density schools of NA students. While such counties reflect a demand to have NA EE teachers, it should be noted that although Maricopa (Phoenix region) is considered a low density county, having the largest NA student population at 13,307, also calls for an increase in hiring NA teachers who reflect the cultural identities of the NA students.

The schools that predominantly serve NA students from the 22 Tribes are public schools, Bureau of Indian Education (BIE) schools, or tribally controlled schools. The BIE oversees 54 schools in Arizona. Of the 54 schools, 11 currently (as of July 22, 2018) have 17 elementary and middle school teaching positions advertised on the BIE website (BIE, 2018). Within the partner schools, the school year at BUSD began July 11, 2018 and has 1 teaching position open. The teaching staff is predominantly non-Native with 20% being NA. Similarly, in Sacaton Elementary School in the Gila River Indian Community (GRIC), 19% of the teaching staff is NA and 16% are from Gila River. According to the GRIC Tribal Education Director, 16% of the teachers teaching in their grant schools are Gila River community members. The three BIE community schools in GRIC currently have 7 openings for elementary teachers.

PROJECT DESIGN

(1) Goals, Objectives and Outcomes

The project is designed to address three goals: (a) to increase the number of highly qualified and skilled NA teachers who will work with NA children, (b) to indigenize and integrate STEM into the existing EE curriculum and pedagogy, and (c) to build capacity within Tribal communities. Project participants include UA faculty, participants (EE students), LEAs, IHEs, and Tribal personnel, teachers, and families. The project is designed to meet both funding and participant objectives. Goals and objectives will be met in a timely and effective manner.

Specific objectives include:

1. To indigenize existing EE pedagogy, curriculum, mentoring, and community partnerships,
2. To prepare 14 qualified NA participants to graduate and obtain certification,
3. To facilitate employment and provide induction services,
4. To infuse Indigenizing STEM practices into the preparation of project participants,
5. To build strong partnerships with Tribes, LEAs, and IHEs for sustainability of ITEP.

Given the experiences with ITEP, we believe recruiting separate groups of students is a sustainable approach to ensuring we meet our goal of 14 participants. The number of participants to be recruited is 11 participants in Year 1 and 3 additional participants in Year 2. The number of participants to continue in the project is 11 participants in Year 1 and in Year 2, 14 participants. The number of participants to graduate in Year 2 is 3 participants and in Year 3, 11 participants will graduate. The number of participants to find qualifying jobs within 12 months of completion is 14.

Over the five-year period of the project, 14 participants will be recruited and supported to complete the UA EE program, obtain certification, secure/sustain employment, and participate in two years of induction activities. Existing EE coursework, practica, and mentoring approaches will be modified/expanded to reflect Indigenous perspectives and STEM. Meetings with UA EE faculty, project Partners, consultants, and an Advisory Committee (AC) will assist in ensuring effective modifications and support is sustained for participants to successfully complete the program. The implemented plan will ensure that the project is on track and that all feedback is incorporated on an ongoing basis.

Considering the number, breadth of commitment, and resources of our Partners, we anticipate a substantial portion of the participants entering Year 1 will graduate, obtain

certification, secure employment, and participate in induction programs. By Year 3, we anticipate 86% (12 participants) will complete the project. Retention is the key component for project success. *Table 1. Project Management and Timelines* (p. 33) shows the activities, personnel responsible, schedule, and outcomes related to each project goal and objective.

(2) Recruitment, Selection, and Retention

Recruitment

A comprehensive and multidimensional recruitment process will include resources from the UA, Partners, community colleges, and the schools. Based on the successful recruitment strategies that led to over 90 inquiries in Year 1 of the first cohort, we will employ a similar approach. Materials, such as flyers, were disseminated on listservs—all Arizona community colleges, Tribal Education Departments, Tribal Financial Aid and Scholarship Offices, and various UA departments and organizations. Flyers were also disseminated on a new Facebook page, on community boards throughout campus and in communities; and in Partner schools. We established partnerships with Tohono O’odham Community College and San Carlo Apache College to assist in recruiting (included in Other Attachments).

Selection

The standard application process to the EE program will be used as a basis for participant selection. This process will be modified to focus on Indigenous perspectives, education, and commitment to working with Tribal schools and students. The applications are due in February and September on the COE website. A box will be checked on the application that indicates students are applying to ITEP. This ITEP process will focus on Indigenous perspectives, education, and commitment to working with Tribal schools and students. Admission criteria include a minimum 3.0 GPA, documented experience of 60 hours with school-aged children,

professional references, an essay on Indigenous topics (one of three options given to them; provided below), valid fingerprint clearance card (required by school districts for work in classrooms), and an interview (as deemed necessary). Sample essay questions include: 1) What does it mean to be an ideal teacher of Native American students?; 2) What is the role of teachers in contributing to Indigenous nation-building efforts?; and 3) What motivates you to become a teacher of Native American students? A Screening and Selection Committee, comprised of the Project Directors (PDs), ITEP advisor, and the Project Coordinator (PC) will review applications, read essays, and conduct interviews to qualify admissions to the ITEP program. A rubric of requirements and related scores will provide a metric for evaluating the applications.

Retention

Retention is key to supporting NA undergraduates to graduate and obtain certification. Retention strategies will focus on mentoring and personal interaction among all participants, particularly students who may not be of traditional college age, to ensure they are likely to complete the program. The frequency of interaction and/or feedback is directly related to project activities: meetings with the PC, bi-weekly; Indigenizing pedagogies course with PDs, bi-weekly; and coursework and practica with faculty, each semester.

Participants will be informed of UA resources and will be introduced to Academic Advisors who will meet with them to provide program guidance and planning. We will work with participants in Years 1 and 2 to ensure they complete all general education requirements. For example, the participants will meet with an academic advisor to complete an Advisement Plan. In addition to academic advising, support for issues such as processing financial aid, matriculation to campus, participants with families, and cultural responsibilities can pose unique and unexpected challenges.

The UA campus offers academic and social support and counseling for all participants. Other NA resources to support retention include: (a) **Native SOAR**—UA NA students mentoring to NA high school students. The high school students are selected by their schools to participate because of their interest in attending college and their high academic achievements; (b) **Native American Student Affairs (NASA)**—provides culturally sensitive academic counseling and support services to NA students enabling them to achieve academic excellence; (c) **Think Tank Tutoring Center**—offers math and writing support; (d) **IndigiCat Student Association (ISA)**—promotes the value of education, fosters leadership, serves recreational and social needs, promotes and preserves cultural heritage of all NA students; (g) **Tohono O’odham Student Association (TOSA)**—supports Tohono O’odham students, provides a place for them to meet other UA NA students, conducts community outreach, and increases the attendance and graduation of NA students at the UA.

**(3) Incorporate Potential Employer Needs, Establish Partnerships,
Develop Programs that Meet Employer Needs**

Our strategy to meet employer needs is to: (a) establish partnerships with them to identify needs, discuss issues, challenges, and solutions, and (b) develop new programs or bolster existing programs/projects that serve their agendas.

Employer Needs -- Job Market Analysis

To date, we have received specific needs from three Partner school districts: Tohono O’odham Baboquivari Unified School District, GRIC, and Sacaton Public Schools.

Tohono O’odham Baboquivari Unified School District (BUSD). According to the Superintendent, Dr. Edna Morris, BUSD has difficulty recruiting and retaining teachers because of the rural location. In addition, BUSD serves 1,200 Tohono O’odham students and 23% of the

teachers in their schools is NA (see Dr. Edna Morris' letter of support in *Letters, Other Attachments*). Currently, the BUSD school year began on July 11, 2018 and they have filled many of the teaching positions. However, the Baboquivari Middle School is seeking a social studies teacher (Baboquivari Unified School District Human Resources, 2018). In addition, Dr. Morris has stated the Nation has a goal of integrating more Tohono O'odham culture and language into the classrooms; therefore, the partnership with ITEP is critical in meeting their needs (personal communication, July 13, 2018).

GRIC. According to the data provided by the Tribal Education Director of the Gila River Community Schools, the community schools serve over 2,000 children and only 16% of the teachers are Community Members. STEM education is a high priority in Gila River schools; therefore, the partnership with ITEP is critical in meeting their needs. Currently, Blackwater, Casa Blanca and Gila Crossing Community Schools have 7 openings for elementary teachers (Blackwater Community School, 2018; Casa Blanca Community School, 2018; Gila Crossing Community School, 2018).

Sacaton Public Schools. According to the data provided by the Superintendent of the Sacaton Unified School District located in Pinal County, the elementary school has over 600 students enrolled in Pre-Kindergarten through 8th grade and 19% of the certified teaching staff is NA and of that percentage, 16% are Gila River community members. They believe it is extremely important to hire more NA teachers; however, there are few prospects (see Cherryll Paul's letter of support in *Letters, Other Attachments*). Currently, the Elementary and Middle Schools have no job openings for certified teachers as the school year begins on August 3, 2018 (Sacaton Schools, 2018).

Establishing Partnerships/Relationships

The project is grounded in building partnerships with schools. Establishing partnerships

and relationships requires ongoing dialogues with Tribal entities that assist in understanding how best to prepare and support Indigenous teachers and students. The Department of Teaching Learning Sociocultural Studies (TLSS) is committed to such partnerships with Indigenous communities and has facilitated two Indigenous Education Meetings held at the UA on April 25, 2016 and March 28, 2018. The intent of these meetings was to encourage dialogue about concerns, aspirations, and goals regarding Indigenous education in their local communities and to provide the needed support to educational programs. In the most recent meeting dialogues emerged around the following questions: What are pathways for Indigenous education that you would like to develop and sustain over the coming years for your students and community members? and How can the College of Education support your efforts? Final, ITEP was invited to present at the UA Tribal Leaders Summit with UA President Robbins on May 4, 2018. This meeting generated greater interest and insights to building pathways for increasing NA teachers in Tribal communities. The project intends to continue such dialogues and sustain partnerships with Tribal entities across the state of Arizona.

Developing Programs that Meet Their Needs

The project begins to address employer needs by collaborating with them during field placements in the EE program and during the two years of induction. Meetings and follow-up activities will be developed to understand employer needs and develop new programs for them and their new teachers. One immediate need is to co-develop an induction program for all of our Partner schools that do not have them. We will draw on the two schools that do have established induction programs (Sacaton, and Baboquivari) as a model for the new programs (see *Letters, Other Attachments*). A second need is to work with the schools to infuse culture, language, and STEM education as part of professional development inservice.

PROJECT SERVICES

Three questions guide the project's approach to providing quality personnel preparation to NA participants: (1) How do we improve the academic achievement of NA school-aged children? (2) What modifications should be made to produce an EE program that supports Indigenous perspectives and STEM practices? (3) How can we be responsive to employer needs so that they can fully support their new teachers?

First and foremost, we need to provide a quality EE teacher preparation experience that is grounded in evidence-based practices. UA faculty research continues to contribute to the field of education; specifically, Indigenous education. Second, we need to gather enthusiastic, committed partners who are well versed in Indigenous issues and have experience developing and implementing culturally sensitive educational programs that are directly related to the education of NA students.

(1) Learning Experiences and Skill Development for Successful Teaching of NA Students

The project builds on the highly regarded EE teacher preparation program. A key feature of this program is the *TLSS Position Statement on Social Justice*, adopted March 24, 2014 (included in *Other Attachments*). This statement of values and goals, both critical and ambitious, underlies all Department academic endeavors and confirms the Department's commitment to equity and social justice in education and society. The social justice statement serves as a guiding framework for program development; thus, is used in all courses as a framework to ensure the learning experiences and outcomes are committed to addressing social, cultural, and political issues in education.

The quality of the EE program provides preservice teachers with models of effective practices in their coursework to meet diverse learning contexts. In particular, the EE program

infuses culturally relevant pedagogy (CRP) frameworks and strategies into all coursework and practica. As a guiding framework for teaching, CRP addresses the low academic achievement of minority students and provides curriculum and instruction that not only works to bridge the home and school cultures, but also works to meet the diverse learning abilities and needs to increase achievement of all students (Ladson-Billings, 1994). Rooted in CRP, Paris Paris and Alim's (2014, 2017) framework of culturally sustaining pedagogies (CSP) expands this theoretical framework to sustain cultural pluralism as part of learning that leads to social transformation across diverse schooling contexts. CSP is about sustaining student and community identities as opposed to eradicating them. CSP will be a theoretical framework that participants will examine and experience in the EE program. The following sections will briefly describe the EE course, field placement, and student teaching requirements designed to ensure students meet State requirements for graduation and certification as EE teachers.

UA EE Program Requirements

Coursework

UA students begin taking EE courses during the last four semesters of their program, some of which are taught at the UA campus and some onsite in elementary schools. The EE program includes major, pre-professional, and subject knowledge courses. Major courses are aligned with the national and state professional teaching standards, which identify disciplinary knowledge needed by elementary educators: TLS 300: **Classroom Processes**; TLS 322: **Reading/Language Arts Methods Part 1**; TLS 323: **Reading/Language Arts Methods Part 2**; TLS 324: **Science Methods**; TLS 326: **Mathematics Methods Part 1 & 2**; SERP 400: **Inclusive Education**; TLS 327: **Social Studies Methods**; TLS 401: **Schools, Families and Community**; TLS 402: **Linguistics for Teachers**; TLS 351: **Physical Education/Health** ; TLS

40x: **Instruction and Assessment of ELs**; TLS 394 **Field Experience**; TLS 493A: **Student Teaching in Elementary Education**; TLS 40x: **Leadership/Capstone Course**.

Pre-professional courses focus on the professional knowledge needed prior to working extensively in classrooms with children. **Math 302A and 302B: Understanding Elementary Mathematics**; TLS 480: **Children’s Literature**; TLS 409: **Foundations of Education for Social Justice**. Students also complete courses to meet the subject knowledge requirements for EE: **Science-Life Science**; **Science-Earth & Physical Science**; **Education/Technology elective**; **US History survey**; **US/AZ Constitution**; **Fine Arts Content**.

Field Experience/Student Teaching

Students are placed in different schools for the first three semesters. In semester 1, the students are placed in a classroom once a week for a total of 45 hours completed by the end of the semester. In semesters 2 and 3, they are required to complete field experience two days per week. Student teaching occurs during the fourth and final semester of the EE program, teaching five days per week, gradually increasing responsibilities of the classroom.

Competencies/Evaluation

The UA EE program has a long-standing and comprehensive process for evaluating their students. A complete list of tools and corresponding forms can be found in the TLSS APR report (*Department of Teaching, Learning, and Sociocultural Studies, University of Arizona, Academic Program Study*, March, 2015). The program is aligned with the state and UA standards, and provides evaluation of ten components: Learner Development, Learning Differences, Learning Environments, Content Knowledge, Content Application, Assessment, Planning for Instruction, Instructional Strategies, Professional Learning and Ethical Practice, and Leadership and Collaboration. Additionally, major and pre-professional courses are tested on the Professional

Knowledge Exam for Arizona teacher certification. Subject knowledge requirement courses are tested on the Subject Knowledge Exams for Arizona certification.

Project Modification of the EE Program to Focus on Indigenous Perspectives and STEM

The project will create an EE ITEP Subplan that will include the standard requirements, additional coursework and project experiences, and opportunities for immersion in Indigenous teaching environments. In addition, a strong focus on STEM disciplines and practices will be infused throughout the entire EE program through courses, Professional Learning Time, and workshops. Philosophically, the TLSS Social Justice Statement will serve as a critical framework for examining Indigenous and STEM education practices. Participants will benefit from developing a critical consciousness around key concepts (e.g., race, class, gender, power) as they pertain to NA students, communities, and contexts. This critical lens will assist our participants in examining all facets of the program.

Coursework

Courses in the EE program are taught on the UA campus and on-site in local public school facilities. Teaching sites for this project will be Partner schools, giving participants opportunities to work directly with NA children. Specific to this project, Indigenous and STEM education will be infused throughout Years 1-3 of the EE program (and continued into Years 4 and 5 of induction) as participants will be given the opportunity to examine the relationship between Indigenous perspectives, knowledge, values, goals, culturally sustaining pedagogies and STEM practices (i.e., digital media, technology). The philosophies underlying these offerings include culturally sustaining pedagogy, Indigenous social justice pedagogy, I-STEM, community-based education, wellness, and nation-building contextualized in notions of self-determination and sovereignty.

Indigenizing Pedagogies: Teachers as Nation-builders Course

A course specifically in Indigenous Education, TLS 495A: Indigenizing Pedagogies: Teachers as Nation-builders, has been developed by the PDs and offered weekly with the previous cohort. Each semester the focus of this course was different (i.e., history of NA education, curriculum development, community-based education). The course was designed to engage participants in examining and developing an Indigenous teacher identity and to develop a critical awareness that reinforces competencies needed to work with Indigenous students and communities. The new participants will enroll in these courses each semester.

Field-based STEM Training Course

A field-based STEM training course is a new course that will be developed and taught by faculty who have knowledge and expertise in Indigenous education/contexts and STEM disciplines. This course will include a 4-day field trip to an Indigenous community in Northern Arizona to learn about environmental issues that affect their lives. The course will focus on developing an understanding of the differences and conflicts between Indigenous and Western relationships to land and environment. Participants will engage in curriculum development and pedagogy that integrates, sustains, and revitalizes Indigenous knowledge and values while using STEM practices to stand in solidarity with communities dealing with social and environmental injustices. Digital tools and technology will be integrated into this course.

STEM Workshops and Professional Learning Time

STEM practices will be infused into the EE program through the Professional Learning Time (PLT) sessions that are built into the EE program and workshops designed specifically with consultants in ITEP courses. PLT is offered to all EE students one hour per week on various topics that would support preservice teachers' preparation. We will incorporate STEM topics

into these sessions (i.e., using Skype in the Classroom, Digital Libraries, designing games and educational activities on the SmartBoard, etc.). We have communicated with various individuals in UA programs [the COE's Digital Innovation and Learning Lab (DIALL), the UA STEM Learning Center, and the Southern Arizona Research, Science and Engineering Foundation (SARSEF)] who agreed to offer workshops that infuse STEM into the program (see letters of support in *Letters, Other Attachments*). Presenters will also be asked to serve on the AC.

DIALL is a new upcoming state-of-the art instructional area in the COE that provides a cutting-edge instructional space and strategies for faculty, staff, students, and community members to work with culturally and linguistically diverse communities on digital learning. DIALL is a unique initiative that examines teaching and learning interactions among individuals in the process of media making, a rich space for gaining valuable insights about reading, writing, collaborating, and connecting in a digital age. DIALL will have mobile technologies that can be transported into underserved schools and community-based organizations. Dr. Blaine Smith has agreed to offer workshops within this lab and during PLT.

The **UA STEM Learning Center** is a university-wide center that supports efforts to recruit and retain a diverse population of learners into a robust STEM pipeline. They offer consultations for projects, resources on inclusive practices in STEM, a network of STEM programs, and workshops to work with educators. They agreed to be a resource for the program.

SARSEF provides in-class presentations in critical thinking and problem solving through hands-on research for students, professional development to teachers on integrating standards, and science nights guiding parents on how to help their children find a passion for science. They agreed to offer workshops during the program and induction years.

Community-based Science Education Workshops

In addition to faculty in the EE program, Indigenous Community-based Science Education Consultants (prominent scholars and Tribal community members) will work directly with the participants and provide them with valuable knowledge and skills to design curriculum that integrates, sustains, and revitalizes Indigenous knowledge with western science. Drs. Gregory Cajete and Megan Bang have agreed to work with project participants in the field of I-STEM and we intend to invite other consultants who will contribute specific knowledge and expertise on topics generated through the participants' interests and inquiries. The consultants will provide knowledge, skills and tools to assist participants in understanding different environmental issues impacting Indigenous communities and the STEM-related skills associated with the issues.

AILDI Workshops

Indigenous teachers have a critical role in contributing to the language revitalization goals of Indigenous communities. AILDI workshops will be offered to focus on teaching, maintaining, documenting, and revitalizing Indigenous languages. These workshops will be taught by a variety of reputable and experienced Indigenous language activists and Indigenous education instructors. Through lectures, readings, assignments, and other hands-on activities, the participants will apply their skills and knowledge learned to their schools and community contexts. In Year 1, a consultant (Dr. Stacey Oberly) has agreed to teach our participants in immersion strategies. She has worked with our previous participants in AILDI and provided them with valuable knowledge and skills in teaching lessons completely in their Indigenous languages. Dr. Oberly will work with the participants for 3 consecutive weekends in September 2019. Two additional workshops will be offered in Years 2 and 3. Consultants who are prominent in the field of Indigenous Language Immersion and Revitalization will be identified in

consultation with AILDI.

Field Experience and Student Teaching

In order to prepare the NA participants to gain experiences working with and teaching NA students, field placements and student teaching will be located in one of the Partner school sites: Baboquivari Unified School District (Elementary, Intermediate, and Middle Schools); Gila River Indian Community (Blackwater Community School [CS], Casa Blanca CS, Gila Crossing CS, Sacaton Elementary School, and Sacaton Middle School); or Sacaton Elementary, Intermediate and Middle Schools.

The students will be evaluated using the standard EE student teaching observation forms. Field placement will be determined during participants' first semester of the EE program. The participants will choose among the Partner school sites. Details regarding travel and site coordination will be organized and arranged by the PDs and Project Coordinator in collaboration with Partners and Margaret Shafer, Director, Office of Field Experience.

As part of the field experience, participants will be encouraged to examine their understanding of working with diverse families, both Indigenous and non-Indigenous. Tying into social justice, participants will develop curriculum and instruction that is reflective of the social justice statement, indigenizing pedagogies, and STEM practices during their placement. Within their student teaching, participants will be expected to continue to implement these strategies and practices to best serve NA children. By the time participants are engaged in student teaching, they will have benefitted from coursework and practica immersed in Indigenous philosophies and STEM practices. They will be well prepared to adapt their own approaches to building the classroom community and academic teaching of NA children, whether in Tribal or non-Tribal educational settings.

Project Sequence

As shown in *Table 1*, participants will complete their project components as follows: pre-requisite and required courses, summers Year 1 and Year 2; Coursework, Years 1-3; Field placement, Years 1-3; student teaching, Year 2-3; graduation/certification, Year 2-3; employment, Year 2-5; and induction, Years 4-5. Coursework, field placements and student teaching will be done at a Partner school.

(2) Participants' Preparation to Adapt Teaching Practices to Meet NA Student Needs

The coursework, seminars, and practica will guide them in developing their own adaptations of school curriculum and practice. Informal levels of engagement with faculty, Partner members from Tribal and non-Tribal educational institutions, school personnel, NA students in the classroom, and other participants will have given them opportunities to discuss issues, challenges, and solutions to being successful as a NA teacher with young children. The project will ground these new teachers with the underpinnings of social justice, an overview of Indigenous perspectives on teaching, families, and diverse communities, I-STEM, and two years of practical experience working with young NA children in their classrooms. As in all cultures, NA individuals within and across Tribal groups are not homogeneous. Participants will begin their future work with a solid immersion of diverse Indigenous cultures and will be well suited to working with young NA children, developing a level of confidence in students within STEM disciplines, and striving to improve academic abilities while honoring their community and family values and culture.

(3) Job Placement, Job Market Analysis, and Employer Needs

An overarching outcome of the Project is securing employment for the participants. It is important for the NA participants to begin seeing themselves as potential candidates while they

are in their field placement. In addition, the Project will work to instill Indigenous conceptualizations of community values and relationships and will work to ground such relationships on the values of respect and reciprocity. Once this philosophical aspect of establishing and developing relationships with school personnel, students, and families is built, the project will provide job placement activities that will assist the participants in securing employment. The career development seminar sessions will begin during their third semester. Information will be provided on the job market analysis of all public, grant, and BIE schools, as well as other schools with a high proportion of NA students in the state of Arizona. Preference in job placement will be given to the Partner schools who agreed to consider program graduates for teaching positions in their school(s). It is anticipated that the participants will have a firm understanding of the needs of the Partner schools because they will have had assignments tailored to researching the needs of potential employers.

Assignments that focus on helping the participants become familiar with employer needs include surveys and interviews. The participants will be required to create a survey about the needs at one of the Partner schools, and disseminate it among the administrators, teachers, students and families. In addition, some of the participants will conduct interviews with key educational stakeholders to gather information regarding their needs. The participants will present and share this information among their cohort. These activities will help the participants firmly understand the school's needs, context, and the professional and cultural climate of the school. This information can then be used to identify solutions and secure employment.

(4) Induction Services

A central component to building and sustaining Indigenous teacher education calls for on-going mentoring beyond the completion of the program. The UA EE program recognizes this

is critical for EE teachers serving underrepresented populations. Teachers serving Indigenous students are pressed to understand the challenges, and successes, of their pedagogical approaches that ensure the success of NA students. Research (Bickmore & Bickmore, 2010; Eisenschmidt, Oder, & Reiska, 2013) indicates there is a need for induction processes that (a) offer opportunities to be reflective practitioners, (b) increase effective curriculum and teaching strategies, (c) provide mentors to serve as a resource, and (d) build professionalism that contributes to sustainable education outcomes.

Specific to Indigenous teacher education, participants must become reflective practitioners who understand the intersection between their own identities, the cultural contexts of their students and communities, and academic achievement. The induction program for the participants takes into consideration the unique historical, cultural, linguistic and political contexts that impact an Indigenous teacher identity (Kahumoku, Kekahio, & Ka’u 2010). The two years of induction will include (a) contact with an assigned mentor [a previous ITEP graduate, a teacher in the school they are employed, or a “Teachers in Industry” graduate (description included in *Other Attachments*)]; (b) UA mentorship (bi-weekly via video and teleconference); (c) focus group sessions in regional areas of the state (northwest, northeast and south) (Topics include technology, curriculum development, Indigenous knowledge/language, social justice pedagogy, I-STEM practices); (d) workshops provided by SARSEF (see letters of support in *Letters, Other Attachments*); and (e) participation in induction services offered by their school/district. Two of our Partner schools, BUSD and Sacaton Public Schools have induction programs. Sacaton’s program focuses on professional development within reading, technology, adopted curriculum programs, and building a collaborative mentoring environment. We will work with Partner schools to establish an induction program unique to their cultural and

academic context.

(5) Assisting Participants in Meeting the Service Obligation Requirements

Participants will be required to sign a Service Payback Agreement and ITEP Agreement prior to starting the EE program. A payback requirement underlies participation in ITEP and this will be clearly conveyed to participants prior to, during, and after ITEP. The information conveyed to each ITEP participant includes: (1) obligation to fulfill a work-related service equivalent to the total period of time for which preservice training was actually received on a month-to-month basis (approximately 22 months); (2) for participants that initiate, but cannot complete, a work-related payback, the payback converts to a cash payback that is prorated based upon the amount of work-related payback completed; and (3) a ledger/budget tracking sheet for each participant will be shared with participants every semester so they will have more “real time” knowledge of their funding. In addition to the close interactions with participants during the EE program, the PDs and PC will be working closely with participants during the induction period (in-person, video/phone conference, group sessions). During this time, we will provide professional support to sustain employment in a school and assist in ensuring participants update and submit required information to data collection system.

PROJECT PERSONNEL

Key personnel include eleven core TLSS faculty whose responsibilities are project management, teaching, supervision, advising, mentoring, induction, follow up, and dissemination. Fourteen Associated Faculty will participate in mentoring, teaching, follow-up, and dissemination; while focusing on their primary role of indigenizing and integrating STEM into the existing EE program. These faculty have unique expertise within teacher education, research, and service among diverse communities (i.e., Latin@, African American, and

Indigenous populations). The faculty are well-respected within their field of research and have a strong focus on culturally sustaining, STEM, and social justice issues in education. Their resumes are included in *Other Attachments*.

Core Project Faculty

(1) Project Director – Qualifications, Training, Experience, Cultural Competence

Dr. Valerie Shirley (Diné, Assistant Professor of Indigenous Education/Affiliate Faculty with American Indian Studies [AIS]) has research and teaching interests in the areas of Indigenous social justice pedagogy, curriculum development, teacher education and Indigenous education. She was formerly an EE teacher at Kin Dah Lichi'i Olta' (Diné school) and Salt River Pima-Maricopa Indian Community (SRP-MIC) schools located in Arizona. She has conducted professional development with Pascua Yaqui *Illi Uusim Mahtawa'apo* Early Childhood School. Dr. Shirley's responsibilities will include overseeing and coordinating all aspects of the project, including project management, evaluation, and reporting; recruiting participants; collaborating with UA, Partners and Tribal education entities; communicating with the AC; working closely with the PC, program personnel, mentor teachers, and participants; co-teaching the Indigenizing Pedagogies course; and supporting participants and schools during induction.

(2) Key Personnel – Qualifications, Training, Experience, and Cultural Competence

Dr. Jeremy Garcia, Co-Director (Hopi/Tewa, Assistant Professor of Indigenous Education/ Affiliate Faculty with AIS) was formerly an Endowed Professor of the Electa Quinney Institute for American Indian Education at the University of Wisconsin-Milwaukee. His research and teaching interests include critical and culturally responsive curriculum, teacher education, Indigenous curriculum development, and family/community engagement in Indigenous education. He also was an EE teacher and family engagement coordinator for the

SRP-MIC. As Co-Director, Dr. Garcia's responsibilities will include assisting the PD with coordinating all aspects of the project. These include project management, evaluation and reporting; the recruitment of participants; sustaining/developing partnerships between UA, Partners, and Tribes; assisting with Advisory Committee sessions; co-teaching the Indigenizing Pedagogies course; and working closely with the PC, program personnel, mentor teachers, and participants. He will meet with participants, PD, and PC on a weekly basis.

Tenure- and Practice-Track Faculty and Supervisors: EE courses are taught by experienced tenure-track and practice-track professors in specific content areas. Supervisors manage field and student teaching practica. This central core of faculty ensures participants will meet graduation and certification requirements.

Project Coordinator (To be Hired): She/he will assist with recruitment, coursework, site coordination, data collection/analysis, reporting, induction, dissemination, and follow-up; and, will serve as a liaison between the UA, Tribes, Partners, and Advisory Committee to meet project objectives. The PC must have experience in teacher education, mentoring, and working with NA students and communities. The PC will serve as a primary contact for participants and will have weekly contact with them.

Qualifications of Associated Faculty

The Associated Faculty is a group of UA faculty who will assist in indigenizing and integrating STEM into the EE program. Each faculty member is committed to addressing the need to increase NA teachers and will assist in modifying the existing program, serving as a mentor, teaching courses, and serving on the AC. They also have a strong desire to build partnerships with Tribal entities to sustain Indigenous teacher education. They bring expertise in Indigenous language, STEM disciplines, equity and social justice, and program development.

The following Associated Faculty members specialize in Indigenous education, specifically related to language, culture, Indigenous knowledge systems, and culturally sustaining pedagogy. *Dr. Ofelia Zepeda* (Tohono O'odham, Regents' Professor of Linguistics/Affiliated Faculty with [AIS] and Director of AILDI) examines American Indian language revitalization and maintenance issues. She received the John D. and Catherine MacArthur Foundation Fellowship for her lifetime work. *Dr. Sheilah Nicholas* (Hopi, Associate Professor of TLSS [LRC]/Affiliate Faculty with AIS) examines Indigenous language maintenance/reclamation and Indigenous language ideology and epistemology in NA education.

The following Associated Faculty address curriculum and instructional methodologies specific to diverse communities and STEM-related fields. *Dr. Sara Tolbert* (Associate Professor of Science Education) researches culturally responsive models of science education, STEM, and sociopolitical control in science-related social issues. *Dr. Kristin Gunckel* (Associate Professor of Science Education) focuses on designing curriculum materials, pedagogical practices, and assessments to support students in developing model-based understandings of the movement of water through environmental systems. *Dr. Karletta Chief* (Diné, Associate Professor and Extension Specialist in the Department of Soil, Water and Environmental Science) examines Indigenous perspectives on sustainable water practices and climate change vulnerability of Native Americans in the Southwest. *Dr. Blaine Smith* (Assistant Professor of New Literacies and Bi/Multilingual Immigrant Learners/Affiliate Faculty with Second Language Acquisition, Teaching) researches bi/multilingual adolescents' digital literacies across contexts, with special attention to their multimodal composing processes and products. *Dr. Erin Turner* (Professor of Mathematics Education) examines how mathematics instruction can draw upon children's multiple mathematical funds of knowledge in ways that support mathematical understanding and

a sense of agency. *Dr. Marcy Wood* (Associate Professor of Mathematics Education) examines elementary mathematics teacher education, complex instruction, equity education, and elementary mathematics teacher professional development.

The following Associated Faculty specialize in program development, field placement, and certification in the state of Arizona. *Dr. Donna Jurich* (Director of Elementary and Early Childhood Education) coordinates all EE program initiatives. Her scholarship centralizes on culturally appropriate practices and teacher education. *Margaret Shafer* (Director, Office of Field Experiences) is responsible for coordinating off-campus field experience and student teaching placements. She has more than 16 years of leadership experience as a former principal and superintendent. *Sara Knepper* (Director, Academic Advising & Certification Officer) is responsible for responding to each inquiry by interested individuals during recruitment and advising all participants.

(3) Consultants – Qualifications, Training, and Cultural Competence

Consultants in **Language Immersion, Indigenous Community-based Science Education, and Culturally Sustaining Pedagogies** will provide expertise to the project. Three consultants in Language Immersion will work directly with the participants. *Dr. Stacey Oberly* (Southern Ute, Coordinator of Ute Language & Culture/ Ute Language Teacher/ Instructor in AILDI) is prominent in the field of Indigenous Language Education. She has worked with previous ITEP participants in AILDI and provided them with valuable knowledge and skills in teaching lessons completely in their Indigenous languages. Two additional consultants who are prominent in the field of Indigenous Language Education and Revitalization will be identified in consultation with the American Indian Language Development Institute at the University of Arizona. Five consultants in Indigenous Community-based Science Education will work directly

with the participants. *Dr. Gregory Cajete* (Associate Professor in Education/ Director of Native American Studies) is prominent in the field of Indigenous Science Education. He has worked with previous participants and provided them with valuable knowledge and skills in developing curriculum around environmental issues impacting Indigenous communities—weaving together traditional ecological knowledge with western science. *Dr. Megan Bang* (Associate Professor, School of Education and Social Policy) is prominent in the field of Indigenizing STEM. She will work with project participants to design curriculum that integrates, sustains, and revitalizes Indigenous knowledge with western science. Three additional consultants will be identified and will work with participants in the indigenizing aspects of STEM. Finally, one consultant in Culturally Sustaining Pedagogies will work directly with the participants. *Dr. Django Paris* (Associate Professor in Education/ Director of the Banks Center for Educational Justice) is prominent in the field of critical multicultural and social justice education. He will provide the participants with dialogues, strategies and the integration of the conceptual framework on culturally sustaining pedagogies to assist in curriculum development.

MANAGEMENT PLAN

The management plan provides a blueprint for achieving the project objectives in a systematic and timely manner. The milestones for accomplishing project tasks are directly tied to the project's objectives. *Table 1, Project Management and Timeline*, shows the tasks, timeline, persons responsible, and outcome for each objective. Successful use of the plan will result in the timely completion of participant activities to ensure graduation and employment within the grant period. In particular, management of participants' performance will be carefully monitored through weekly interactions. In these meetings, participants will discuss issues related to the program—classes, projects, field placement, and student teaching. These meetings will provide

an informal venue for identifying problems and brainstorming solutions. Formal procedures for identifying and resolving program issues are described in the evaluation section.

(1) The extent to which the costs are reasonable as related to design, objectives, number of persons to be served, and the anticipated results and benefits

The primary focus of the project is to ensure each participant is supported to succeed by providing quality engagement in coursework and mentoring opportunities. The Budget, Budget Narrative, and Management Plan demonstrate a reasonable and adequate budget to meet the project's objectives. All of the funds, both federal and UA contributed, will be used to support participants to actively engage in their program of study, graduate and obtain certification, secure and retain employment, and to become successful educators. Because financial constraint is a major reason participants do not finish their undergraduate programs, funds are provided to cover tuition, fees, technology, books, and cost of living and dependent stipends.

The amount of funding requested was calculated based on previous personnel experience to ensure the proper and successful implementation of the project. Budget requests are designed to provide enough support so that participants can receive state-of-the-art training, study full time, and graduate on time. Given our current resources, we can properly prepare 14 new EE teachers in this project.

(2) Adequacy of Procedures for Ensuring Feedback and Continuous Improvement

The multifaceted evaluation process will improve the quality and effectiveness of the project and will ensure that the project objectives will be met on time and within budget. Standard evaluation procedures and forms from the existing EE program will be modified to evaluate participant progress in this project. Ongoing evaluation of project administration will provide information that can be used immediately to make necessary project modifications. EE

course instructors, supervisors, Associated Faculty, participants, Partner personnel, and Advisory Committee members will contribute to the evaluation process by offering feedback on student progress, performance evaluations, student placements, course design, program initiatives, and Tribal partnerships. The Partners include the Baboquivari Unified School District, Gila River Community Schools (Blackwater, Gila Crossing, Casa Blanca), Sacaton Public School District, Tohono O’odham Community College, and San Carlos Apache College. The inclusion of the Partners and AC members in the evaluation process is important because they support continuous improvement of the project with on-going dialogues that shape the course of the project for participant success as well as overall project success.

(3) Time Commitments of the PD and Other Key Personnel

The project focuses on supporting and successfully preparing NA participants to become EE teachers in LEAs that serve NA students. Table 1 shows the progression of project activities and the involvement of each project participant. During the AY, The Project Director (Dr. Shirley) and the Co-Director (Dr. Garcia) will each spend .15 FTE for Years 1-3; for Years 4 and 5, each will alternate .15 FTE (Shirley Year 4 and Garcia Year 5). During the summer, their FTE allocation will be 1.0 for one month during Years 1-5. In Year 2, their time is split between federal funds and UA cost share.

Dr. Shirley will be responsible for financial and operational oversight, daily management, evaluation, and reporting activities. Specifically, she will coordinate recruitment, ensure proper participant advisement and mentorship, participate in participant performance evaluation, and facilitate and monitor school placements. She will also be responsible for addressing any project management or participant performance problems that may arise. Although rare, they can occur. If they do, all relevant parties (e.g., participant, advisor, PC, and PD) will meet to develop

Table 1. Project Management and Timelines

Objectives/ Activities	Who? ²	Year 1 ¹				Year 2				Year 3				Years 4 & 5				Outcomes
		Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	
1. To indigenize existing EE pedagogy, curriculum, mentoring, and community partnerships																		
Modify existing courses/practica	1,2,3,5,8	X	X	X	X	X	X	X	X	X	X	X	X					Courses/practica offered
Review/modify courses/practica	1,2,3,5,6,8		X	X	X	X	X	X	X	X	X	X	X					Revised courses/pract. offered
Identify issues/barriers/solutions	All			X	X	X	X	X	X	X	X	X	X					Solutions put into place
Dev/implement new resources	1,2,5	X	X	X	X	X	X	X	X	X	X	X	X	X				New seminar/colloquium
Evaluate process	1,2,4,5,6,8		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	EE program revised in steps
Disseminate to participants	1,2,3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Reports to Fac, Partners, field
2. To prepare 14 qualified NA participants to graduate and obtain certification																		
Disseminate recruitment materials	1,2,3,7	X	X	X	X													Applications received
Review applicants; enroll	1,2,3,5	X	X	X	X	X												14 quality partic. enrolled
Mentoring	1,2,3,5,6,8	X	X	X	X	X	X	X	X	X	X	X	X					Bi-monthly mtgs;
Family orientation	1,2,3,5,8	X		X	X													100% attend
Complete coursework	1,2,4	X	X	X	X	X	X	X	X	X	X	X						100% (14 partic) complete
Complete field placement	3,4,5	X	X	X	X	X	X	X	X	X								86% (12 partic) complete
Complete student teaching	3,4,8					X	X			X	X	X	X					86% (12 participants)
Retain participants	1,2,3,6	X	X	X	X	X	X	X	X	X	X	X						86% (12 partic) graduate
Obtain certification	1,2,4					X	X			X	X	X	X					86% (12 participants) obtain
Evaluate/Disseminate	1,2,3,4,6,7			X	X	X	X	X	X	X	X	X	X	X	X	X	X	Proj objs met; partic on track

¹Q1 (Jan-Mar) Q2 (Apr-June) Q3 (July-Sept) Q4 (Oct-Dec); ²PD (1) Co-PD (2) PC (3) Tch/Supv Fac (4) Assoc Fac (5) AC (6) Partners (7)

Table 1. Project Management and Timelines, continued

Objectives/ Activities	Who? ²	Year 1 ¹				Year 2				Year 3				Years 4 & 5				Outcomes
		Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	
3. To facilitate employment and provide induction services																		
Identify employment sites	1,4,5,8												X	X	X	X	X	86% (12 participants) obtain
Apply for/obtain jobs	1,3,8												X	X				86% (12 participants) obtain
Meet with schools-plan induction	1,3,8											X	X	X	X	X	X	Process/schedule developed
Orient participants to service	1,3,8												X	X	X			
Provide induction services	1,2,8													X	X	X	X	86% retain employment
Evaluate	1,2,3,6,7														X	X	X	Employer reports
Disseminate	1,2														X	X	X	Reports to Fac, Partners, field
4. To infuse Indigenizing-STEM practices into the preparation of project participants																		
Workshops & PLT (EE prog)	1,2,3,4,5,6	X	X	X	X	X	X	X	X	X	X	X	X	X				Skills pract ideas for cur dev
Field-based STEM Course	1,2,3,5,6						X											Curric & Instru practices
Prof dev workshops	1,2,3,5,6,7														X	X	X	Lesson plans confidence
5. To build strong relationships among Tribes, LEAs, IHEs for sustainability and institutionalization																		
Identify issues/barriers/solutions	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	Roundtable discussions
Engage new partners	All	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	New partners join efforts
Create new partnerships	1,2,5,6,8					X	X	X	X	X	X	X	X	X	X	X	X	

¹Q1 (Jan-Mar) Q2 (Apr-June) Q3 (July-Sept) Q4 (Oct-Dec); ²PD (1) Co-PD (2) PC (3) Tch/Supv Fac (4) Assoc Fac (5) AC (6) Partners (7)

a professional growth plan. The plan and its outcomes will be documented in writing. Dr. Garcia will assist with recruitment, advising and mentoring, and will support participants to secure gainful employment. Both Dr. Shirley and Dr. Garcia will work with the Associated Faculty, Partners, and AC to ensure the EE program is modified to reflect Indigenous perspectives and STEM infusion so that participants are well grounded in 21st century NA issues that will impact students in their field placement and student teaching sites.

During the summers, Drs. Shirley and Garcia will work with participants to review completed work, complete required courses, and plan future activities. Summers also will be used to analyze evaluation data gathered from participants, faculty advisors, Partners, and Advisory Committee members. Based on this input, the project will be modified as needed.

Teaching and Supervisory faculty will oversee coursework and practica and will work with the PDs and Partner school personnel to ensure participants are on track to complete those requirements. The Associated Faculty will support program modification, teach specialty courses, and provide mentoring in areas of interest to the participants.

The Project Coordinator (.75 FY for Years 1-5) will meet weekly with the participants and liaison with the EE faculty for site placement. She/he also will manage day-to-day financial and database tasks that support all aspects of the project, including processing participant stipends, purchasing and travel reimbursements, and prepare materials associated with coursework, advisement, and program.

Other Attachment File(s)

* Mandatory Other Attachment Filename:

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Other Attachments

Resumes

References

Letters of Support

Teachers in Industry

Teaching, Learning & Sociocultural Studies Position Statement

List of Community Colleges

Application Requirements

STEM Supporting Narrative

University of Arizona IDC Rate Agreement

RESUMES

Valerie J. Shirley

Jeremy Garcia

ITEP Project Coordinator

Associated Faculty and Consultants

Megan Bang

Gregory A. Cajete

Karletta Chief

Kristin L. Gunckel

Donna Jurich

Sara M. Knepper

Javier O. Lopez

Sheilah E. Nicholas

Stacey Oberly

Django Paris

Margaret Shafer

Blaine Smith

Sara Tolbert

Erin Turner

Marcy Wood

Ofelia Zepeda

Valerie J. Shirley
Project Role: Project Director

Current Position

Assistant Professor, Language, Reading, and Culture Program
Department of Teaching, Learning and Sociocultural Studies
College of Education, University of Arizona

Affiliate Faculty, Graduate Interdisciplinary Degree Program
American Indian Studies Program, University of Arizona

Education

2011, Ph.D., Purdue University (Curriculum Studies Program)
Dissertation: Indigenous Subjectivities: Diné Youth (De)Construct Identity.
Major Professor: JoAnn Phillion
2004, M.S., University of Wisconsin, Madison (Curriculum and Instruction Program)
1999, B.A., Arizona State University (Elementary Education)

Journal Articles

Shirley, V. (2017). Indigenous social justice pedagogy: Teaching into the risks and cultivating the heart. *Critical Questions in Education*.
Garcia, J. & **Shirley, V.** (2012). Performing decolonization: Lessons learned from Indigenous youth, teachers and leaders' engagement with critical Indigenous pedagogy. *Journal of Curriculum Theorizing*, 28(2), 76-81.

Chapters in Scholarly Books

Shirley, V. & Angulo, D. (submitted, in review). Enacting Indigenous research methods: Centering Diné epistemology to guide the process. In S. Windchief, S. & T. San Pedro (Eds.). *Applying Indigenous research methods: Peoples and communities*. New York: Routledge.
Garcia, J., **Shirley, V.**, Windchief, S., & San Pedro, T. (submitted, in review). Pedagogy of solidarity: Hope and promise in Indigenous movement spaces. In Paris, D., Eaglesfield, A., Paris, R., & San Pedro, T. (Eds.). *Education in movement spaces: From Standing Rock to Chicago Freedom Square*. New York: Routledge.
Phillion, J., Malewski, E., Rodriguez, E., **Shirley, V.**, Kulago, H., & Bulington, J. (2008). Promise and perils of study abroad: White privilege revival. In T. Huber (Ed.), *Teaching and learning diversity: International perspectives on social justice and human rights* (pp. 365-382). Greenwich, CT: Information Age.

Scholarly Work in Progress

Garcia, J., **Shirley, V.** & Kulago, H. (under contract, in progress). *Indigenizing education: Transformative theories and possibilities in Indigenous communities*. Greenwich, CT: Information Age.
Shirley, V. (submitted, in review). Being intentional: Infusing Indigenous epistemologies into the classroom. In J. Garcia, **V. Shirley** & H. Kulago (Eds.) *Indigenizing education:*

Transformative theories and possibilities in Indigenous communities. Greenwich, CT: Information Age.

Selected Scholarly Presentations

- Garcia, J. & Shirley, V. *Beyond theorizing: Land as pedagogy and praxis.* Keynote presentation at the Critical Race Studies in Education Association, May 31, 2018.
- Shirley, V. *Indigenous Social Justice Pedagogy: Teachers as Nation-builders.* Keynote presentation at Augsburg University, Minneapolis, MN, May 18, 2018.
- Garcia, J., Shirley, V., Jacob, M., Sabzalian, L. *Sustaining Pathways for Indigenous Teacher Education.* Panel presentation at the Oregon Indian Education Association Conference, May 2, 2018.
- Shirley, V. *Indigenous Teacher Education Project.* Keynote presentation at University of Oregon, Eugene, OR, May 3, 2018.
- Shirley, V. *Indigenous subjectivities: Dine' youth (de)construct identity.* Panel presentation at the Navajo Research Conference, Window Rock, AZ, October 18, 2017.
- Shirley, V., Garcia, J., Lopez, V. & Rosenberg, W. *Indigenous educators as superheroes: Reflective practices for transformative pedagogical changes.* Panel presentation at the Native American Child and Family Conference, Albuquerque, NM, March 14, 2017.
- Shirley, V. & Salcido, J. *Pedagogy of empowerment.* TLS Brown Bag Lunch Series, Tucson, AZ, March 28, 2017.
- Shirley, V. *Rise up: Justice-oriented youth leadership in Indigenous communities.* 2017 Native American Youth Leadership Conference, Flagstaff, AZ, December 8, 2017.
- Shirley, V. *Preparing teachers to indigenize the classroom.* Gathering of Educators, Tucson, AZ, February 18, 2017.
- Shirley, V. *Empowering Indigenous Youth and Teachers as Nation Builders through Indigenous Social Justice Pedagogy.* Paper presented at the American Educational Research Association, Washington, D.C., April 10, 2016.
- Shirley, V. *Native Control of Native Education: Language, Assessment, Teacher Preparation and Education, Research and Policy.* Panel Presentation at the National Indian Education Association, Portland, OR, October 15, 2015. (Invited Panel)
- Garcia, J. & Shirley, V. *Indigenous Consciousness: Curriculum and Pedagogical Implications.* Presented at the Gathering of Native Educators: Integrating STEM with Native American Students, Tucson, AZ, May 2015.

Research

- Garcia, J. & Shirley, V. (2017-present). *Transformative Moments: Indigenizing Curriculum and Pedagogy.* University of Arizona, Tucson, Arizona.
- Shirley, V. (2015-present). *Teaching for Social Justice: Preservice Teachers Share Their Experiences.* University of Arizona, Tucson, Arizona.
- Shirley, V. (2009-2011). *Indigenous Subjectivities: Dine' Youth (De)Construct Identity.* Purdue University, West Lafayette, Indiana.

Previous Employment

- 2012-2014, Adjunct Faculty, School of Education, University of Wisconsin, Milwaukee
- 2012-2014, Student Teaching Supervisor, School of Education, University of Wisconsin, Milwaukee

2014, Adjunct Faculty, Elementary Education Teacher Education Program, College of Education, Northern Arizona University
2005-2006, Research Assistant, Study Abroad Program- Honduras, College of Education, Purdue University
2004-2005, Program Specialist, Education Research, Environmental Health Program, Inter Tribal Council of Arizona, Inc.
2003-2004, Research Assistant, Home-School Relations Project, School of Education, University of Wisconsin, Madison
2002-2003, Liaison and Tutor, PEOPLE (A Pre-college Enrichment Opportunity Program for Learning Excellence) Program, University of Wisconsin, Madison
2000-2002, Gifted and Talented Program Teacher, Salt River Elementary School, Salt River Pima-Maricopa Indian Reservation
1999-2000, First Grade Teacher, Kin Dah Lichii Olta, Diné Nation, Ganado, Arizona

Tribal Nation and Schools Community Service

2016-present. Indigenous Teacher Education Project Collaboration with Indigenous Communities.
2016-2017. Professional Development. Mní Wičhóni Nakíčiziŋ Owáyawa (Defenders of the Water School) at Sioux Nation, North Dakota
2016-2017. Curriculum Consultant (with Jeremy Garcia). Pascua Yaqui Early Childhood Education, Tucson, AZ
2014-present, Member. Native Education Alliance, Tucson, AZ

Honors and Awards

2010, Purdue Research Funding Grant—Research Assistantship, Purdue University
2009, Navajo Nation Graduate Trust Fund—Dissertation Award
2009, Bilsland Dissertation Completion Fellowship, Purdue University
2005-2009, Ross Doctoral Fellowship, Purdue University
2006-2008, Navajo Nation Chief Manuelito Scholarship
2006-2010, American Indian Graduate Center Scholarship
2006, Orla K. Harlan Alumni Scholarship
2002-2004, Navajo Nation Chief Manuelito Scholarship
2003, Project Assistantship—PEOPLE (Pre-college Enrichment Opportunity Program for Learning Excellence) Program, University of Wisconsin, Madison
2002, Advanced Opportunity Fellowship, University of Wisconsin, Madison
1994-1999, Navajo Nation Undergraduate Scholarship

Grants

Principal Investigator. (2016-2020). *Indigenous Teacher Education for Academic and Cultural Sustainability*. Office of Indian Education, Professional Development Grant. University of Arizona, Tucson, AZ. (\$1,008,686)
Co-Principal Investigator. (2017). Smith Junior Faculty Award. College of Education, University of Arizona, Tucson, AZ. (\$7,600)
Senior Personnel. (2017-2021). *NRT-INFEWS: Indigenous Food, Energy, and Water Security and Sovereignty*, College of Agriculture and Life Sciences, University of Arizona, Tucson, AZ. (\$2,994,286)

Jeremy Garcia
Project Role: Co-Director

Current Position

Assistant Professor, Teaching and Teacher Education, Language Reading and Culture Program
Department of Teaching, Learning, and Sociocultural Studies
College of Education, University of Arizona

Affiliate Faculty, Graduate Interdisciplinary Degree Program
American Indian Studies Program, University of Arizona

Education

2011, Ph.D., Purdue University, West Lafayette, Indiana (Curriculum Studies)

Specialization: Indigenous Education

Dissertation: A Critical Analysis of Curriculum and Pedagogy in Indigenous
Education: Engaging Hopi and Tewa Educators in the Process of Praxis

Chair: JoAnn Phillion

2000, M.Ed., Michigan State University, East Lansing, Michigan (Curriculum and Instruction)

1997, B.A., Northern Arizona University, Flagstaff, Arizona (Elementary Education K-8)

Refereed Journals

Garcia, J. (2014). Re-Examining Indigenous conceptualizations of family and community involvement. *Journal of Family Diversity in Education*, 1(1), 58-74.

Garcia, J. & Shirley, V. (2012). Performing decolonization: Lessons learned from Indigenous youth, teachers and leaders' engagement with critical Indigenous pedagogy. *Journal of Curriculum Theorizing*, 28(2), 76-81.

Book Chapters

Windchief, S., Garcia, J., San Pedro, T. (2015). Red Pedagogy: Reflections from the field. In S. Grande, (Ed), *Red Pedagogy: Native American Social and Political thought, 10th Anniversary Edition*. Rowman & Littlefield: Lanham, MD.

Garcia, J. (2008). Honoring our role as fathers. In M. Benham, (Ed) *Indigenous Educational Models for Contemporary Practice: In Our Mother's Voice II* (pp. 169-184). New York: Taylor & Francis.

Garcia, J. (2008). A journey home: Did we ever leave? In M. Benham, (Ed) *Indigenous Educational Models for Contemporary Practice: In Our Mother's Voice II*. New York: Taylor & Francis.

Garcia, J. (2008). Cultural partnerships confront school culture. In M. Benham, (Ed) *Indigenous Educational Models for Contemporary Practice: In Our Mother's Voice II*. New York: Taylor & Francis.

Scholarly Works in Progress

- Garcia, J. (Chapter, In Progress). Indigenizing pedagogies: Critical, cultural, and transformative acts of Agency. In S. Steinberg (Ed.). *The SAGE handbook of critical pedagogies*. CA: SAGE Publishing
- Garcia, J., Shirley, V., Windchief, S., & San Pedro, T. (Submitted, In Review). Pedagogy of Solidarity: Hope and Promise from Indigenous Movement Spaces. In A. Eagle Shield, D. Paris, R. Paris, & T San Pedro (Eds). *Schooling in Movement Spaces: From Standing Rock to Chicago Freedom Square*. New York: Routledge (Expected Publication, 2018)
- Garcia, J. (Submitted, In Review). Indigenous Teachers: At the Cross-Roads of Applying Indigenous Research Methodologies. In S. Windchief & T. San Pedro, (Eds). *Applying Indigenous research methods: Peoples and communities*. New York: Routledge (Expected Publication, 2018)
- Garcia, J. (Submitted, In Review). Critical and Culturally Sustaining Indigenous Family and Community Engagement in Education. In T. Turner-Vorbeck & S. Sheldon (Eds.). *The Handbook on family, school and community partnerships in education*. New Jersey: Wiley-Blackwell (Expected Publication, 2018)
- Garcia, J., Kulago, H., Shirley, V (In Progress). *Empowering Epistemologies: Cross contextual narratives among Indigenous scholars, researchers and practitioners*. Greenwich, CT: Information Age.
- Garcia, J. (In progress). “*Indigenous Education: Negotiating within my conscience. Is this right? Should I teach it? Or should I not teach it?*”
- Garcia, J. (In progress). *Indigenous Resistance to Exploitation of Sacred Landscapes: Implications for Curriculum and Pedagogy*.

Selected Scholarly Presentations

- Garcia, J. & Shirley, V. *Beyond theorizing: Land as pedagogy and praxis*. Keynote presentation at the Critical Race Studies in Education Association, May 31, 2018.
- Garcia, J. *Indigenizing Pedagogies: Sacred Landscapes as Transformative Praxis*. Keynote presentation at Augsburg University, Minneapolis, MN, May 17, 2018.
- Garcia, J., Shirley, V., Jacob, M., Sabzalian, L. *Sustaining Pathways for Indigenous Teacher Education*. Panel presentation at the Oregon Indian Education Association Conference, May 2, 2018.
- Garcia, J. (November, 2017). Invited Keynote. *Native Youth Voices Matter: Pathways to Nation-Building*. Native Youth Leadership Conference. Flagstaff, Arizona.
- Garcia, J. (November, 2017). Invited panelist. *Indigenous Education as Critical Spaces of Engagement*. Native American Heritage Month. Native American Student Association. University of Arizona. Tucson, Arizona.
- Garcia, J. (November, 2017). *Indigenous Teacher Education Project*. Arizona Tri-University Indian Education. University of Arizona. Tucson, Arizona.
- Garcia, J. (2017). *Temporary Spaces?: Indigenous Teacher Education and Predominantly White Institutions*. Society for Applied Anthropology conference paper presentation. Santa Fe, New Mexico.
- Shirley, V., Garcia, J., Lopez, V., & Rosenberg, B. (2017). *Indigenous Educators as Superheroes: Reflective Practices for Transformative Pedagogical Changes*. Native American Education Child and Family Conference panel presentation. Albuquerque, New Mexico.

- Garcia, J. (June, 2017). *Indigenizing Education: Deconstructing Curriculum and Pedagogy*. National Indian Head Start Directors Association Conference. Denver, Colorado.
- Garcia, J. (2016). *Schools as Sacred Landscapes: Indigenous Pedagogy as Nation Building*. Bergamo Conference on Curriculum Theory and Classroom Practice paper presentation. Dayton, Ohio.
- Garcia, J., & Shirley, V. (May, 2015). *Indigenous Consciousness: Curriculum and Pedagogical Implications*. Gathering of Native Educators: Integrating STEM with Native American Students. Tucson, Arizona.

Research

- Garcia, J. & Shirley, V. (2017-present). *Transformative Moments: Indigenizing Curriculum and Pedagogy*. University of Arizona, Tucson, Arizona.
- Garcia, J. (2012-2013) *Contextualizing American Indian partnerships between home and school in an urban context*. University of Wisconsin-Milwaukee, Milwaukee, Wisconsin.
- Garcia, J. & Phillion, J. (2009-2010). *An Analysis of Hopi/Tewa Self-Education: Implications for Self-Determination in the 21st Century*, Purdue University, West Lafayette, Indiana.
- Garcia, J. (1999). *Examining the preservation of the Hopi language and culture within the home and school*, Michigan State University, East Lansing, Michigan.
- Garcia, J. (1997). *A comparative analysis of parental and community involvement between a Hopi/Tewa school and an urban school*, Northern Arizona University, Flagstaff, Arizona.

Previous Employment

- 2011-2014, Endowed Professor of the Electa Quinney Institute for American Indian Education, University of Wisconsin-Milwaukee
- 2011-2014, Assistant Professor of Curriculum and Instruction, Middle Childhood Early-Adolescent Program and Early Childhood Education Program, University of Wisconsin-Milwaukee
- 2003-2005, Program Coordinator of the Parent and Community Involvement Program Salt River Pima-Maricopa Indian Elementary School, Scottsdale, Arizona
- 2000-2003, Elementary Education Teacher, Salt River Pima-Maricopa Indian Community, Scottsdale, Arizona

Tribal Community Service and Outreach

- Indigenous Teacher Education Project (ITEP) Collaboration with Indigenous Communities with Valerie Shirley (2016-present).
- Curriculum Consultant. (2016-2017). *Indigenizing Curriculum and Pedagogy*. Native American Program. Tempe School District, Tempe, Arizona.
- Curriculum Consultant. (2016-2017). *Mní Wičhóni Nakíčizih Owáyawa* (Defenders of the Water School). Standing Rock Sioux Nation, North Dakota.
- Curriculum Consultant with Valerie Shirley. (2015-2017). Pascua Yaqui Early Childhood Education. Tucson, AZ
- Hopi Education Endowment Fund Board Member. (2013-2017). The Hopi Education Endowment Fund, Kykotsmovi, Arizona.
- Curriculum Consultant (2010-2015). The Hopi Foundation: *Lomasumi'nangwtukwsiwman* Natwani Coalition, Kykotsmovi, Arizona.

Curriculum Consultant (2009-2010). Hopi *Kuuyi* (Water) Curriculum: *Kuuyit oovi Suuvotumala* for 4th-6th grade, Kykotsmovi, Arizona.

Consultant (2004-2005). Parent Involvement Programs, Navajo and Hopi Nations, Arizona

Member (2003-2005). Department of Education Policy Committee, Salt River Pima-Maricopa Indian Community (SRPMIC), Arizona.

Member (2012-2014). American Indian Studies Advisory Committee, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin.

Consultant (2012). Cultural programming at the Indian Community School of Milwaukee, Franklin, Wisconsin.

Honors and Awards

Garcia, J. (2010-2011). Purdue University Research Foundation (PRF) Research, West Lafayette, Indiana.

Garcia, J. (2010-2011). Purdue University Dean's Doctoral Scholarship, West Lafayette, Indiana.

Garcia, J. (2010). American Education Research Association Curriculum Studies Graduate Student Advisory Board, Denver, Colorado.

Garcia, J. (2009-2010). Hopi Tribal Priority Educational Scholarship Award, Kykotsmovi, Arizona.

Garcia, J. (2009). Purdue University Research Foundation (PRF) Research Award, West Lafayette, Indiana.

Grants

Co-Principal Investigator. (2017-2020). National Science Foundation (NSF) NRT-IGE: Indigenous Graduate Education in Science and Engineering in the Southwest (IGESE-SW) Grant. University of Arizona, Tucson, AZ. (\$384,726)

Co-Principal Investigator (2016-2020). *Indigenous Teacher Education for Academic and Cultural Sustainability*. Office of Indian Education, Professional Development Grant. University of Arizona, Tucson, AZ. (\$1,008,686)

Principal Investigator. (2017). Smith Junior Faculty Award. College of Education, University of Arizona, Tucson, AZ. (\$7,600)

Co-Principal Investigator. (2016). UA Office of Student Engagement Strategic Investment: Diversity and Identity Competency Grant. University of Arizona, Tucson, AZ. (\$20,000).

Principal Investigator. (2012). (Re)generating American Indian Partnerships Between Home and School Project. University of Wisconsin-Milwaukee, Cultures and Communities. Milwaukee, Wisconsin and Indian Community School, Franklin, WI. (\$1,500)

PROJECT TITLE: Indigenous Teacher Education Project (ITEP)

SALARY: \$40,000 (.75 FTE)

POSITION SUMMARY

Project Coordinator for a 4-year grant project entitled, *Indigenous Teacher Education Project*. The project will prepare a cohort of Native American preservice teachers in the UA Elementary Education Program.

RESPONSIBILITIES

The responsibilities of the Project Coordinator are to assist the Project Director and Co-Director with project activities such as planning, recruiting, reporting, data collection, analysis, course assistance, site coordination, serving as a liaison between the UA, partner schools, Tribes and participants, and providing academic and mentoring support to the project participants. The Project Coordinator will serve as primary contact for project participants affiliated with this program.

DUTIES AND RESPONSIBILITIES

- Assist with recruitment activities, which includes traveling to Native American communities, local Tucson areas, and state and tribal community colleges and agencies.
- Assist with retention of ITEP participants by providing effective academic, personal, and financial advising and support, teaching students academic planning skills to become self-reliant, successful students, and helping aide in their personal and academic growth.
- Assist Project Director and Co-Director with the supervision, training, and mentoring of student cohort.
- Assist in creating and maintaining the project web page and social media.
- Oversee student engagement committees.
- Maintain current knowledge of UA graduation requirements and have an understanding of Elementary Education Program and certification requirements.
- Assist students and provide information on the financial aid process, including sources such as scholarships and various forms of funding opportunities.
- Maintain effective communications with Director, Co-Director, Tribal Partners, Associated Faculty, Elementary Education program faculty and staff, advising staff and other college departments.
- Refer students to the appropriate professionals for services on the UA Campus, including writing and academic support and assigning faculty mentors.
- Plan, organize, coordinate, and evaluate workshops/activities designed to enhance student knowledge on a variety of topics related to academic and professional expectations, Indigenous educational contexts, career planning, various resources on campus, and career planning.
- Lead small group activities related to professional teaching responsibilities.
- Assist with tracking and reporting needs and assessments including documentation or project activities, student records, and input of data into the student record system.
- Participate in related meetings in order to plan and evaluate project activities for effectiveness.

- Meet regularly with the Project Directors, Elementary Education Program staff, Tribal Partners and Associated Faculty.
- Assist with preparing and submitting program activity and outcome reports in a timely manner.
- Develop and distribute various publications, such as the monthly newsletter, to keep students informed of important dates and activities.
- Plan and coordinate various events such as orientation and year end achievement ceremony or gatherings.
- Assist with Induction Activities.
- And other duties as assigned by Project Directors.

MINIMUM QUALIFICATIONS

- A bachelor's degree in education, counseling, or a related field.
- Experience working with diverse groups underrepresented in higher education, particularly Native American students.
- Understanding of Native American histories, cultures and sovereignty rights.
- At least one year of experience in: developing workshops and/or class curriculum in teacher education; facilitating large and small group activities; and developing academic intervention strategies with students.
- Demonstrated skills in public speaking, workshop facilitation and/or teaching.
- Demonstrated skills in computer programs, software, social media, and various technology.

PREFERRED QUALIFICATIONS

- Ability to formulate creative ideas on how to support the overall success of the students and the project.
- Knowledge of university academic procedures. Ability to work with sensitive and confidential student information.
- Master's degree.

Megan Bang

Project Role: Indigenous Community-based Science Education Consultant

Current Position

Associate Professor, Educational Psychology, Learning Sciences and Human Development,
University of Washington-Seattle
Faculty, University of Washington Institute for Science + Math Education
(<http://sciencemathpartnerships.org/>)
Co-Director, Native American Education Certificate, University of Washington-Seattle
Program Director, Learning Sciences and Human Development, University of Washington-Seattle

Education

Northwestern University, Ph.D. 2009
Specialization: Learning Sciences, certificate in Cognitive Science
Advisors: Bruce Sherin (Chair), Carol Lee, and Douglas Medin
Community Committee Members: Joseph Podlasek, Karen Washinawatok
Doctoral Dissertation: "Understanding Students' Epistemologies: Examining Practice and Meaning in Community Contexts"
Post-Doctoral Training – TERC, Cheche Konnen Center
Advisors: Beth Warren and Ann Rosebery
Williams College, BA 1997. Major: Political Science with Political Theory concentration
Minors: History & African Studies

Journal Articles

Marin, A. & Bang, M. (accepted). "Look it, this is how you know:" Family forest walks and knowledge building about the natural world. *Cognition and Instruction*.

Bang, M., Pugh, P., & McGinty, M. (accepted). Relational Epistemologies in Land Based Learning Environments: Reasoning about Ecological Systems and Spatial Indexing in Motion. *Culture Studies in Science Education*.

Barajas, F. & Bang, M. (accepted). Towards Indigenous Making and Sharing. *Equity and Excellence*.

Bang, M, Marin, A. & Medin, D. (accepted). If Indigenous peoples stand with science, will Science stand with us?. *Daedalus: Journal of the American Academy of Arts and Sciences*.

Philips, T., Bang, M. & Jackson, K. (accepted). Articulating the "how," the "for what," and the "for whom" in concert: A call to broaden the benchmarks of our scholarship. *Cognition And Instruction*.

Bang, M., Alfonso, J., Faber, L., Marin, A., Marin, M., Medin, D., Waxman, S., & Woodring, J. (accepted). Perspective Taking in Early Childhood Books: Implications for Early Science Learning. *Culture Studies in Science Education*.

Medin, D., ojalahto, b., Marin, A., & Bang, M. (2017). Systems of (non-) diversity. *Nature Human Behaviour*, 1, 0088.

Washinawatok, K., Rasmussen, C., Bang, M., Medin, D., Woodring, J., Waxman, S., Marin, A.,

- Gurneau, J., & Faber, L. (2017). Children's Play with a Forest Diorama as a Window into Ecological Cognition. *Journal of Cognition and Development*.
- Philip, T., Vossoughi, S., Bang, M., Zavala, M., & Jurrow, S. (2017). The Role of the Learning Sciences in a New Era of US Nationalism. *Cognition and Instruction*, 35 (2).
- Bang, M., & Vossoughi, S. (2016). Participatory Design Research and Educational Justice: Studying Learning and Relations Within Social Change Making. *Cognition and Instruction*, 34(3), 173-193.

Book Chapters

- Bang, M., Nolan, C. & Ishimaru, A. (in press). Engaging Native Families. To appear in: McWayne, C., Doucet, F., & Sheridan, S. (eds.) *Research on Family-School Partnerships: Ethnocultural Diversity and the Home-to-School Link*. Springer.
- Barajas-López, F. & Bang, M. (in press). Towards Indigenous Making and Sharing: Implications for Mathematics Learning. Chapter in *Annual Perspectives in Mathematics Education (APME): Rehumanizing Mathematics for Students who are Black, Indigenous, and/or Latin@/x*
- Brayboy, B. & Bang, M. (in press). Indigenous Education and the Nation State: To appear in: Smith, L. & McKinnley, L. *Handbook of Indigenous Education*.
- Bang, M., Nolan, C., & Magdaid-Morgan, N. (in press). Engaging Indigenous Families. To appear in: Smith, L. & McKinnley, L. *Handbook of Indigenous Education*.
- Marin, A., Stewart-Ambo, T., & Bang, M. (in press). Urban Indigenous Education: Looking back, Looking Forward. To appear in: Smith, L. & McKinnley, L. *Handbook of Indigenous Education*.
- Marin, A. & Bang, M. (in press). Seeing together: The ecological knowledge of Indigenous Families in Chicago urban forest walks. To appear in: García-Sánchez, I. & Faulstich Orellana, M. (eds) *Everyday Learning: Leveraging Non-Dominant Youth Language and Culture in Schools*. Routledge Press.
- Warren, B., Bang, M., Taylor, E., Rosebery, A. (in press). Culture, race, language, and Disciplinary learning in contexts. To appear in: Na'ilah Suad Nasir, Carol D. Lee, and Roy Pea (Eds.) *Handbook of the Cultural Foundations of Learning*. Routledge Press.
- Marin, A. & Bang, M. (2016). Indigenous heritage communities of north America. To appear in: Peppler, K. (Ed) *Encyclopedia of Out-of-School Learning*. SAGE press.

Funded Research Projects

- Bang, M. (2017). Learning in Places: Developing Field Based Science Education. National Science Foundation – DRK-12. Funded 7/1/2017-6/30/2021 (\$2.9 million). NSF REC-1720578 Project Role: PI, Community Partners: Seattle Public Schools, Tilth Alliance
- Bang, M. (2017). Complex socio-ecological systems reasonings: An investigation of the impact of culture and experience on reasoning about complex socio-ecological phenomena among students from diverse backgrounds. National Science Foundation – AISL. Funded 9/1/2017-8/31/2021 (\$1.9 million). NSF REC- 1713368 Project Role: PI, Co-PI: Douglas Medin Community Partners: United Indians, American Indian Center

Biography Brief

Gregory A. Cajete, Ph.D.
6074 Cotton Tail Road N.E.
Rio Ranch, New Mexico 87144

Gregory Cajete, Native American educator whose work is dedicated to honoring the foundations of indigenous knowledge in education. Dr. Cajete is a Tewa Indian from Santa Clara Pueblo, New Mexico. He has served as a New Mexico Humanities scholar in ethno botany of Northern New Mexico and as a member of the New Mexico Arts Commission. In addition, he has lectured at colleges and universities in the U.S., Canada, Mexico, New Zealand, Italy, Japan, Russia, Taiwan, Ecuador, Peru, Bolivia, England, France and Germany.

He worked at the Institute of American Indian Arts in Santa Fe, New Mexico for 21 years. While at the Institute, he served as Dean of the Center for Research and Cultural Exchange, Chair of Native American Studies and Professor of ethno- science. He organized and directed the First and Second Annual National Native American Very Special Arts Festival held in respectively in Santa Fe, NM in 1991 and Albuquerque, NM in 1992. In 1995, he was offered a position in American Indian education in the University of New Mexico, College of Education

Currently, he is Director of Native American Studies and a Professor in the Division of Language, Literacy and Socio cultural Studies in the College of Education at the University of New Mexico. Dr. Cajete earned his Bachelor of Arts degree from New Mexico Highlands University with majors in both Biology and Sociology and a minor in Secondary Education. He received his Masters of Arts degree from the University of New Mexico in Adult and Secondary Education. He received his Ph.D. from International College – Los Angeles -New Philosophy Program in Social Science Education with an emphasis in Native American Studies.

Dr. Cajete has received several fellowships and academic distinctions, including the American Indian Graduate Fellowship from the US-DOE Office of Indian Education (1977-78); the D'arcy McNickle Fellowship in American Indian History from the Newberry Library, Chicago, IL (1984-85); and the first Katrin Lamon Fellowship in American Indian Art and Education (1985-1986) from the School of American Research in Santa Fe, NM.

Dr. Cajete is a practicing ceramic, pastel and metal artist. He is extensively involved with art and its applications to education. He is also a scholar of herbalism and holistic health. In this capacity, he has researched Native American, Chinese and Ayurvedic healing philosophies and the cultural perspectives of health and wholeness.

Dr. Cajete also designs culturally-responsive curricula geared to the special needs and learning styles of Native American students. These curricula are based upon Native American understanding of the "nature of nature" and utilizes this foundation to develop an understanding of the science and artistic thought process as expressed in Indigenous perspectives of the natural world.

Dr. Cajete has authored seven books : "Look to the Mountain: An Ecology of Indigenous Education," (Kivaki Press, 1994); "Ignite the Sparkle: An Indigenous Science Education Curriculum Model", (Kivaki Press, 1999); "Spirit of the Game: Indigenous Wellsprings (2004)," "A People's Ecology: Explorations in Sustainable Living," and "Native Science: Natural Laws of Interdependence" (Clear Light Publishers, 1999 and 2000). "Critical Neurophilosophy and Indigenous Wisdom," Don Jacobs (Four Arrows), Gregory Cajete and Jongmin Lee) Sense Publishers, 2010. "Indigenous Community: Teachings of the Seventh Fire," Living Justice Press, 2015). Dr. Cajete also has chapters in 22 other books along with numerous articles and over 250 national and international presentations.

Karletta Chief

Assoc. Professor & Extension Specialist
 University of Arizona
 Dept. of Soil, Water, and Environmental Sciences
 1177 E. Fourth Street, Shantz Bldg Rm 429, Tucson, AZ 85721
 (520) 626-5598
 kchief@email.arizona.edu

(a) Professional Preparation

Stanford University	Civil and Environmental Engineering	B.S., 1998
Stanford University	Civil and Environmental Engineering	M.S., 2000
University of Arizona	Hydrology and Water Resources	Ph.D., 2007
Desert Research Institute	Vadose Zone Hydrology	Postdoc, 2007-11

(b) Professional Appointments

2018-present	Assoc. Professor, U. of Arizona, Dept. of Soil, Water, and Environmental Sciences
2011-2018	Asst. Professor, U. of Arizona, Dept. of Soil, Water, and Environmental Sciences
Summer 2012-13	Research Methods Instructor, Students to Academic Professoriate for American Indians (SAPAI), University of Montana & Salish Kootenai Tribal College, Pablo, MT
2007-2011	Post Doctoral Fellow, Desert Research Institute (DRI), Div. of Hydrologic Sciences
2003-2007	Grad. Research Asst., U. of Arizona, Dept. of Hydrology and Water Resources
2002-2007	Grad. Teaching Asst., U. of Arizona, Dept. of Hydrology and Water Resources
2002	Research Intern, Navajo Nation, Dept. of Water Resources
1999	Environmental Engineering Intern, Environmental Protection Agency Washington D.C.
1998-2000	Research Asst., Stanford U., Civil and Environmental Engineering
1998	Environmental Engineering Intern, HDR Engineering, Phoenix, AZ

(c) Products

- Hiza Redsteer, M., K. Bemis, K. Chief, M. Gautam, B. R. Middleton, and R. Tsosie. 2013. Chapter 17: Unique Challenges Facing Southwestern Tribes: Impacts, Adaptation, and Mitigation In Assessment of Climate Change in the Southwest United States: A Technical Report Prepared for the U.S. National Climate Assessment.
- Gautam, M., K. Chief, and W. J. Smith, Jr. 2013. Climate Change in Arid Lands and Native American Socioeconomic Vulnerability: The Case of the Pyramid Lake Paiute Tribe. In "Facing climate change: The experiences of and impacts on U.S. tribal communities, indigenous people, and native lands and resources." *Climatic Change* 120(3), 585-599. DOI # 10.1007/s10584-013-0737-0
- Cozzetto K., K. Chief, K. Dittmer, M. Brubaker, R. Gough, K. Souza, F. Ettawageshik, S. Wotkyns, S. Opitz-Stapleton, S. Duren, and P. Chavan, 2013. Climate Change Impacts on the Water Resources of American Indians and Alaska Natives in the U.S. *Climatic Change*; DOI# 10.1007/s10584-013-0852-y.
- Maldonado, J., T.M.B. Bennett, K. Chief, P. Cochran, K. Cozetto, B. Gough, M. Hiza Redsteer, K. Lynn, N. Maynard, and G. Voggeser, 2016. Engagement with indigenous peoples and honoring traditional knowledge systems. *Climatic Change*; DOI 10.1007/s10584-015-1535-7
- Chief, K., A. Meadow, and K. Whyte. 2016. Engaging Southwestern Tribes in Sustainable Water Resources Topics and Management. *J. of Water* 8, 350; doi:10.3390/w8080350

Other Significant Products

- Chief, K., T.P.A. Ferré, and B. Nijssen. 2008. Examination of correlation between air permeability and saturated hydraulic conductivity in unburned and burned desert soils. *Soil Sci. Soc. Am. J.* 72:1-9
- Chief, K., M.H. Young, and D. Shafer. 2012. Low-Intensity, fire-induced changes of soil structure, physical and hydraulic properties. *Soil Science Society of America J.* 10.2136/sssaj2011.0072

8. Chen, L., M. Berli, and K. Chief. 2013. Examining Modeling Approaches for a Fire Affected Rainfall-Runoff Process. *J. American Water Resources Association*. 49:851-866. DOI: 10.1111/jawr.12043
9. Shamir, E., S.B. Megdal, C. Carrillo, C.L. Castro, H.I. Chang, K. Chief, F.E. Corkhill, S. Eden, K.P. Georgakakos, K.M. Nelson, and J. Prietto. 2015. Climate change and water resources management in the Upper Santa Cruz River, *Arizona. J. Hydrology*. 521:18-33.
10. Eden, S, S.B. Megdal, E. Shamir, K. Chief, and K.E. Mott Lacroix. 2016. Linking Stakeholder Engagement to Model Development for Groundwater Management. *J. of Water*, 8, 216; doi:10.3390/w8050216

(d) Synergistic Activities

1. Co-Coordinator, Water Resources Technician Training (WRTT) Program for American Indians and Alaska Natives. Bureau of Indian Affairs & The University of Arizona Dept. Hydrology and Water Resources, University of Arizona, Tucson, AZ, 2012-Present.
2. Faculty Instructor and Mentor for Diné College Tribal Colleges and University Program “STEM 2020” Grant that supports a 10-week STEM REU-type summer intern program for 5 years for 15 students per year, and six students part time per academic year as TCUP research interns, 2016-Present.
3. PI and Co-PI, Four national grants and two institutional grants primarily focusing on working with Native American Tribes on the Gold King Mine Spill, collaborative water management strategies, climate change impacts, food safety education and outreach, and Tribal College learning modules on mining and the environment, 2011-Present.
4. Faculty Member, American Indian Science and Engineering Society Lightening the Pathways Program for Native American STEM college students to advance to careers in academia, 2014-Present
5. Faculty Advisor, American Indian Science and Engineering Society, U. of Arizona Chapter, 2011-Present.

Kristin L. Gunckel

Department of Teaching, Learning, and Sociocultural Studies
University of Arizona
Tucson, AZ 85721

Professional Preparation

Colorado State University	Geology	B.S.	1987
University of Montana	Geology	M.S.	1990
University of New Mexico	Secondary Science Teaching	Certification	1998
Michigan State University	Curriculum Teaching & Educational Policy	Ph.D.	2008

Appointments

- 2014-Present Associate Professor of Science Education, Department of Teaching Learning & Sociocultural Studies, University of Arizona
- 2008-2014 Assistant Professor of Science Education, Department of Teaching Learning & Sociocultural Studies, University of Arizona

Products

Related Products

- Gunckel, K. L., Covitt, B. A., & Salinas, I. (2018). Learning progressions as tools for supporting teacher content knowledge and pedagogical content knowledge about water in environmental systems. *Journal of Research in Science Teaching*. (Posted online ahead of publication).
- Gunckel, K. L., & Tolbert, S. (2018). The imperative to move toward a dimension of care in engineering education. *Journal of Research in Science Teaching*. (Posted online ahead of publication).
- Gunckel, K. L., & Wood, M. B. (2016). The principle–practical discourse edge: Elementary preservice and mentor teachers working together on co-learning tasks. *Science Education*, 100(1), 96-121.
- Gunckel, K. L. (2013). Fulfilling multiple obligations: Preservice elementary teachers' use of an instructional model while learning to plan and teach science. *Science Education*, 97(1), 139-162.
- Gunckel, K. L., Covitt, B. A., Salinas, I., & Anderson, C. W. (2012). A Learning Progression for Water in Socio-Ecological Systems. *Journal of Research in Science Teaching*.

Other Significant Products

- Covitt, B. A., Gunckel, K. L., Caplan, B., & Syswerda, S. (2018). Teachers' use of learning progression-based formative assessment in water instruction. *Applied Measurement in Education*, 31(2), 128-142.
- Caplan, B., Gunckel, K. L., Warnock, A., & Cano, A. (2013). Investigating water pathways in schoolyards. *Green Teacher*, 98 (Winter), 28-33.
- Gunckel, K. L. (2011). Mediators of a preservice teacher's use of the Inquiry-Application Instructional Model. *Journal of Science Teacher Education*, 22(1), 79-100.

- Gunckel, K. L. (2010). Using experiences, patterns, and explanations to make school science more like scientists' science. *Science and Children*, 48(1), 46-49.
- Schwarz, C., Gunckel, K. L., Smith, E. L., Bae, M. J., Covitt, B., Enfield, M., & Tsurusaki, B.K. (2008). Helping elementary preservice teachers learn to use science curriculum materials for effective science teaching. *Science Education*, 92(2), 345-377.

Synergistic Activities

- PI, University of Arizona Office of Student Engagement *Arizona Indigenous Communities: Environment, Education, and Science* (2017)
- Co-PI, National Science Foundation *Comp Hydro: Integrating Data Computation and Visualization to Build Model-Based Water Literacy*, STEM+C <http://ibis-live1.nrel.colostate.edu/CompHydro/> (2015-2018)
- Senior Personnel, National Science Foundation DRK-12 Grant, *Beyond Bridging: Co-education of Preservice and Inservice Teachers in Science and Mathematics* (2010-2014)
- Co-PI, National Science Foundation DRK-12 Grant, *Tools for Reasoning for Understanding Water Systems*, <http://www.umt.edu/watertools/> (2010-2013)
- Co-developer, *School Water Budget*, water learning progression-based curriculum materials for middle and high school students. Mathematics & Science Targeted Partnership: Pathways to Environmental Science Literacy. <http://www.cns-eoc.colostate.edu/msp-nrel.html> (2012)

Collaborators (19)

Charles W. "Andy" Anderson, Michigan State University; Alan Berkowitz, Cary Institute; Aubrey Cano, University of California, Santa Barbara; Martha Canipe, University of Northern Arizona; Bess Caplan, Baltimore Ecosystem Study; Beth A. Covitt, University of Montana; Walter Doyle, University of Arizona; Jennifer Doherty, University of Washington; Karen Draney, University of California, Berkeley; Bruce Johnson, University of Arizona; John C. Moore, Colorado State University; Ivan Salinas, Universidad de Chile, Santiago, Chile; Edward L. Smith, Michigan State University; Sara Syswerda, Battle Creek, MI; Sara E. Tolbert, University of Arizona; Erin E. Turner, University of Arizona; Andrew Warnock, Colorado State University; Ali Whitmer, George Washington University; Marcy B. Wood, University of Arizona

Graduate Advisor (1)

Edward L. Smith, Michigan State University

Thesis Advisor (4)

Ivan Salinas, Universidad de Chile, Santiago, Chile; Elsa Schaub, Seattle, Washington; Martha Canipe, Northern Arizona University; Phillip Stokes, Penn-Dixie Fossil Park, Erie, New York

Donna L. Jurich

Project Role: Associated Faculty

Current Position

Director of Elementary and Early Childhood Education
College of Education, University of Arizona

Education

2000, Ph.D., Education. University of Arizona (Teaching and Teacher Education)
1978, M.A., English. San Francisco State University (Teaching English as a Second Language)
1975, B.A., English. San Francisco State University

Selected Publications

- Clift, R. T., DaSilva Iddings C, Jurich, D., Reyes, I., & Short, K. (in press). A Programmatic Focus on Engaging Families, Communities and Children: Institutionalizing Assets-Based Pedagogies. To appear in C. Craig & L. Orland-Barak (Eds.), *Advances in Research on Teaching* (Vol. 26), *International Teacher Education*. Bingley, UK: Emerald Books.
- Jurich, D. & Vandergriff, J. (2008). Culturally appropriate and placed based practices: Pedagogy for all students and teachers. *ACI Center Connections*.
- Evans, C. A., Elizabeth Arnot-Hopffer, Donna Jurich. (2005). Making ends meet: Bringing bilingual education and mainstream education students together in preservice teacher education. *Journal of Equity and Excellence in Education*, 38(1), pp. 75-88.

Published Conference Proceedings

- Jurich, D., McMullen, D., Pardieck, S., & Vandergriff, J. (2006). Using digital primary sources in the classroom. In *What we know: Taking/Connecting the research into/to the classroom* proceedings of the Midwest Association of Teacher Educators Annual Spring Conference, Urbana, IL.
- Vandergriff, J. & Jurich, D. (2004). What standards leave behind. In *No child left behind: Political and practical implications for educators* proceedings of the Midwest Association of Teacher Educators Annual Spring Conference, Urbana, IL.

Grants and Contracts

- CREATE (Communities as Resources in Early Childhood Teacher Education) Co-PI with Drs. Renee Clift, Chris Iddings, Kathy Short, and Iliana Reyes, 2010-2015.
- Developing and Establishing a Non-Traditional Early Childhood Master's Degree Program at the University of Arizona's College of Education. Sub-contract of the Great Expectations for Teachers, Children, and Families (Great Expectations) United Way Grant from the Central Pima Regional Partnership Council of First Things First, 2012-2015. Co-author. Principal Investigator: Dr. Sonya Gaches.

Early Childhood Masters Degree – A Community of Practice in the Professional Development Alliance. Sub-contract of the Professional Development Alliance Grant awarded to United Way from the Central Pima Regional Partnership Council of First Things First. 2009-2012.

Previous Employment

Director of Elementary and Early Childhood Education, College of Education, University of Arizona. 8/2008 to present.

Associate Professor, Knox College, Galesburg Illinois. 9/04 to 8/2008.

Technology Instructor, Science Summer Camp Atsa` Biya`a`zh Community School, Shiprock, New Mexico. 6/01-7/01 & 6/03-7/03.

Presentations

Clift, R. & Jurich, D. (2015). Reforming early childhood teacher education and changing literacy ideologies through dialogical experiences. 2015 Annual Conference of the Association of Teacher Educators, Phoenix, AZ.

Koestler, C. & Jurich, D. (2015) Creating equitable spaces for LGBTQQ people: Teacher educators' responsibilities and roles in advocating for all. 2015 Annual Conference of the Association of Teacher Educators, Phoenix, AZ.

Jurich, D. Hogan, D.N. (2015). Learning presentations – Presentations that teach and transform. iStem 4 ECE: Pedagogy & Presentation Workshop, January 24, 2015, Pima Community College, Desert Vista Campus.

Jurich, D., Hill, D., & Zapien, R. (2015). New roles and relationships in preparing early childhood educators. Imagine Possibilities for Early Childhood Teacher Education, January 16 & 17, 2015, College of Education, University of Arizona.

Jurich, D. & Longoria, B. (February 12, 2013). Once is not enough: Preparing traditional teacher education students to work with families & communities. Paper accepted for 93rd Annual Conference of the Association of Teacher Educators, Atlanta, GA.

Jurich, D. & Clift, R. (February 14, 2012). Moving from “learning about” to “learning with and from” in early childhood teacher preparation. Paper presented at 92nd Annual Conference of the Association of Teacher Educators, San Antonio, TX.

Professional memberships

National Association for the Education of Young Children & Southern Arizona Association for the Education of Young Children, Board Member, 2009 to present.

Association of Teacher Educators, 2001 to present.

Illinois Association of Teacher Educators, 2000 to present.

Phi Delta Kappan, 2001 to present.

American Educational Research Association, 1991-present.

Association for Supervision and Curriculum Development, 1996-present.

SARA M. KNEPPER

520-465-1755 • sme@email.arizona.edu

EDUCATION

The University of Arizona, Tucson, AZ May 2011
Masters of Arts in Educational Psychology Cumulative GPA: 4.00
Thesis: Pre-Teaching Concerns

The Pennsylvania State University, University Park, PA May 2007
Bachelor of Science in Earth Science Cumulative GPA: 3.74 with Distinction
Secondary Education Teaching Certification in Earth and Space Science

EXPERIENCE

ACADEMIC ADVISING COORDINATOR, College of Education (Feb. 2016-present)
Supervisor Dr. Renee Clift, Professor and Assoc. Dean Univ. of Arizona, Tucson, AZ

- Leadership: Collaborate with college faculty at departmental meetings; contribute to programmatic decisions; manage curriculum updates and general education articulation; represent the college on university-wide committees such as University Academic Advising Council (UAAC), Professional Preparation Programs, and Career Council; representative to Disability and Psychoeducational Studies department; liaison to program coordinators; college co-representative to the statewide Articulation Task Force
- Advising: Senior-level academic advising role; advise specialized groups of students such as for the Indigenous Teacher Education Project; monitor and train advisors; assist advising team with complex situations; deescalate challenging student situations; oversee college professional admissions; update policies and procedures in the student services area; advise the Future Teacher's Club; coordinate college-wide events such as the annual Honors Convocation; assist Certification Officer
- Instruction: Curriculum and staffing coordinator for TLS 197: Success Course

SENIOR ACADEMIC ADVISOR, College of Education (Jan. 2013-Feb. 2016)
Supervisor Dr. Renee Clift, Professor and Assoc. Dean Univ. of Arizona, Tucson, AZ

- Leadership: Established and advised COE Student Ambassador club and Peer Mentorships; Orientation Coordinator for college; representative to Teaching, Learning, and Sociocultural Studies department; representative to external committees and working groups (Academic Advising UAccess Student Working Group, Articulation Task Force, Honors College, and Leadership Programs)
- Advising: Advised undergraduates; assisted with and planned student services events; updated college website; assisted with recruitment events and initiatives
- Instruction: Lecturer, discussion leader, and curriculum contributor for TLS 197: Success Course

ACADEMIC ADVISOR, Colleges of Letters, Arts, and Science Academic Advising Center (July 2011-Jan. 2013)
Supervisor Leticia Soto-Delgadillo, Director Univ. of Arizona, Tucson, AZ

- Leadership: Chair of Communication, Social, Meet Your Major Fair, and Homecoming Committees; CLAS Student Ambassador Advisor; supervised new academic advisor
- Advising: Advised undergraduates, including major exploration; created departmental materials and presentations; participated in professional development; assisted with convocation, student services events, and freshman orientation
- Instruction: Revised curriculum for and taught online courses (LASC 197P: Major Exploration Workshop, and LASC 197M: Success Starts Here)

AWARDS & HONORS

- University of Arizona Outstanding Emerging Professional Advisor Award Winner, 2014
- National Academic Advising Association (NACADA) Outstanding New Advisor Certificate of Merit Award Winner, 2014

PROFESSIONAL SERVICE

- Advisor Training Team Committee Member (June 2013-present)
- Bicycle and Pedestrian Advisory Committee (2013-2014 & 2016-2017)
- Appointed Professionals Advisory Council (APAC) Member (May 2012-present)
 - Roles served: Chair, Vice Chair, Student Engagement Committee Rep., Membership Chair
- National Academic Advising Association (NACADA) Member (July 2010-present)
 - Roles served: Presenter at Regional Conferences, Proposal Reviewer
- University of Arizona Faculty/Staff Choir (Fall 2009-present)
 - Roles served: President, Vice President, Communications Chair
- UA Career Council (Jan. 2016-May 2017)
- UA Scholarship Appeals Committee Member (Apr. 2012-Apr. 2016)
- University Professional Advising Council (UPAC) Co-Chair (Jan. 2012-Jan. 2014)

PUBLICATIONS & PRESENTATIONS

Ball, C. & Knepper, S. (2017, January). *Communication and Interpersonal Skills: Building the Advising Relationship*. Presented at New Advisor Orientation, University of Arizona, Tucson, AZ.

Burton, J., Catts, R., Soto-Delgadillo, L., Wieland, S. & Yerger, S. (2015, March). *Making Bo(u)lder Connections with Advisor Training: A Cross-Campus, Community-Building Professional Development Program*. Presented at the Region 10 Conference of the National Academic Advising Association, Boulder, CO.

Burton, J. & Yerger, S. (2015, March). *The UP'S & Downs of Academic Advising: Using Creative and Proven Methods to Avoid Burnout*. Presented at the Region 10 Conference of the National Academic Advising Association, Boulder, CO.

Gin Morgan, J. & Yerger, S. (2012, December). *Thriving in Advising by Utilizing Student Ambassadors*. Presented at Thriving in Advising: A Symposium for Advisor Development, Tucson, AZ.

Yerger, S. (2014, May). *How Can I Afford College?! A Financial Aid Resource for Advisors*. Presented at the Region 10 Conference of the National Academic Advising Association, Jackson Hole, WY.

Yerger, S. (2013, May). *Supporting Advising by Utilizing Student Ambassadors*. Presented at the Region 10 Conference of the National Academic Advising Association, Tucson, AZ.

Yerger, S. (2013). *Pre-Teaching Concerns*. Saarbrücken, Germany: Lambert Academic Publishing.

Yerger, S. (2012, March). *Helping Students Traverse the Great Unknown: Anchoring a Perfect Major Fair*. Presented at the Region 10 Conference of the National Academic Advising Association, Provo, UT.

Yerger, S. (2012, March). *When Morale is On the Rocks, Reach New Heights with an Ascendant Retreat!* Presented at the Region 10 Conference of the National Academic Advising Association, Provo, UT.

JAVIER O. LOPEZ

(b)(6)

javoc@email.arizona.edu

2017-Present University of Arizona
Teachers in Industry Program
Director

- Develop and implement strategic plan for TiI program
- Cultivate relationships with district and school leaders, community leaders, business leaders and key stakeholders throughout Arizona
- Streamline systems processes e.g., paper application to online
- Implement Graduate SLATE CRM to monitor prospective graduate students pipeline
- Program development and staff development
- Represent Teachers in Industry program stakeholder meetings, conferences, intergovernmental/chamber of commerce forums
- Advise prospective student candidates to discuss program details and options

2013-2017 University of Arizona South
M.Ed. Secondary Education Program
Recruitment and Outreach Coordinator

- Cultivate and manage relationships with district partners, school leaders, community leaders, and key stakeholders throughout Southern Arizona to increase program visibility and enhance M.Ed. student enrollment
- Develop and implement recruitment strategic plan for the M.Ed. program
- Represent M.Ed. program and UA South at school board meetings, district team meetings, intergovernmental/chamber of commerce forums
- Coordinate with HR directors and school administrators to help secure teaching positions for students
- Participate in National Science Foundation budget planning meetings with M.Ed. Team and external evaluator
- Meet with prospective student candidates to discuss M.Ed. program details and options
- Utilize ACT Software to track student pipeline from initial point of contact through acceptance and beyond

Achievements

- Increased student enrollment from 12 in 2013 to 70 by the year 2016
- Expanded M.Ed. program into Tucson and Phoenix, Arizona
- New district partners include Sunnyside Unified School District; Tucson Unified School District; Cartwright Unified School District, Phoenix)

2011-2013 Milwaukee Academy of Science
Director of Development
Milwaukee, WI

- Strategic planning for marketing communications, student recruitment, and fund development
- Cultivated and managed relationships with board members, prospective donors, business leaders and community stakeholders
- Managed marketing budget and donor activity development utilizing Raiser's Edge program

Achievements

- Raised \$115,000 for capital operating expenditures (compared to prior year of less than \$5K)
- Launched new school district website and social media to enhance brand awareness

2007-2008 Medline Industries
 Medical Sales Representative
 Tucson, AZ

- Developed a sales territory in the long-term care industry covering the state of Arizona and Southeastern California
- Developing customer base by continuously prospecting, qualifying, and identifying new accounts
- Consultative systems approach that focuses on programs rather than products to address specific areas of need that reduce costs and increase profitability
- Utilized Salesforce CRM to track customer data such as customer progression through the sales funnel

Achievements

- Exceeded 2007 sales plan by 107%
- Awarded the 100% Club Award at Medline's National Sales Conference in Colorado Springs

2006-2007 Videojet Industries
 Industrial Sales Engineer
 Tucson, AZ

- Built customer base in manufacturing industry in West Texas, New Mexico, Arizona, Southeastern California and Mexico
- Building customer base utilizing a continuous prospecting system to qualify and identify new accounts
- Utilized consultative approach to developing customer relations
- Planned, managed and reported on expense budget to regional manager
- Planned and presented yearly sales forecast to entire sales division at Divisional Meetings in Anaheim, California

CURRICULUM VITAE

Sheilah E. Nicholas

Language, Reading and Culture Program
Department of Teaching, Learning and Sociocultural Studies
College of Education, University of Arizona
sheilahn@email.arizona.edu

(b)(6)

CHRONOLOGY OF EDUCATION

- May 2008 Ph.D. American Indian Studies Program
University of Arizona
- Dec. 1991 M.A. American Indian Studies Program
University of Arizona
- May 1973 B.A. Special Education
University of Arizona
- Dissertation: Becoming “Fully” Hopi: The Role of the Hopi Language in the Lives of
Contemporary Hopi Youth—A Hopi Case Study of Language Shift and Vitality
Co-chairs: Teresa L. McCarty, Ph.D., Emory Sekaquaptewa, JD
- Masters Thesis: Hopi Education: A Look at Its History, Past, and Future
Chair: Teresa L. McCarty, Ph.D.

CHRONOLOGY OF EMPLOYMENT

- 2008-present *Associate Professor*, Language, Reading and Culture Program.
- 2017 *Courtesy Appointment*, Department of Linguistics, University of Arizona
- 2013-present *Adjunct Faculty*, Ka Haka 'Ula Ke'elikōlani, College of Hawaiian Language, Hilo, Hawaii.
Affiliate Faculty
- 2009-present American Indian Studies Program.
- 2008-present Second Language Acquisition and Teaching Program.
- Faculty Instructor*
- 2016, 2015 American Indian Language Development Institute (AILDI)
- 2014, 2012
- 2008-2010 Hopilavayi Summer Institute, Hopi Reservation, Arizona

HONORS AND AWARDS

- 2017 Invited Welcome Speaker, Spring Convocation, University of Arizona
- 2017 Erasmus Circle Fellow, College of Education
- 2011 Invited Welcome Speaker, Spring Convocation, University of Arizona
- 2010-2011 Outstanding Faculty Service/Outreach Award, College of Education
- 2007 Honorable Mention, Outstanding Dissertation Award, Council on Anthropology and Education,
American Anthropological Association

PROFESSIONAL AFFILIATIONS

- 2002-present American Anthropological Association
- 2005-present, Council on Anthropology and Education, American Anthropological Association
- 2016-present Native American and Indigenous Studies Association
- 2013, 2010, 2008

Editorial Board Membership

- 2010-present *Journal of American Indian Education*
 2009-present *Anthropology and Education Quarterly*
 2004-2007 *Indigenous Language Institute, Awakening Our Languages Handbook Series*

PUBLICATIONS/CREATIVE ACTIVITIES**Scholarly Books**

- Under review McCarty, T. L., **Nicholas, S. E.** and Wigglesworth, G. (Eds.). *A World of Indigenous Languages—Politics, Pedagogies, and Prospects for Language Revitalization and Maintenance*. Multilingual Matters.
- 2013 Wyman, L., McCarty, T., & **Nicholas, S.** (Eds.), *Indigenous youth and bi/multilingualism: Language identity, ideology, and practice in dynamic cultural worlds*. New York and London: Routledge.

Chapters in Scholarly Books

- Under review **Nicholas, S. E.** Mediating Tradition and Modernity: Hopi Cultural and Linguistic Identity Construction in Contemporary Linguistic Ecologies. In McCarty, T. L., Nicholas, S. E., and Wigglesworth, G. (Eds.). *A World of Indigenous Languages—Politics, Pedagogies, and Prospects for Language Revitalization and Maintenance*. Multilingual Matters.
- Under review **Nicholas, S. E.**, Duwahoyeoma, B., and Curtis, A. *Hopilavayit aw Naa'aya'tiwqam*, Those who have chosen to attend to the Hopi language: Storying “the making of an Indigenous Language Teacher.” In Garcia, J., Shirley, V., and Kulago, H. (Eds.). *Indigenous Education: Transformative Theories and Possibilities in Indigenous Communities*. Information Age Publishing.
- 2017 **Nicholas, S. E.** Practicing Being and Living Hopi: Language and Cultural Practices of Contemporary Hopi Youth. In Wigglesworth, G. and Simpson, J. (Eds.). *Language Practices of Indigenous Children*. Palgrave Studies in Minority Languages and Communities.
- 2016 Combs, M. C. and **Nicholas, S. E.** Language, Voice and Empowerment Frameworks. In Hornberger, N. (Ed.). *Honoring Richard Ruiz and his Work on Language Planning and Bilingual Education*. Bristol: Multilingual Matters.
- 2015 **Nicholas, S. E.** & McCarty, T. L. The Continuum of Literacy in Native American Classrooms. In Reyhner, J. (Ed.). *Teaching Indigenous students*. Norman: University of Oklahoma Press.

Refereed Journal Articles

- 2018 McCarty, T. L. and **Nicholas, S. E.** Hear Our Languages, Hear Our Voices: Stories of Resilience and Justice in Indigenous Language Reclamation. In Blackhawk, N., Brayboy, B. M. J., Deloria, P. J., Ghiglione, L., Lomawaima, K. T., Medin, D. & Trahan, M. (Guest Eds.). 2018 Special Issue: “The American Indian: Obstacles and Opportunities.” *Daedalus*.
- In Press Anthony-Stevens, V., Stevens, P. & **Nicholas, S.E.** Raiding and Alliances: Indigenous Educational Sovereignty as Social Justice. Dupont, M. D. and Gardezi, M. (Eds.). Special Issue: Everyday Practices of Social Justice. *Journal of Critical Thought and Praxis*.
- 2016 **Nicholas, S. E.** (2016). You remain present. LETTERS: In Celebration of the Life of Richard Ruiz. In Fránquiz, M. E., Escamilla, K., and Valdez, V. E. (Guest Eds.). Special Issue: Richard Ruiz and Research on Language Planning—30 Years Plus. *Bilingual Research Journal*, 39(3-4).
- 2016 **Nicholas, S. E.** Hopi Youth Wanting in Tradition: Seeking the “Missing Piece”—The Heritage Language. *Native Studies Review Journal*. Indigenous People’s Health & Research Centre. University of Saskatchewan, Saskatoon

Stacey Inez Oberly, Ph.D.

(b)(6)

EDUCATION

- 2008 PH.D. LINGUISTICS. University of Arizona: Tucson AZ.
Advisor: Dr. Jane Hill. A Phonetic Analysis of Southern Ute with a Discussion of Language Policies and Revitalization on the Southern Ute Reservation.
- 2004 MASTER OF ARTS NATIVE AMERICAN LINGUISTICS. University of Arizona: Tucson AZ.
Advisor: Dr. Mary Willie. A Preliminary Analysis of Southern Ute Noun Phrases.
- 2001 MONTESSORI EARLY-ELEMENTARY TEACHING CERTIFICATE. Montessori Education Center of the Rockies: Ignacio CO.
- 1999 MASTER OF ARTS BILINGUAL/MULTICULTURAL EDUCATION. College of Santa Fe: Santa Fe NM. At-Risk Youth Focus and English-as-a-Second Language Teaching Endorsement.
- 1993 BA SPANISH AND A COLORADO ELEMENTARY TEACHING CERTIFICATE. Fort Lewis College: Durango CO.

ACADEMIC APPOINTMENTS

- 2016-Present COORDINATOR OF UTE LANGUAGE AND CULTURE. Develop and teach Ute language and cultural curriculum to students three-eleven years old, teachers and community members in a private, tribally owned Montessori academy. I also document Ute speakers. Southern Ute Indian Academy: Ignacio CO.
- 2017-Present HIGH SCHOOL UTE LANGUAGE TEACHER. Develop and teach Ute language and cultural curriculum to high school students. Ignacio Public High School: Ignacio CO.
- 2005-18 INSTRUCTOR, AMERICAN INDIAN LANGUAGE DEVELOPMENT INSTITUTE. June. University of Arizona: Tucson AZ.
- 2015-2016 UTE LANGUAGE TEACHER. Taught Ute language to students three-eleven years old in a private, tribally owned Montessori academy. I also taught Ute language, culture, traditions and arts to our teaching staff and community members. Southern Ute Indian Academy: Ignacio CO.
- 2012-2015 ASSISTANT PROFESSOR, LINGUISTICS. University of Arizona: Tucson AZ.
- 2012-13 NEH DOCUMENTING ENDANGERED LANGUAGES FELLOWSHIP. July-July. University of Arizona.

2009-11 JOINT APPOINTMENT, ASSISTANT PROFESSOR OF AMERICAN INDIAN STUDIES AND LINGUISTICS. University of Arizona: Tucson AZ.

2008-09 VISITING PROFESSOR, AMERICAN INDIAN STUDIES AND LINGUISTICS . University of Arizona: Tucson AZ.

REFEREED JOURNAL ARTICLES, PUBLISHED OR ACCEPTED IN FINAL FORM

Oberly, S. 2015. V. 9: 324-343. Southern Ute Grassroots Language Revitalization. Language Documentation and Conservation. Thieberger, Nicholas (ed).

Oberly, S. & Kharlamov, V. 2015. 72(1) Southern Ute Grassroots Language Revitalization 1-19. The Phonetic Realization of Devoiced Vowels in the Southern Ute Language. *Phonetica: International Journal of Phonetic Science*. Best, C. T. (ed).

NON-REFERRED JOURNAL ARTICLES/CHAPTERS, PUBLISHED

Oberly, S. 2010. 50 Things to Do to Save Your Tribal Language. *Red Ink*. 16:1:Fall. Ramirez, J. Q. (ed.). Tucson, AZ: University of Arizona.

Oberly, S. 2010. Using a Native Language Reference Grammar as a Language Learning Tool. *American Indian Language Development Institute: Thirty Year Tradition of Speaking from Our Heart*. Galla, C.K., Oberly, S., Romero, G. L., Sam, M. and Zepeda, O. (eds.) Tucson, AZ: American Indian Language Development Institute.

Oberly, S. 2010. Saved by AILDI. *American Indian Language Institute: Thirty Year Tradition of Speaking from Our Heart*. Galla, C.K., Oberly, S., Romero, G. L., Sam, M. and Zepeda, O. (eds.) Tucson, AZ: American Indian Language Development Institute.

GRANTS AND CONTRACTS

FEDERAL

2015 *Documenting Native Language Vitality: Arizona*. PI. Documenting Endangered Language Grant. National Science Foundation. \$184,147. Rejected.

2012 *Documenting Southern Ute: Naturally-occurring Speech and Personal Narratives*. PI. Documenting Endangered Language Fellowship. National Science Foundation and National Endowment for Humanities. \$50,400. 100%.

2011 *Creating Grass-root Digital Language Resources Planning Workshop*. Co-PI. National Science Foundation Documenting Endangered Languages Planning Grant. \$4,891. 50%.

STATE

2009 *Anyplace Access to Language Maintenance and Promotion for Endangered Language Communities*. Co-PI. Technology Research Initiative Fund Grant. \$23,305. 10%.

Django Paris

James A. & Cherry A. Banks Professor of Multicultural Education
Associate Professor of Teaching, Learning, and Curriculum
Director, Banks Center for Educational Justice
College of Education, University of Washington
M215 Miller Hall, Box 353600, Seattle, WA 98195
dparis@uw.edu

Education

Stanford University

Doctor of Philosophy, Education, English Education & Literacy Studies,
Minor in Applied Linguistics (2008)

Stanford University

Master of Arts, Education, Curriculum Studies & Teacher Education (2004)

University of California, Berkeley

Bachelor of Arts, English (1996)

Areas of Interest: Languages, Literacies, and Lifeways among Black, Indigenous, Latinx, Asian and Pacific Islander youth in the Context of Social Change and Revitalization; Culturally Sustaining Pedagogies; Humanizing Research Methodologies

Academic Appointments

James A. & Cherry A. Banks Professor of Multicultural Education, College of Education, University of Washington (2018-Present)

Associate Professor of Teaching, Learning, and Curriculum, College of Education, University of Washington (2018-Present)

Incoming Director, Banks Center for Educational Justice, (2018-Present)

Associate Professor of Language and Literacy, Department of Teacher Education, Michigan State University (2014-2017)

Associate Director, Bread Loaf School of English, Middlebury College (2011-2014)

Assistant Professor of Language and Literacy, Department of Teacher Education, Michigan State University (2011-2014)

Assistant Professor of English, English Education Program, Department of English, Arizona State University (2008-2011)

Faculty, Bread Loaf School of English, Middlebury College (Summers 2010, 2015)

Publications

Books

Paris, D. (2011; Paperback 2013). *Language across Difference: Ethnicity, Communication, and Youth Identities in Changing Urban Schools*. Cambridge, UK: Cambridge University Press.

Paris, D. & Winn, M. T. (Eds.) (2014). *Humanizing Research: Decolonizing Qualitative Inquiry with Youth and Communities*. Thousand Oaks, California: SAGE Publications.

Paris, D & Alim, H.S. (Eds.) (2017). *Culturally Sustaining Pedagogies: Teaching and Learning for Justice in a Changing World*. New York: Teachers College Press.

Journals

Baker-Bell, A., Paris, D. & Jackson, D. (2018). Learning Black Language Matters: Humanizing Research as Culturally Sustaining Pedagogy. *International Review of Qualitative Research*, 10 (4), pp. 360-377.

Alim, H.S., Baglieri, S., Rose, D., Ladson-Billings, G., Paris, D. & Valentine, J. M. (2017). Responding to “Cross-Pollinating Culturally Sustaining Pedagogy and Universal Design for Learning: Toward an Inclusive Pedagogy That Accounts for Dis/Ability.” *Harvard Educational Review*, 87 (1), pp. 4-25.

Paris, D. (2015). The Right to Culturally Sustaining Language Education for the New American Mainstream: An Introduction. *International Multilingual Research Journal*, 9 (4), pp. 221-226.

MARGARET ROSARIA SHAFER

University of Arizona
College of Education
1430 East Second Street
Tucson, Arizona 85721

Phone: 520.621.5908
Email: margaretshafer@email.arizona.edu

EDUCATION

M.A. University of Arizona, Teacher and Teacher Education, 1996
B.S. E Wagner College, New York 1980

PROFESSIONAL AND ACADEMIC ESSENTIALS

Superintendent Certificate Arizona Department of Education, 2008
Principal Certificate Arizona Department of Education, 2000
Mathematics Specialist, K-8 Arizona Department of Education, 1996

ADMINISTRATIVE LEADERSHIP AND EXPERIENCE

Director of Field Experiences
Department of Teaching, Learning & Sociocultural Studies
University of Arizona
Tucson, Arizona
2013-present

Assistant Superintendent K-8 School Leadership

Tucson Unified School District
Tucson, Arizona
2009- 2013

Chief Academic Officer

Tucson Unified School District
Tucson, Arizona
2008-2009

Principal Supervisor

Tucson Unified School District
Tucson, Arizona
2006-2008

Principal Coach

Arizona Department of Education in Conjunction with Wallace Foundation
2005-2006

Principal

Robins Elementary School
Tucson Unified School District
2000-2006

Sample Presentations to Administrators/Teachers

Shafer, M.R., Cohen, R. & Ryan, D. (2018) *Supervising Practitioners Colloquium*, Mentor Teacher Training, Tucson, AZ.

Shafer, M. R. (2016) Co-teaching, District Wide Professional Development, Toltec School District, Eloy, AZ.

Shafer, M.R. & Anhalt, (2015) *Mentoring the Next Generation of Teachers*, Mathematics Educator Appreciation Day Conference, Tucson, AZ

Shafer, Margaret R. (2013) *Observing Classroom Instruction Using a Depth of Knowledge Lens*; Tucson Unified School District Administrator Workshop, Tucson, AZ

BIOGRAPHICAL SKETCH

Blaine E. Smith, Ph.D.

(a) Professional Preparation

Colorado State University	Technical Journalism	B.A.	2003
Colorado State University	English Education	M.A.	2008
Vanderbilt University	Learning, Teaching & Diversity	Ph.D.	2014

(b) Appointments

- 2017-present *Assistant Professor* of New Literacies and Bi/Multilingual Immigrant Learners, Department of Teaching, Learning, and Sociocultural Studies, University of Arizona
- 2014-2017 *Assistant Professor* of Language and Literacy Learning in Multilingual Settings, Department of Teaching and Learning, University of Miami
- 2016-2017 *Lead Qualitative Researcher* for STATS-U at the Dunspaugh-Dalton Community and Educational Well-Being Research Center, School of Education & Human Development, University of Miami
- 2008-2014 Peabody College of Education, Vanderbilt University
- *Research Assistant*, Learning Through Practice School, PI: Barbara Stengel, 2013-2014
 - *Project Director*, Digital Writer's Workshop, PI: Bridget Dalton, 2011-2013
 - *Research Assistant*, Scaffolding Understanding through Research on Games for Education (SURGE), PI: Douglas Clark, 2011-2012
 - *Instructional Quality Coder*, Middle School Mathematics and the Institutional Setting of Teaching (MIST), PI: Paul Cobb, Summers 2009-2013

(c) Products

Products most closely related to the proposed project

Smith, B. E., Pacheco, M. B., & de Almeida, C. R. (2017). Multimodal codemeshing: Bilingual adolescents' processes composing across modes and languages. *Journal of Second Language Writing, 36*, 6-22.

Smith, B. E. & Shen, J. (2017). Scaffolding digital literacies for disciplinary learning: Adolescents collaboratively composing multimodal science fictions. *Journal of Adolescent & Adult Literacy, 61*, 85-90.

Smith, B. E. (2016). Composing across modes: A comparative analysis of adolescents' multimodal composing processes. *Learning, Media & Technology*, Advance online version, DOI:10.1080/17439884.2016.1182924.

Smith, B. E., Kiili, C., & Kauppinen, M. (2016). Transmediating argumentation: Students composing across written essays and digital videos in higher education. *Computers & Education, 102*, 138-151.

Pacheco, M. B & **Smith, B. E.** (2015). Across languages, modes, and identities: Bilingual adolescents' multimodal codemeshing in the literacy classroom. *Bilingual Research Journal, 38*(3), 292-312.

Other significant products

Hämäläinen, R., Kiili, C., & **Smith, B. E.** (2016). Orchestrating 21st century learning: A perspective on students' voice. *British Journal of Educational Technology*, Advance online version, DOI: 10.1111/bjet.12533.

Smith, B. E. & Dalton, B. (2016). "Seeing it from a different light": Adolescents' video reflections about their multimodal compositions. *Journal of Adolescent & Adult Literacy, 59*(6), 719-729.

Dalton, B., Robinson, K., Lavvorn, J., **Smith, B. E.**, Alvey, T., Mo, E., Uccelli, P. & Proctor, C. P. (2015). Fifth-grade students' digital retellings and the Common Core: Modal use and design intentionality. *The Elementary School Journal, 115*(4), 548-569.

Van Eaton, G., Clark, D. B., & **Smith, B. E.** (2015). Patterns of physics reasoning in face-to-face and online forum collaboration around a digital game. *International Journal of Education in Mathematics, Science, and Technology, 3*(1), 1-13.

Smith, B. E. (2014). Beyond words: A review of research on adolescents and multimodal composition. In R. E. Ferdig & K. E. Pytash (Eds.). *Exploring Multimodal Composition and Digital Writing* (pp. 1-19). Hershey, PA: IGI Global.

(d) Synergistic Activities

- Co-developed a curriculum that integrates STEM learning and digital literacies for culturally and linguistically diverse middle schoolers. Students collaboratively create multimodal science fictions that engage with issues of climate change.
- Co-developed a Scaffolded Digital Writer's Workshop model for urban middle and high school students. This model supports students in seeing themselves as "designers" and understanding how multiple modes (e.g., text, music, visuals, animation) can be used for communication, as well as developing a supportive and collaborative class community.
- Developed a new method (multimodal composing timescapes) to analyze and display students' use of multiple modes while creating digital products.
- Developed technology-enhanced assessments for English curriculum (e.g., hypertext literary analysis, podcasts, informational website). Each digital multimodal project supported urban high school students in responding to and analyzing literature.
- Assisted in developing an educational video game designed to teach formal physics.

SARA TOLBERT

Assistant Professor of Science Education
Department of Teaching, Learning, and Sociocultural Studies
1430 E. Second Street, Tucson, AZ 85721 saratolbert@email.arizona.edu
(520) 621-9374

AREAS OF SPECIALIZATION/RESEARCH INTERESTS

Equity/ Access in Science Education, Social Justice Education, Teacher Education, Professional Development, Literacy and Language Development in Science, Cultural Studies of Science Education, Indigenous Science Education, Bilingualism/Biliteracy, Critical/Decolonial Theories

EDUCATION

Ph.D., Education. University of California, Santa Cruz, 2011.
M.Ed., and T-5 Teaching Credential, Middle School Education, Science (primary concentration), Social Studies (secondary concentration). The University of Georgia, 2006.
B.A., Environmental Studies. University of Colorado, Boulder, 1996.

SELECTED GRANTS & AWARDS

2015	National Academy of Education/Spencer Post-doctoral Fellowship
2015	University of Arizona College of Education Erasmus Scholar
2015	Bright Spots for Bright Spots for Hispanic Education, White House Initiative on Educational Excellence for Hispanics. Teacher Education for English Learners (TEEL).
2013-2017	Secondary Science Teaching with English Language & Literacy Acquisition (SSTELLA), National Science Foundation Discovery Research K-12, <i>co-Principal Investigator</i> . Amount awarded: \$2.9 million.
2014-2015	Community Engagement and Youth Leadership through Science Education (CEYLSE), Smith Junior Faculty Grants Program, <i>Principal Investigator</i> . Amount awarded: \$5,000.
2012-2013	Investigating the science teaching practices of Te Kotahitanga teachers. <i>Principal Investigator</i> , UA VPOR Faculty Seed Grants Program, <i>Principal Investigator</i> . Amount awarded: \$10,000.

SELECTED PUBLICATIONS

Canipe, M. & Tolbert, S. (2016). Many ways of knowing: A multilogical science lesson on climate change. *The Science Teacher*, 83, 4, 31-35.

Lyon, E., Tolbert, S., Solís, J., Stoddart, T., & Bunch, G., Eds. (2016). *Secondary science teaching for English Learners: Developing supportive and responsive learning contexts for sense-making and language development*. Rowman & Littlefield Publishers.

Tolbert, S. & Knox, C. (2016). "They might know a lot of things that I don't know": Investigating differences in preservice teachers' ideas about contextualizing science instruction in multilingual classrooms. *International Journal of Science Education*. DOI: 10.1080/09500693.2016.1183266

Tolbert, S. (2015). "Because they want to teach you about their culture...": Analyzing effective mentoring conversations between culturally responsible mentors and secondary science

teachers of indigenous students. *Journal of Research in Science Teaching*, DOI: 10.1002/tea.21240

- Tolbert, S. & Eichelberger, S. (2014). Surviving teacher education: A community cultural capital framework of persistence. *Race, Ethnicity, & Education*. 10.1080/13613324.2014.969222
- Tolbert, S., Stoddart, T., Lyon, E., & Solís, J. (2014). The Next Generation Science Standards, Common Core State Standards, and English language learners: Using the SSELLA framework to prepare preservice elementary teachers. *Issues in Teacher Education* (special issue), STEM education: Educating teachers for a new world, 23, 1, 65-90.

SELECTED PEER-REVIEWED CONFERENCE PAPERS

- Knox, C., Salinas, I., & Tolbert, S. (2016). Framing, adapting, and applying: How can novice science teachers construct authentic science learning contexts for/with students in multilingual science classrooms? Paper presented in the Strand 11 Related Paper Set: What is contextualization of science learning environments after all? An exploration across cultural contexts at the annual conference of the National Association of Research in Science Teaching.
- Tolbert, S. & Knox, C. (2015). "How many people have been to the Grand Canyon?" Novice teachers contextualizing science activities in diverse high school science classrooms. Paper presented to the Science Teaching & Learning SIG for the Annual Meeting of the Association of Educational Research Association (AERA).
- Tolbert, S. (2014). Investigating the culturally responsive practices of science teachers with Indigenous students. Paper presented at the annual meeting of the American Educational Research Association (AERA), Philadelphia, PA.
- Tolbert, S. (2014). Relationship-based pedagogy as culturally responsive science instruction for Indigenous students. Presented at the annual meeting of the Association of Science Teacher Educators (ASTE), San Antonio, TX.

SELECTED SERVICE COMMITMENTS

Professional: Founding Member and Chair of Membership/Communications Committee, Science Education for Diversity, Equity, and Social Justice (SEEDS); National Science Foundation, Education and Human Resources, panelist [2014, 2015, 2016, 2018]; Secretary, AERA Science Teaching & Learning SIG 2013-2016; Secretary, Far West Region, Association for Science Teacher Educators (ASTE) 2013-2016; Secretary, NARST Latino/a Research Interest Group (LARIG), 2013-2016; *Journal for Research in Science Teaching*, Editorial board member, 2015-2018; *Cultural Studies of Science Education*, Editorial Board Member, 2017 to present; External Reviewer, Diversity and Equity in Science Learning from an Indigenous Perspective, Diversity and Equity in Science Learning section (O. Lee & C. Buxton, Section Editors), *Handbook of Research on Science Education*, 2nd ed., Taylor & Francis Publishing.

Community: Professional Development for Teachers in Title 1 Schools, Yuma, AZ, Tucson, AZ (various); Professional Development for Cooperating Teachers and University Supervisors, 2015, 2016; CAP: Partnerships for Indigenous Knowledge and Digital Literacies Symposium, invited participant, November 9-10, 2013; Indigenous Language and Traditional Ecological Knowledge (TEK), Invited symposium participant, March 25-26, 2013.

Erin E. Turner

Associate Professor of Mathematics Education
University of Arizona Distinguished Scholar (2017)
Department of Teaching, Learning and Sociocultural Studies
College of Education, University of Arizona Tucson, AZ 85721
eturner@email.arizona.edu

EDUCATION

Arizona State University Elementary Education	B.A. 1994
Major Focus: Bilingual Education, Endorsed	
Arizona State University Curriculum and Instruction	M.A. 1999
Major Focus: Mathematics Education	
University of Texas at Austin Curriculum and Instruction	Ph.D. 2003
Major Focus: Mathematics Education	

APPOINTMENTS

2017-present	Associate Department Head, Teaching, Learning and Sociocultural Studies
2013-present	Associate Professor, University Of Arizona
2006-2013	Assistant Professor, University of Arizona
2004-2005	Assistant Professor, Santa Clara University
1999-2004	Graduate Student Research Assistant and Instructor, University of Texas at Austin
1994-1999	Bilingual Elementary Teacher, Phoenix, AZ

SELECTED PRODUCTS

- Turner, E.,** Foote, M. Q., Stoehr, K. Roth McDuffie, A., Aguirre, J., Bartell, T., & Drake, C. (2016). Learning to leverage students' multiple mathematical knowledge bases in mathematics instruction. *Journal of Urban Mathematics Education, 9, 1.* 48-78.
- Turner, E. & Drake, C.** (2015). A review of research on prospective teachers' learning about children's mathematical thinking and cultural funds of knowledge. *Journal of Teacher Education, 67, 1,* 32-46.
- Turner, E. E.,** Aguirre, J. M., Bartell, T.G., Drake, C., Foote, M.Q. & Roth McDuffie, A. (2014). Making meaningful connections with mathematics and the community: Lessons from pre-service teachers. In T. Bartell & A. Flores (Eds.), *TODOS Research Monograph 3: Embracing Resources of Children, Families, Communities, and Cultures in Mathematics Learning* (pp. 60 – 100). TODOS: Mathematics for All.
- Aguirre, J. M., **Turner, E. E.,** Bartell, T. G., Kalinec-Craig, C., Foote, M. Q., Roth McDuffie, A., & Drake, C. (2013). Making connections in practice: Developing prospective teachers' capacities to connect children's mathematical thinking and community funds of knowledge in mathematics instruction. *Journal of Teacher Education, 64(2),* 178-192. DOI: 10.1177/0022487112466900
- Turner, E.E.,** Drake, C., Roth McDuffie, A., Aguirre, J.M., Bartell, T.G., & Foote, M.Q. (2012). Promoting equity in mathematics teacher preparation: A framework for advancing teacher learning of children's multiple mathematical knowledge bases. *Journal of Mathematics Teacher Education 15(1):* 67-82.

Other Products

- Turner, E.,** Dominguez, H. Empson, S., Maldonado, L. (2013). Latino/a bilinguals and their teachers developing a shared communicative space. *Educational Studies in Mathematics, 84,* 349-370. DOI: 10.1007/s10649-013-9486-2.
- Turner, E.,** Dominguez, H., Maldonado, L., Empson, S. (2013). English Language Learners identity-enhancing participation in mathematical discussion. *Journal for Research in Mathematics Education, 44, 1,* 199-234. *Special Equity Issue, R. Gutiérrez (Ed.).*

Foote, M. Q., Roth McDuffie, A., **Turner, E. E.**, Aguirre, J. M., Bartell, T. G., & Drake, C. (2013). Orientations of prospective teachers towards students' families and communities. *Teaching and Teacher Education*, 35, 126-136.

Tan, E., Calabrese Barton, A., **Turner, E.** & Varley Gutiérrez, M. (2012) *Empowering Science and Mathematics Education in Urban Schools*. Chicago, IL

Turner, E. Varley, M. Simic, K. & Diaz-Palomar, J. (2009). "Everything is math in the whole world!" Integrating critical and community knowledge in authentic mathematical investigations with elementary Latino/a students. *Mathematical Thinking and Learning: An international Journal*, 11, 3, 136-157.

Synergistic Activities

PI, National Science Foundation Grant (EHR CORE Research), Mathematical Modeling in Cultural and Community Contexts (M2C3) (Co-PIs: Drs. Julia Aguirre, Mary Foote and Amy Roth McDuffie). (2016-2019)

Co-PI, National Science Foundation Grant, Teachers Empowered to Advance Change in Mathematics (TEACH MATH): Preparing PreK-8 Teachers to Connect Children's Mathematical Thinking and Community-Based Funds of Knowledge (Co-PIs: Drs. Corey Drake, Julia Aguirre, Tonya Bartell, Marta Civil, Mary Foote, Amy Roth McDuffie). (2010-2015)

Senior Personnel, National Science Foundation Grant, Beyond Bridging: Co-education of preservice and inservice teachers science and mathematics (PI: Bruce Johnson) (2010-2014)

Co-PI, National Science Foundation Grant, AZ Master Teachers of Mathematics (AZ-MTM). (PI: Mathew Felton). (2010-2014)

PI, Arizona Board of Regents ITQ Grant, Southern Arizona Math Institute (SAZMI) (Co-PI, Cynthia Anhalt) (2012-2014)

Co-PI, Science Foundation Arizona, *The Southern Arizona Center for Development and Retention of Science and Mathematics Teachers*, (PI: Bruce Johnson, Co-PIs: Kristin L. Gunckel, Marcy Wood) (2008-2011)

Co-PI, National Science Foundation Grant, Arizona Teacher Institute (ATI) (PI: Dan Madden) (2006-2011)

Postdoctoral Scholar and Faculty Researcher, CEMELA: Center for Mathematics Education of Latino/as (PI: Marta Civil) (2005-2008)

Marcy Wood, Ph.D.

Project role: Associated Faculty, Curriculum and Pedagogy for Diverse Communities in STEM-Related Fields

Education

Ph.D. **Michigan State University**, Curriculum, Teaching, and Educational Policy, 2008
Emphasis in Teacher Education with a focus on Elementary Mathematics

Teaching Certificate, **University of New Mexico**, 2000
Elementary K-8 Certification

M.A. **University of New Mexico**, Elementary Education, 1999
Emphasis in Science Education

B.A. **Earlham College**, Biology, 1990

Positions

Director of Graduate Students 2017 – present
Department of Teaching, Learning, and Sociocultural Studies
University of Arizona

Associate Professor of Mathematics Education 2014 – present
Department of Teaching, Learning, and Sociocultural Studies
University of Arizona
Affiliation: University of Arizona Institute for LGBT Studies

Assistant Professor of Mathematics Education 2008 – 2014
Department of Teaching, Learning, and Sociocultural Studies
University of Arizona

Selected Publications & Presentations

Books

Featherstone, H. F., Crespo, S., Jilk, L. M., Oslund, J., Parks, A., & **Wood, M. B.** (2011).
Smarter together! Collaboration and equity in the elementary classroom. Reston, VA:
National Council of Teachers of Mathematics.

Journal Articles

Wood, M. B. (2016). Rituals and right answers: Barriers and supports to autonomous activity.
Educational Studies in Mathematics, 91(3), 327-348.

Gunckel, K. L., & **Wood, M. B.** (2016). The Principle–Practical Discourse Edge: Elementary
Preservice and Mentor Teachers Working Together on Co-Learning Tasks. *Science
Education*, 100(1), 96-121.

- Wood, M. B.** & Turner, E. T. (2015). Bringing the teacher into teacher preparation: Learning from mentor teachers in joint methods activities. *Journal of Mathematics Teacher Education*, 18(1), 27-51.
- Wood, M. B.** (2013). Mathematical micro-identities: Moment-to-moment positioning and learning in a fourth-grade classroom. *Journal for Research in Mathematics Education*, 44(5), 775-808.
- Good, T. L., **Wood, M. B.**, Sabers, D., Olson, A. M., Kalinec, C. A., Lavigne, A., & Sun, H. (2013). Strengthening grade 3-5 students' foundational knowledge of rational numbers. *Teachers College Record*, 115 (7), p.
- Wood, M. B.**, Jilk, L. M., & Paine, L. (2012). Moving beyond sinking or swimming: Reconceptualizing needs of beginning teachers. *Teachers College Record*, 114(8), p. 1-44.
- Wood, M. B.** & Kalinec, C. A. (2012). Student talk and opportunities for learning in small group interactions. *International Journal of Educational Research*, 51-52, 109-127.
- Wood, M. B.** (2010). Not understanding Andy: A metaphorical analysis of students' resistance to learning. *For the Learning of Mathematics*, 30 (3), 17-22.

Conference Proceedings

- Wood, M.B.** and Gunckel, K.L. (2017). Do you see what I see? Connecting mathematics to the real world. In E. Galindo & J. Newton, (Eds.), *Proceedings of the 39th Annual North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 1218-1221). Indianapolis, IN: Hoosier Association of Mathematics Teacher Educators.
- Eli, J. A., & **Wood, M.B.** (2016). Learning to facilitate groupwork through Complex Instruction . In **M.B. Wood**, E. Turner, M. Civil & J.A. Eli (Eds.), *Proceedings of the 38th Annual North American Chapter of the International Group for the Psychology of Mathematics Education* (pp.933). Tucson, AZ: The University of Arizona

Selected Grants & Fellowships

- | | |
|--|-----------|
| <i>Developing and Validating a Scalable, Classroom-focused Measure of Usable Knowledge for Teaching Mathematics: The Classroom Video Analysis Instrument</i> | 2017-2021 |
| Senior Researcher, 12% effort, \$1,073,586 over 4 years | |
| <i>LIMES: Leadership Institute for Mathematics in Elementary Schools</i> | 2015-2016 |
| Co-PI, 8% effort, \$355,934 | |
| <i>Smarter Together Working Conference: Developing a Shared Curriculum of Complex Instruction for Elementary Mathematics Methods Courses</i> | 2013-2015 |
| Co-PI, 8% effort, \$107,000 over 2 years | |

Ofelia Zepeda

Project Role: Associated Faculty

Current Positions

Director, The American Indian Language Development Institute

1999-Present Affiliate Faculty, American Indian Studies

2000-Present Affiliate Faculty, Second Language & Teaching (SLAT), University of Arizona

2004-Present Affiliate Faculty, Language, Reading & Culture

2006-Present, Appointed, Board of Trustee, Tohono O'odham Community College

2007-Present. Regents' Professor of Linguistics, University of Arizona

Education

1984, Ph.D., University of Arizona (Linguistics)

1981, M.A., University of Arizona (Linguistics)

1980, B.A., University of Arizona (Linguistics)

Selected Publications

2014, Function of Medium-of-Instruction Policies in Indigenous and Minoritized Education, with T. McCarty, M.E. Romero-Little, in *Researching Race in Education: Practical and Qualitative Research*, Adrienne Dixon, editor. IAP Inc.

2008, Language Policies in Practice: Implications from a National Study of Native American Language Shift, M. Eunice Romero-Little, T. McCarty, L. Warhol in *TESOL Journal*

2008, "Indigenous Language Policy in Social Practice: A Navajo Example" with M.E. Romero and T. McCarty, Georgetown University Press.

2006, "Reclaiming Multilingual American: A lesson from Native American Youth" with T. McCarty, M.E. Romero, in *Imagining Multilingual Schools*.

2006, "Native American Youth Discourse on Language Shift and Retention: Ideological Cross-currents and Their Implications for Language Planning" with T. McCarty & M.E. Romero, in *International Journal for Bilingual Education and Bilingualism* V9. Issue 5. MultilingualMatters Publisher.

2005, "Reclaiming the Gift: Youth Counter-narratives on Native Language Loss and Revitalization." In *American Indian Quarterly*, Teresa McCarty, M.E. Romero

2001, Native American Languages, in *Languages in the USA*, with A. Yamamoto, E. Finegan & J. Rickford, eds.

2001, Indigenous Educators as Change Agents: Case Studies of Two Language Institutes, with T. McCarty, L. Watahomogie, Y. Yamamoto, in *The Green Book of Language Revitalization in Practice*, K. Hale and L. Hinton, eds.

2001, Collaborative Linguistic Research among the Tohono O'odham, with Jane Hill, in *Native American Oral Traditions, Collaborations & Interpretation*, Larry Evers & Barre Toelken, eds.

Previous Employment

2014-2015, Head, Dept. of American Indian Studies, University of Arizona

2013-2014, Acting Head, Dept. of Linguistics, University of Arizona

1999-2006, Professor of Linguistics, University of Arizona

1989-03, Co-Director, The American Indian Language Development Institute (AILDI) AILDI is a training institute for language educators serving Native American students. AILDI has a thirty seven year history in the field of Native American education.

1992-1999, Associate Professor of Linguistics, University of Arizona.

1991-1992, Assistant Professor of Linguistics, University of Arizona.

1986-1991, Director of the American Indian Studies Program, University of Arizona.

Title: Assistant Research Social Scientist, Soc. and Behavioral Sciences

1986-1991, Assistant Research Social Scientist, University of Arizona

Synergistic Activities

Co-founder of the American Indian Language Development Institute (AILDI), featuring a four-week summer residential training institute for language teachers, researchers, and students of Indigenous languages. The Institute provides a range of courses and training in all areas of Native American linguistics, language teaching, language policy, language documentation and revitalization.

In addition the Institute provides short-term non-credit training on grant writing for the purposes of documenting endangered languages, using technology for documenting and teaching endangered languages.

Faculty and advisor along with Dr. Tyler Peterson for the Master's Program in Native American Languages and Linguistics in the Department of Linguistics. Students in this program have as their primary research area endangered language documentation, pedagogy and teaching.

References

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Letters of Support

Baboquivari Unified School District

Gila River Indian Community

Hopi Tribe

Sacaton Elementary School District

San Carlos Apache College

Southern Arizona Research, Science and Engineering Foundation

University of Arizona STEM Learning Center

Tohono O'odham Community College

Tohono O'odham Nation Education Department



BABOQUIVARI UNIFIED SCHOOL DISTRICT

P.O. Box 248
Sells, Arizona 85634

www.busd40.org

(520) 719-1200
Fax: (520) 383-5441

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July 19, 2018

Dr. Valerie Shirley
Department of Teaching, Learning, & Sociocultural Studies
The University of Arizona
1430 E. 2nd St
PO Box 210069
Tucson, AZ, 86721

Dear Dr. Shirley,

I am writing in support of the University of Arizona's (UA) application entitled, *Indigenous Teacher Education Project*, to be submitted for the Office of Indian Education Professional Development Grant. I understand the proposed project will contribute to increasing the number of Native American teachers needed across schools serving Indigenous students. Unique to this proposal is the importance of developing Native teachers who will be provided with skills in STEM and/or computer science practices, understand the importance of culturally sustaining pedagogy, justice-centered education, and the significance of integrating Indigenous knowledge, values and language. These are aspects of education that we value and see as essential to supporting and ensuring that our students succeed academically and culturally.

The Baboquivari Unified School District is pleased to work in collaboration with the University of Arizona on the proposed project in preparing a cohort of Native American pre-service teachers in the Elementary Education Program. Our District has had a long standing need to Native American teachers as only 23% of our teachers are Native American. We serve 1200 students from the Tohono O'odham Nation and our children would learn much from Native American teachers. Our teachers would not be successful without continued partnerships like the ITEP through the University of Arizona.

As part of our support of this proposed project, the Baboquivari Unified School District is committed to partnering with the UA to ensure that the proposed project is successful. We will work with the project team to:

- Recruit participants to the program
- Serve as a field site (i.e., student practicum, courses, student teaching)
- Contribute to program development
- Provide information and communication for project related activities
- Support the program graduates in finding qualifying employment opportunities
- Offer services to mentor program participants during their first year of teaching

Understanding the significance of having an increase of Native American teachers within our schools, we are excited about this proposed initiative. Importantly, we look forward to the outcomes and anticipated benefits the project will have on our tribal schools, students and community.

Sincerely,

Edna Morris, Ed.D
Superintendent

PR/Award # S299B180003

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GILA RIVER INDIAN COMMUNITY

SACATON, AZ 85147

TRIBAL EDUCATION DEPARTMENT

Education Administration

Post Office Box 97

Sacaton, Az 85147

Phone: (520) 562-3662

Fax: (520) 562-2924

July 16, 2018

Dr. Valerie Shirley
Department of Teaching, Learning, & Sociocultural Studies
The University of Arizona
1430 E. 2nd St
PO Box 210069
Tucson, AZ, 86721

Dear Dr. Shirley,

I am writing in support of the University of Arizona's (UA) application entitled, *Indigenous Teacher Education Project*, to be submitted for the Office of Indian Education Professional Development Grant. I understand the proposed project will contribute to increasing the number of Native American teachers needed across schools serving Indigenous students. Unique to this proposal is the importance of developing Native teachers who will be provided with skills in STEM and/or computer science practices, understand the importance of culturally sustaining pedagogy, justice-centered education, and the significance of integrating Indigenous knowledge, values and language. These are aspects of education that we value and see as essential to supporting and ensuring that our students succeed academically and culturally.

The Gila River Indian Community Tribal Education Department is pleased to work in collaboration with the University of Arizona on the proposed project in preparing a cohort of Native American pre-service teachers in the Elementary Education Program. Currently less than 15% of the teachers in our Community are Community Members. With over 2,000 children attending our schools it is imperative that we collaborate with other agencies to prepare Community Members to serve as role models for our students as they teach and guide their development. The Tribal Education Department works to provide Professional Development for all our teachers. In addition we work to support and incentivize teaching within the Community. STEM Education is a high priority for Gila River Indian Community. Our overarching goal is to prepare through partnerships such as the one proposed here, Community Members who will direct and oversee all community industries.

As part of our support of this proposed project, the Gila River Indian Community Tribal Education Department is committed to partnering with the UA to ensure that the proposed project is successful. We will work with the project team to:

Recruit participants to the program

Serve as a field site (i.e., student practicum, courses, student teaching)

Contribute to program development

Provide information and communication for project related activities
Support the program graduates in finding qualifying employment opportunities
Offer services to mentor program participants during their first year of teaching

Understanding the significance of having an increase of Native American teachers within our schools, we are excited about this proposed initiative. Importantly, we look forward to the outcomes and anticipated benefits the project will have on our tribal schools, students and community.

(b)(6)

A large rectangular redacted area with a black border, covering the signature and contact information of Isaac Salcido.

Isaac Salcido, Director
Gila River Indian Community
Tribal Education Department



Timothy Nuvangyaoma
CHAIRMAN

Clark Tenakhongva
VICE-CHAIRMAN

July 23, 2018

Dr. Valerie Shirley
Department of Teaching, Learning, & Sociocultural Studies
The University of Arizona
1430 E. 2nd St
PO Box 210069
Tucson, AZ, 86721

Dear Dr. Shirley,

I am writing in support of the University of Arizona's (UA) application entitled, *Indigenous Teacher Education Project*, to be submitted for the Office of Indian Education Professional Development Grant. I understand the proposed project will contribute to increasing the number of Native American teachers needed across schools serving Indigenous students. Unique to this proposal is the importance of developing Native teachers who will be provided with skills in STEM and/or computer science practices, understand the importance of culturally sustaining pedagogy, justice-centered education, and the significance of integrating Indigenous knowledge, values and language. These are aspects of education that we value and see as essential to supporting and ensuring that our students succeed academically and culturally.

The Hopi Tribe, Department of Education and Workforce Development, is pleased to work in collaboration with the University of Arizona on the proposed project in preparing a cohort of Native American pre-service teachers in the Elementary Education Program. The Hopi Tribe schooling system consists of six (6) Elementary Schools and one Hopi Junior Senior High School, with a total enrollment of approximately 1500 students. The importance of our Native American teachers in our schools, including Hopi teachers, is a need on Hopi. Our "own" teachers serve as role models and mentors to our students as we value education and the integration of our Hopi values and language. In addition, the Hopi Tribe Department of Education seeks to support and mentor new teachers in our schooling system as we also value the importance of STEM practices. New teachers, with training in culturally sustaining pedagogy, will certainly be an asset to our schools on Hopi as a very worthwhile proposed initiative.

As part of our support of this proposed project, the Hopi Tribe is committed to partnering with the UA to ensure that the proposed project is successful. We will work with the project team to:

- Recruit participants to the program
- Serve as a field site (i.e., student practicum, courses, student teaching)
- Contribute to program development
- Provide information and communication for project related activities
- Support the program graduates in finding qualifying employment opportunities
- Offer services to mentor program participants during their first year of teaching

Most importantly, we look forward to the outcomes and anticipated benefits the project will have on our tribal schools, students and community.

Sincerely

(b)(6)

Noreen E. Sakiestewa, Ed.D.
Director
Department of Education & Workforce Development

xc: File



Sacaton
Elementary School District #18
"Pride of the River"

P.O. Box 98
92 S. Skill Center Road
Sacaton, AZ 85147
Phone (520) 562-8600
www.sacatonschools.org

Superintendent
Mrs. Cheryl Paul

Governing Board
Mrs. Elaine Moyah
Ms. Jane Johnson
Ms. Anika Evans
Mrs. Laurie Thomas

July, 12, 2018

Dr. Valerie Shirley
Department of Teaching, Learning, & Sociocultural Studies
The University of Arizona
1430 E. 2nd St
PO Box 210069
Tucson, AZ, 86721

Dear Dr. Shirley,

I am writing in support of the University of Arizona's (UA) application entitled, *Indigenous Teacher Education Project*, to be submitted for the Office of Indian Education Professional Development Grant. I understand the proposed project will contribute to increasing the number of Native American teachers needed across schools serving Indigenous students. Unique to this proposal is the importance of developing Native teachers who will be provided with skills in STEM and/or computer science practices, understand the importance of culturally sustaining pedagogy, justice-centered education, and the significance of integrating Indigenous knowledge, values and language. These are aspects of education that we value and see as essential to supporting and ensuring that our students succeed academically and culturally.

The Sacaton Elementary School District #18 (SESD) is pleased to work in collaboration with the University of Arizona on the proposed project in preparing a cohort of Native American pre-service teachers in the Elementary Education Program. Currently 19% of the staff is Native American and 16% are Gila River Indian Community Members. It is important to hire more Native American teachers; however, there are few prospects. Therefore, we would like to partner with the University of Arizona to increase the number of Native American teachers here in the Gila River Indian Community. We have over 600 Indigenous students in our Pre-Kindergarten through 8th grades that could be well served by Native teachers who understand the importance of a culturally responsive education. The Gila River Indian Community, with the support of the Governor and the Tribal Council, has provided funds to all GRIC schools, including SESD, so that the Native Culture can be integrated and the Indigenous knowledge, values and language be incorporated into our students' lessons.

As part of our support of this proposed project, the Sacaton Elementary School District #18 is committed to partnering with the UA to ensure that the proposed project is successful. We will work with the project team to:

- Recruit participants to the program
- Serve as a field site (i.e., student practicum, courses, student teaching)
- Contribute to program development
- Provide information and communication for project related activities
- Support the program graduates in finding qualifying employment opportunities
- Offer services to mentor program participants during their first year of teaching

Understanding the significance of having an increase of Native American teachers within our schools, we are excited about this proposed initiative. Importantly, we look forward to the outcomes and anticipated benefits the project will have on our tribal schools, students and community.

Sincerely,

Mrs. Cheryl Paul, Superintendent
Sacaton Elementary School District #18

PR/Award # S299B180003



Sacaton
Elementary School District #18
Heart of the River

P.O. Box 98
92 S. Skill Center Road
Sacaton, AZ 85147
Phone (520) 562-8600
www.sacatonschools.org

Superintendent
Mrs. Cheryl Paul

Governing Board
Mrs. Elaine Moyah
Ms. Jane Johnson
Ms. Anika Evans
Mrs. Laurie Thomas

July, 12, 2018

Dr. Valerie Shirley
Department of Teaching, Learning, & Sociocultural Studies
The University of Arizona
1430 E. 2nd St
PO Box 210069
Tucson, AZ, 86721

Dear Dr. Shirley,

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As part of our support of this proposed project, the Sacaton Elementary School District #18 is committed to partnering with the UA to ensure that the proposed project is successful. We will work with the project team to:

- Recruit participants to the program
- Serve as a field site (i.e., student practicum, courses, student teaching)
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Understanding the significance of having an increase of Native American teachers within our schools, we are excited about this proposed initiative. Importantly, we look forward to the outcomes and anticipated benefits the project will have on our tribal schools, students and community.

Sincerely,

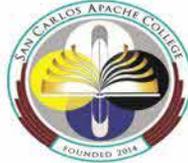
Mrs. Cheryl Paul, Superintendent
Sacaton Elementary School District #18

PR/Award # S299B180003

SAN CARLOS APACHE COLLEGE

Post Office Box 344 • San Carlos, Arizona 85550

Tel 928.475.2016 • 928.475.2016



July 23, 2018

Dr. Valerie Shirley
Department of Teaching, Learning, & Sociocultural Studies
The University of Arizona
1430 E. 2nd St
PO Box 210069
Tucson, AZ, 86721

Dear Dr. Shirley,

I am writing in support of the University of Arizona's (UA) application entitled, *Indigenous Teacher Education Project (ITEP)*, to be submitted for the Office of Indian Education Professional Development Grant. I understand the proposed project will contribute to increasing the number of Native American teachers needed across schools serving Indigenous students. Unique to this proposal is the importance of developing Native teachers who will be provided with skills in STEM and/or computer science practices, understand the importance of culturally sustaining pedagogy, justice-centered education, and the significance of integrating Indigenous knowledge, values and language. These are aspects of education that we value and see as essential to supporting and ensuring that our students succeed academically and culturally.

The San Carlos Apache College, currently a site of Tohono O'odham Community College, is pleased to work in collaboration with the University of Arizona on the proposed project in preparing a cohort of Native American pre-service teachers in the Elementary Education Program. Although, we do not currently offer a full two-year program in Elementary Education at our institution, we do have a great need in the community for an increased number of highly-qualified Native American teachers. We work closely with the school district superintendent on our new dual credit program, and we are starting some new projects to support one of their grants which has a strong STEM focus. In the next year, we will be working much more closely with the school district on a number of projects and this will allow us to help recruit potential teachers for this program.

As part of our support of this proposed project, the San Carlos Apache College is committed to partnering with the UA to ensure that the proposed project is successful. We will work with the project team to:

- Recruit participants to the program and sustain pathways for students to transfer from San Carlos Apache College to UA to earn a BA in Education
- Disseminate information and communication for recruitment
- Assist in building partnerships with the San Carlos Apache schools, community, and other surrounding tribal communities

Understanding the significance of having an increase of Native American teachers within our schools, we are excited about this proposed initiative. Importantly, we look forward to the outcomes and anticipated benefits the project will have on our tribal schools, students and community.

Sincerely,

(b)(6)

Dr. Lisa Eutsey

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July 20, 2018

Dr. Valerie Shirley
Department of Teaching, Learning, & Sociocultural Studies
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1430 E. 2nd St PO Box 210069
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John and Helen Schaefer
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PICOR Charitable Foundation
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Pima Community College Foundation
Sonoran Schools, Inc.
S. AZ Environmental Management
William and Kathleen Bethel
Elizabeth and William Ignatoff

Dear Dr. Shirley,

I am writing in support of the University of Arizona's (UA) application entitled, *Indigenous Teacher Education Project*, to be submitted for the Office of Indian Education Professional Development Grant. I understand the proposed project will contribute to increasing the number of Native American teachers needed across schools serving Indigenous students. Unique to this proposal is the importance of developing Native teachers who will be provided with skills in STEM and/or computer science practices, understand the importance of culturally sustaining pedagogy, justice-centered education, and the significance of integrating Indigenous knowledge, values and language. These are aspects of education that we value and see as essential to supporting and ensuring Indigenous students succeed academically and culturally.

The Southern Arizona Research, Science and Engineering Foundation (SARSEF) is pleased to work in collaboration with the University of Arizona's STEM Center on the proposed project in preparing a cohort of Native American pre-service teachers in the Elementary Education Program. SARSEF's mission is to provide STEM education to underserved populations in areas of poverty and support rural areas where resources may not be as readily available. Our goal is to level the playing field so that every child has equal opportunity to be successful – and that starts with their teacher. To accomplish our STEM goals, SARSEF provides professional development in the scientific process, engineering design, integrating standards, and research protocols to future and beginning K-12 teachers. We provide training that is specifically designed and tailored for the community served so it is culturally appropriate and sensitive to both academic and cultural needs.

As part of our support of this proposed project, SARSEF is committed to partnering with the UA to ensure that the proposed project is successful. We will work with the project team to:

- Offer 1-2 STEM workshops in ITEP's Elementary Education Program
- Offer 1-2 STEM workshops to support participants during their first 2 years of teaching plus serve as a continuing resource for STEM support.

Understanding the significance of having an increase of Native American teachers within schools, we are excited about this proposed initiative. We look forward to the outcomes and anticipated benefits the project will have on our tribal schools, students and community.

Sincerely,

(b)(6)

Kathleen A. Bethel, EdD,
SARSEF CEO
(520) 940-1963 kathleen@sarsef.org

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THE UNIVERSITY OF ARIZONA

STEM Learning Center

July 22, 2018

Dr. Valerie Shirley
Department of Teaching, Learning, & Sociocultural Studies
The University of Arizona
1430 E. 2nd St
PO Box 210069
Tucson, AZ, 86721

Dear Dr. Shirley,

I am writing in support of the University of Arizona's (UA) application entitled, *Indigenous Teacher Education Project* (ITEP), to be submitted for the Office of Indian Education Professional Development Grant. I understand the proposed project will contribute to increasing the number of Native American teachers needed across schools serving Indigenous students. Unique to this proposal is the importance of developing Native teachers who will be provided with skills in STEM and/or computer science practices, understand the importance of culturally sustaining pedagogy, justice-centered education, and the significance of integrating Indigenous knowledge, values and language. These are aspects of education that we value and see as essential to supporting and ensuring Indigenous students succeed academically and culturally.

The UA STEM Learning Center (SLC) is pleased to work in collaboration with the University of Arizona on the proposed project in preparing a cohort of Native American pre-service teachers in the Elementary Education Program. The project outlined within the proposal aligns well with the strategic priorities of the SLC. Of prime importance is to diversify STEM populations and STEM career fields, to promote and disseminate best practices in engaging students in STEM, and to stimulate and cultivate inclusive STEM learning environments. We view this project of preparing Native American teachers with enriching, hands-on STEM skills and practices a vital part of building a rich and vibrant STEM environment whose students will have the confidence and ability to address, head-on, some of our communities most pressing societal issues.

As part of our support of this proposed project, the UA STEM Learning Center is committed to partnering with the UA to ensure that the proposed project is successful. We will work with the project team to:

- Serve as an advisor to ITEP STEM-related initiatives
- Identify 1-2 STEM workshops to be offered in ITEP
- Identify UA STEM Learning Center partners to support and sustain ITEP

Understanding the significance of having an increase of Native American teachers within schools, we are excited about this proposed initiative. Importantly, we look forward to the

outcomes and anticipated benefits the project will have on our tribal schools, students and community.

Sincerely,

(b)(6)

Associate Director
University of Arizona STEM Learning Center



TOHONO O'ODHAM COMMUNITY COLLEGE

P.O. Box 3129 • Sells, AZ 85634

Phone: (520) 383-8401 • Fax: (520) 383-8403

Website: www.tocc.edu

July 22, 2018

Dr. Valerie Shirley
Department of Teaching, Learning, & Sociocultural Studies
The University of Arizona
1430 E. 2nd St
PO Box 210069
Tucson, AZ, 86721

Dear Dr. Shirley,

I am writing in support of the University of Arizona's (UA) application entitled, *Indigenous Teacher Education Project*, to be submitted for the Office of Indian Education Professional Development Grant. I understand the proposed project will contribute to increasing the number of Native American teachers needed across schools serving Indigenous students. Unique to this proposal is the importance of developing Native teachers who will be provided with skills in STEM and/or computer science practices, understand the importance of culturally sustaining pedagogy, justice-centered education, and the significance of integrating Indigenous knowledge, values and language. These are aspects of education that we value and see as essential to supporting and ensuring that our students succeed academically and culturally.

The Tohono O'odham Community College (TOCC) is pleased to work in collaboration with the University of Arizona on the proposed project in preparing a cohort of Native American pre-service teachers in the Early Childhood and Elementary Education Programs. There is a critical need to increase the number of Native teachers in schools on the Tohono O'odham Nation and in others in Arizona where they are greatly underrepresented. On the Tohono O'odham Nation, for example, upwards of 90% of teachers in the K-12 system are non-Native. STEM disciplines are especially underrepresented by Native teachers. This project has the potential to help address those imbalances. TOCC is just now beginning to offer an Associate of Arts degree in teacher education. Graduating students will be fully apprised of the opportunity to transfer to the University of Arizona's *Indigenous Teacher Education Project*.

As part of our support of this proposed project, TOCC is committed to partnering with the UA to ensure that the proposed project is successful. We will work with the project team in three main areas:

1. Recruit participants to the program and sustain pathways for students to transfer from Tohono O'odham Community College to UA to earn a BA in Education;

"Ñia, Oya G-T- Tacui Am Hab E-ju – Our Dream Fulfilled"



TOHONO O'ODHAM COMMUNITY COLLEGE

P.O. Box 3129 • Sells, AZ 85634

Phone: (520) 383-8401 • Fax: (520) 383-8403

Website: www.tocc.edu

2. Disseminate information and communication for recruitment; and
3. Assist in building partnerships with the Tohono O'odham schools, community, and other surrounding tribal communities.

Understanding the significance of having an increase of Native American teachers within our schools, we are excited about this proposed initiative. We look forward to the outcomes and anticipated benefits the project will have on our tribal schools, students and community.

Sincerely,

(b)(6)

Paul M. Robertson, Ph.D.
President



Tohono O'odham Nation

Education Department

P.O. Box 837

Sells, Arizona 85634

Telephone: (520) 383-8650

Fax: (520) 383-2429

MASCAMA: Mo 'ab'e-namks g si O'odham himdag g Milga:n himdag we:m
EDUCATION: A bridge between tradition and the modern world

July 25, 2018

Dr. Valerie Shirley
Department of Teaching, Learning, & Sociocultural Studies
The University of Arizona
1430 E. 2nd St, PO Box 210069
Tucson, AZ, 86721

Dear Dr. Shirley,

I am writing in support of the University of Arizona's (UA) application entitled, *Indigenous Teacher Education Project*, to be submitted for the Office of Indian Education Professional Development Grant. I understand the proposed project will contribute to increasing the number of Native American teachers needed across schools serving Indigenous students. Unique to this proposal is the importance of developing Native teachers who will be provided with skills in STEM and/or computer science practices, understand the importance of culturally sustaining pedagogy, justice-centered education, and the significance of integrating Indigenous knowledge, values and language. These are aspects of education that we value and see as essential to supporting and ensuring that our students succeed academically and culturally.

The Tohono O'odham Nation Education Department is pleased to work in collaboration with the University of Arizona on the proposed project in preparing a cohort of Native American pre-service teachers in the Elementary Education Program. Our department works with state schools, BIE schools and Head Start Program. We understand and advocate the need to cultivate and increase the number of Native American teachers to teach our children. We provide support by offering a Cultural awareness session for all teachers who work with our children.

To support this proposed project, the Tohono O'odham Nation Education Department is committed to partnering with the UA to ensure that the proposed project is successful. We will work with the project team to:

- Recruit participants to the program and sustain pathways for students to transfer from Tohono O'odham Community College to UA to earn a BA in Education
- Disseminate information and communication for recruitment
- Assist in building partnerships with the Tohono O'odham schools, community, and other surrounding tribal communities

Understanding the significance of having an increase of Native American teachers within our schools, we are excited about this proposed initiative. We look forward to the outcomes and anticipated benefits the project will have on our tribal schools, students and community.

Cordially

(b)(6)

Winifred Begay, Director of Education
Tohono O'odham Nation



TEACHERS IN INDUSTRY

Partnering with business to prepare the future workforce

Teachers In Industry has been operating since 2009! Since that time we have accumulated data demonstrating our high retention rate within the teaching profession. In addition our teachers show substantial overall improvements in classroom practice, moving from traditional teacher centered approaches towards reformed teaching - which can help students build proficiency not only in content but also in 21st century skills such as problem solving and collaboration in real-life applications. To facilitate this kind of teaching and learning, Teachers in Industry integrates paid real-world industry experience each summer in local businesses around Arizona together with focused professional development activities. Teachers in Industry courses are based on the STEM disciplines as well as teacher education & training. Teachers in Industry focuses on guiding teachers to effectively bring their real-world experiences back into classrooms, while building in-depth and practical knowledge of the workplace. Our program is also consistent with ISTE, the Next Generation Science Standards and the Mathematics Core Curriculum.

Website: <https://teachersinindustry.arizona.edu/about-us.html>

TLSS Position Statement on Social Justice, Adopted March 25, 2014

The members of the TLSS community are committed to providing equal opportunity and nurturing an academic climate dedicated to social justice.

Injustice takes many forms. Oppressive acts are sometimes overt, but most are subtle, and are difficult to document. These hidden forms of discrimination are identified in the literature as microaggressions, often resulting from unexamined attitudes and beliefs. Macroaggressions are expressions of both the overt and systemic forms of injustice.

Our commitment to social justice reflects an orientation to our goals and practices in education and ultimately, an orientation to life that values a diversity and inclusion of viewpoints and experiences of all people as valuable contributors to the experience of schooling and society. This stance recognizes that individuals bring a variety of linguistic, social, and cognitive strengths from their families and communities into the classroom; we view these strengths as assets.

1. We value and honor human diversity.
2. We recognize that all relationships include dynamics of power. We are committed to relating to each other with conscious awareness and sensitivity to these power dynamics.
3. We pledge to contribute to expanding the linguistic and cognitive strengths that learners possess and bring with them to the classroom.
4. We understand that systemic policies, traditions, and laws along with personal beliefs, experiences and attitudes affect personal relationships and equitable treatment and opportunity for all.
5. We strive to provide a context where we all have the venue, the opportunity, and the confidence to express our experiences and that these experiences will be heard constructively, critically, and with sensitivity.
6. Hence, we are not color blind. We will not erase who someone is in the name of equality, nor deny the historical, material and emotional impacts of racialized and gendered identities, and colonial legacies.

We stand alongside and speak out with our colleagues, staff, students, and community members when any of us or others experience micro- or macroaggressions.

We recognize that those of us who enjoy privileged status due to our racialized, gendered, heteronormative, or otherwise privileged aspects of our identities may be unaware of the ways this privileged status marginalizes others. We pledge to listen to our colleagues, students, staff, and community members when any of us or others make efforts to remain diligent in maintaining awareness of micro, macro aggressions, and raise our awareness around issues of invisibility, marginalization, normativity, power, and privilege.

We view these goals as both crucial and ambitious. The entrenched nature of oppression requires both institutional restructuring and new social discourses. Therefore, our stance on disrupting existing and persisting inequities requires attention to micro and macro level interactions. Every interaction is an opportunity for disrupting processes of marginalization, whether overt or subtle, both through person-to-person exchange and through resisting oppressive structures and systems. We commit to holding one another and ourselves accountable, through our research and practice, to rejecting entrenched inequalities, and to cultivating new discourses as groundwork for imagining new social worlds.

List of Community Colleges

Arizona community colleges identified as having a high percentage of NA students include:

Diné College

Central Arizona College

Chandler-Gilbert Community College (CC)

Cochise College

Coconino CC

Eastern Arizona College

Estrella Mountain CC

Gateway CC

Glendale CC

Mesa CC

Mohave CC

Northland Pioneer College

Paradise Valley CC

Phoenix College

Pima CC

Rio Salado College

San Carlos Apache College

Scottsdale CC

South Mountain CC

Tohono O'odham CC

Yavapai College

Application Requirements

Description of proposed recruitment activities—Please see page 9 of Narrative.

Description of use of funds to support recruitment, preparation, and professional development

The primary focus of the project is to ensure each participant is supported to succeed by providing quality engagement in coursework and mentoring opportunities. The Budget, Budget Narrative, and Management Plan demonstrate a reasonable and adequate budget to meet the project's objectives. All of the funds, both federal and UA contributed, will be used to support participants to actively engage in their program of study, graduate and obtain certification, secure and retain employment, and to become successful educators. Because financial constraint is a major reason participants do not finish their undergraduate programs, funds are provided to cover tuition, fees, technology, books, and cost of living and dependent stipends.

The amount of funding requested was calculated based on previous personnel experience to ensure the proper and successful implementation of the project. Budget requests are designed to provide enough support so that participants can receive state-of-the-art training, study full time, and graduate on time. Given our current resources, we can properly prepare 14 new EE teachers in this project.

Description of payback support—Please see page 25 of Narrative.

Description of meeting Absolute Priority 1

Absolute Priority 1: Pre-service Training for Teachers

The Indigenous Teacher Education Project (ITEP) will recruit a cohort of 14 Native American (NA) preservice teachers in the University of Arizona's (UA) Elementary Education (EE) program. The overarching goal of this project is to increase the number of NA teachers serving NA students and schools. The UA will partner with 5 schools serving NA students: the

Gila River Community Schools (Blackwater, Gila Crossing, Casa Blanca), Hopi Tribal Education Department, Navajo Nation Department of Diné Education, Sacaton Public School District, and Tohono O’odham Baboquivari Unified School District in this unique effort.

Specific objectives and outcomes that will be met are:

- To indigenize EE existing, pedagogy, curriculum, mentoring, and community partnerships,
- To prepare 14 qualified NA project participants to graduate and obtain certification,
- To facilitate employment and provide professional support and mentoring during induction services,
- To infuse Indigenizing STEM practices into the preparation of project participants,
- To build strong partnerships with Tribes, LEAs, and IHEs for sustainability of ITEP.

This project seeks to build on the foundational components of Indigenous teacher education by infusing Indigenous knowledges, values, languages, histories, and cultures into the curriculum. In addition, this project will work to strengthen participant’s understandings, skills, and confidence through Indigenizing STEM (I-STEM) for NA students. In order to reach our goal of increasing the number of NA teachers, we need to address the different phases of the project: recruitment, induction, and assisting with payback obligations.

Induction. Two years of Induction will be provided to participants. Mentoring and induction services will increase retention, graduation, certification, and employment rates. The professional support of teachers calls for on-going mentoring beyond the completion of the program. The induction program will include (a) contact with an assigned mentor; (b) UA mentorship; (c) focus group sessions in regional areas of the state; (d) workshops by STEM organizations and consultants; and (e) participation in induction services offered by their school/district.

STEM Supporting Narrative (Competitive Preference Priority Four)

Our project seeks to build on the foundational components of Indigenous teacher education by infusing Indigenous knowledges, values, languages, histories, and cultures into the curriculum. ITEP has made modifications to the UA EE teacher preparation program by creating learning opportunities that are contextualized in the following framework of a) Teachers as Nation-builders, b) Indigenous Knowledge, Values, and Language, c) Critical and Culturally Sustaining Pedagogies, d) Justice-Centered Pedagogies. Essential to this process includes Indigenous perspectives established in consultation and partnerships with Tribal communities. We have identified Indigenizing STEM (I-STEM) as an additional core component that needs to be incorporated into Indigenous teacher education.

Contextualized within the analysis of the low interest rates of NA students entering STEM-related fields, we recognize the urgency in the need for teachers serving NA students to be equipped with the skills, understanding, and confidence to support NA student interest and experiences in STEM. The National Science Foundation reported in 2014 that American Indian/Alaska Natives (AI/AN) freshmen who intended to major in science and engineering (S & E) fields reflected 30% compared to that of White students (40.3%) and Asian Americans (54.2%). In 2014, 6% AI/AN earned a bachelor's degree in S & E as compared to 88.4% non-Hispanic or Latinos. In regards to master's degrees, 0.5% AI/AN completed their degrees in comparison to 91.5% non-Hispanic or Latinos (2016). Likewise, only 3% of NA students in Arizona met the ACT STEM college readiness benchmark in 2016 (Vagi, Ross, & Somani, 2018). There are many factors impacting the low rate of NA students pursuing STEM fields. This begins early as NA students in K-12 are not provided with academic and quality experiences in STEM in comparison to non-Natives (Windchief & Brown, 2017). In addition,

NA students grounded in their culture and knowledge may find it difficult to relate to STEM disciplines (Cajete, 2015; Smith, Cech, Metz, Huntoon, & Moyer, 2014). Critical to engaging NA students in STEM is the need for teachers to provide opportunities for students to understand STEM in relation to their Tribal values, knowledge, and goals (Cajete, 2000; Bang & Medin, 2010; Bang & Marin, 2015; Medin & Bang, 2014). Finally, considering the dismal percentages of NAs pursuing STEM disciplines, NA teachers are most likely challenged with seeing themselves as teachers of STEM. Our project will work to strengthen participant's understandings, skills, and confidence through Indigenizing STEM (I-STEM) for NA students.

The project will create an EE ITEP Subplan that will include the standard requirements, additional coursework and project experiences, and opportunities for immersion in Indigenous teaching environments. In addition, a strong focus on STEM disciplines and practices will be infused throughout the entire EE program through courses, Professional Learning Time, and workshops (see pages 18-21 for descriptions on each).

COLLEGES AND UNIVERSITIES RATE AGREEMENT

EIN: 74-2652689

DATE:05/08/2018

ORGANIZATION:

FILING REF.: The preceding agreement was dated 06/13/2017

University of Arizona
University Services Building
888 N. Euclid Ave., Rm. 502F
Tucson, AZ 85721-0158

The rates approved in this agreement are for use on grants, contracts and other agreements with the Federal Government, subject to the conditions in Section III.

SECTION I: INDIRECT COST RATES

RATE TYPES: FIXED FINAL PROV. (PROVISIONAL) PRED. (PREDETERMINED)

EFFECTIVE PERIOD

<u>TYPE</u>	<u>FROM</u>	<u>TO</u>	<u>RATE (%)</u>	<u>LOCATION</u>	<u>APPLICABLE TO</u>
PRED.	07/01/2016	06/30/2020	53.50	On-Campus	Organized Research
PRED.	07/01/2016	06/30/2020	26.00	Off-Campus	Organized Research
PRED.	07/01/2016	06/30/2020	50.00	On-Campus	Instruction
PRED.	07/01/2016	06/30/2020	26.00	Off-Campus	Instruction
PRED.	07/01/2016	06/30/2020	47.00	On-Campus	Other Sponsored Activities
PRED.	07/01/2016	06/30/2020	26.00	Off-Campus	Other Sponsored Activities
PROV.	07/01/2020	Until Amended		(1)	

*BASE

ORGANIZATION: University of Arizona

AGREEMENT DATE: 5/8/2018

Modified total direct costs, consisting of all salaries and wages, fringe benefits, materials, supplies, services, travel, and up to the first \$25,000 of each subaward (regardless of the period of performance of the subawards under the award). Modified total direct costs shall exclude equipment, capital expenditures, charges for patient care, student tuition remission, rental costs of off-site facilities, scholarships, and fellowships, participant support costs and the portion of each subaward in excess of \$25,000. Other items may only be excluded when necessary to avoid a serious inequity in the distribution of indirect costs, and with the approval of the cognizant agency for indirect costs.

(1) Use same rates and conditions as those cited for fiscal year ending June 30, 2020.

ORGANIZATION: University of Arizona

AGREEMENT DATE: 5/8/2018

SECTION I: FRINGE BENEFIT RATES**

<u>TYPE</u>	<u>FROM</u>	<u>TO</u>	<u>RATE (%)</u>	<u>LOCATION</u>	<u>APPLICABLE TO</u>
FIXED	7/1/2018	6/30/2019	31.20	All	UA Employees
FIXED	7/1/2018	6/30/2019	21.00	All	Faculty Ancillary
FIXED	7/1/2018	6/30/2019	15.10	All	Classified Temporary
FIXED	7/1/2018	6/30/2019	2.00	All	Student Employees
FIXED	7/1/2018	6/30/2019	14.10	All	Graduate Assistants
PROV.	7/1/2019	6/30/2020			Use same rates and conditions as those cited for fiscal year ending June 30, 2019.

** DESCRIPTION OF FRINGE BENEFITS RATE BASE:

Salaries and wages including vacation, holiday, sick leave pay and other paid absences.

ORGANIZATION: University of Arizona

AGREEMENT DATE: 5/8/2018

SECTION II: SPECIAL REMARKS

TREATMENT OF FRINGE BENEFITS:

The fringe benefits are charged using the rate(s) listed in the Fringe Benefits Section of this Agreement. The fringe benefits included in the rate(s) are listed below.

TREATMENT OF PAID ABSENCES

Vacation, holiday, sick leave pay and other paid absences are included in salaries and wages and are claimed on grants, contracts, and other agreements as part of the normal cost for salaries and wages. Separate claims for the costs of these paid absences are not made, except where vacation benefit leave is accrued and earned but unused at the termination of a project.

OFF-CAMPUS DEFINITION AND APPLICATION

The off-campus rate is applicable to those projects that are conducted in facilities not owned, leased or operated by the University. If the project is conducted in leased space and lease costs are directly charged to the project, then the off-campus rate must be used. A project is considered off-campus if more than 50% of its salaries and wages are incurred at an off-campus facility. If a project is determined to be off-campus, it shall be considered wholly off-campus. Separate on and off-campus rates will not be used for a single project.

DEFINITION OF EQUIPMENT

Equipment is defined as tangible nonexpendable personal property (including information technology systems) having a useful life of more than one year and an acquisition cost of \$5,000 or more per unit.

The following fringe benefits are included in the fringe benefit rate(s): FICA, WORKERS COMPENSATION, UNEMPLOYMENT COMPENSATION, LIABILITY INSURANCE, HEALTH/ACCIDENT/LIFE/DISABILITY INSURANCE (HALD), DEPENDENT CARE ASSISTANCE, RETIREMENT, RETIREE SICK PAY, TERMINATION LEAVE AND QUALIFIED TUITION REDUCTION PROGRAM FOR EMPLOYEES.

This agreement updates fringe benefits only.

NEXT PROPOSAL DUE DATE

Your next indirect cost proposal based on your fiscal year ending 06/30/19, is due in our office by 12/31/19 and your next fringe benefits proposal based on fiscal year ending 06/30/18 is due by 12/31/18.

ORGANIZATION: University of Arizona

AGREEMENT DATE: 5/8/2018

SECTION III: GENERAL

A. LIMITATIONS:

The rates in this Agreement are subject to any statutory or administrative limitations and apply to a given grant, contract or other agreement only to the extent that funds are available. Acceptance of the rates is subject to the following conditions: (1) Only costs incurred by the organization were included in its facilities and administrative cost pools as finally accepted; such costs are legal obligations of the organization and are allowable under the governing cost principles; (2) The same costs that have been treated as facilities and administrative costs are not claimed as direct costs; (3) Similar types of costs have been accorded consistent accounting treatment; and (4) The information provided by the organization which was used to establish the rates is not later found to be materially incomplete or inaccurate by the Federal Government. In such situations the rate(s) would be subject to renegotiation at the discretion of the Federal Government.

B. ACCOUNTING CHANGES:

This Agreement is based on the accounting system purported by the organization to be in effect during the Agreement period. Changes to the method of accounting for costs which affect the amount of reimbursement resulting from the use of this Agreement require prior approval of the authorized representative of the cognizant agency. Such changes include, but are not limited to, changes in the charging of a particular type of cost from facilities and administrative to direct. Failure to obtain approval may result in cost disallowances.

C. FIXED RATES:

If a fixed rate is in this Agreement, it is based on an estimate of the costs for the period covered by the rate. When the actual costs for this period are determined, an adjustment will be made to a rate of a future year(s) to compensate for the difference between the costs used to establish the fixed rate and actual costs.

D. USE BY OTHER FEDERAL AGENCIES:

The rates in this Agreement were approved in accordance with the authority in Title 2 of the Code of Federal Regulations, Part 200 (2 CFR 200), and should be applied to grants, contracts and other agreements covered by 2 CFR 200, subject to any limitations in A above. The organization may provide copies of the Agreement to other Federal Agencies to give them early notification of the Agreement.

E. OTHER:

If any Federal contract, grant or other agreement is reimbursing facilities and administrative costs by a means other than the approved rate(s) in this Agreement, the organization should (1) credit such costs to the affected programs, and (2) apply the approved rate(s) to the appropriate base to identify the proper amount of facilities and administrative costs allocable to these programs.

BY THE INSTITUTION:

University of Arizona

(INSTITUTION)

(b)(6)

(SIGNATURE)

Gregg Goldman

(NAME)

Sr. Vice President & CFO

(TITLE)

5/10/18

(DATE)

ON BEHALF OF THE FEDERAL GOVERNMENT:

DEPARTMENT OF HEALTH AND HUMAN SERVICES

(AGENCY)

Arif M. Karim -S

Digitally signed by Arif M. Karim -S
DN: c=US, o=U.S. Government, ou=HHS,
ou=PSC, ou=People, cn=Arif M. Karim -S,
0.9.2342.19200300.100.1.1=2000212895
Date: 2018.05.08 16:16:27 -05'00'

(SIGNATURE)

Arif Karim

(NAME)

Director, Cost Allocation Services

(TITLE)

5/8/2018

(DATE) 6990

HHS REPRESENTATIVE: Jeanette Lu

Telephone: (415) 437-7820

Budget Narrative File(s)

* **Mandatory Budget Narrative Filename:**

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

INDIGENOUS TEACHER EDUCATION PROJECT (ITEP)

BUDGET NARRATIVE YEAR 1

1. PERSONNEL— \$69,780— cost basis: salaries have been adjusted upward by 1.02%

Faculty

Valerie Shirley, Ph.D., Project Director (PD); Salary \$75,000; FTE AY = .15; FTE Summer = 1.0 for one month; Assistant Professor of Indigenous Education in the Department of Teaching, Learning and Sociocultural Studies (TLSS). The responsibilities include overseeing and coordinating all aspects of the project which include overall project management, evaluation and reporting; the recruitment of participants; collaborations between UA, partner schools and Tribal education entities; liaison to the advisory group; and working closely with the Project Coordinator, program personnel, mentor teachers, and project participants. No direct costs are requested for administrative tasks.

Jeremy Garcia, Ph.D. Co-Director, Salary \$75,000; FTE AY = .15; FTE Summer = 1.0 for one month; Assistant Professor of Indigenous Education in the Department of TLSS. The responsibilities include assisting the PD with overseeing and coordinating all aspects of the project which include overall project management, evaluation and reporting; the recruitment of participants; collaborations between UA and partner schools; liaison to the advisory group; and working closely with the Project Coordinator, program personnel, mentor teachers, and project participants. No direct costs are requested for administrative tasks.

Project Coordinator; Salary \$40,000; FTE FY = 0.75 The responsibilities of the Project Coordinator are to assist the Project Directors with program activities such as reporting, data collection, analysis, course development, site coordination, serving as a liaison between the UA, partner schools, Tribes and participants, and providing academic and mentoring support to the program participants. The Project Coordinator is to serve as primary contact for project participants affiliated with this program. Less than 5% of the Year 1 direct costs will cover administrative costs by this position.

2. FRINGE BENEFITS – \$21,771 -- cost basis: negotiated rate as of July 1, 2018

The UA's fringe benefit rates are 31.2% for faculty and classified staff. The UA requires that future negotiated ERE rates be used for each year of the project. The ERE rates may change from year to year, and only the current rates are known at this time.

3. TRAVEL — \$4,514 – cost basis: current State and Federal guidelines for UA per diem and mileage.

Annual PD Meeting in DC: Travel funds are requested for the PD to attend the annual Project Directors' meeting in Washington, DC (\$2,000). Funds requested will cover ground and air transportation, lodging, and per diem.

Recruitment: Travel funds are also requested for recruitment to participating schools, community colleges, tribal colleges and tribal communities throughout the state of Arizona. It is estimated that mileage for recruitment will total approximately 5650 miles (\$2,514). The UA approved rate of \$0.445 per mile has been applied to this proposal.

3. EQUIPMENT -- NA

4. SUPPLIES — \$1,500

Instructional Supplies: Instructional supplies needed to set up the start of the program includes materials for recruitment activities, orientation day, curriculum development and daily program activities. It is estimated that the project will need \$1,500 for instructional supplies.

5. CONTRACTUAL -- \$8,561

Consultants: Funds are requested to pay consultants in Indigenous Language Immersion, Indigenous Community-based Science Education, and Culturally Sustaining Pedagogies. Each consultant is a prominent figure in the field of education. The purpose and deliverable of the consultants are to assist the participants in designing curriculum and offering pedagogical strategies that integrate, sustain, and revitalize Indigenous knowledge, culture and language. The Indigenous Community-based Science Education consultant will advise on Indigenizing STEM content in the overall classroom experiences of Native American students. It is estimated that the project will need \$8,561 to pay 3 consultants.

- 1) Indigenous Community Consultant in Language Immersion (Stacey Oberly, Ph.D.). Dr. Stacey Oberly is a prominent person in the field of Indigenous Language Education. Dr. Oberly has worked with our previous participants in the American Indian Language Development Institute (AILDI) and provided them with valuable knowledge and skills in teaching lessons completely in their Indigenous languages. Indigenous teachers have a critical role in contributing to the language revitalization goals of Indigenous communities. Dr. Oberly will work with the project participants for 3 consecutive weekends in September 2019 (1.5 days on Saturday and Sunday). The participants will teach an immersion lesson at the end of September. The funds will cover Travel from Salt Lake City, Utah (round trip airfare \$225 each for 3 trips); Lodging (6 nights at \$93/night); Meals (6 days at \$49/day); and a Consultant Stipend (flat fee of \$3,000 for 3 weekend professional development sessions). The estimated cost is \$4,527.
- 2) Indigenous Community-based Science Education Consultant (Gregory Cajete, Ph.D.). Dr. Gregory Cajete is a prominent person in the field of Indigenous Science Education. Dr. Cajete has worked with our previous participants and provided them with valuable knowledge and skills in developing curriculum around environmental issues impacting Indigenous communities—weaving together traditional ecological knowledge with western science. Dr. Cajete will work with project participants for 2 days in the Fall 2019 semester to design curriculum that integrates Indigenous knowledge with western science. The funds will cover Travel from Albuquerque, New Mexico (round trip airfare \$300 for 1 trip); Lodging (3 nights at \$118/night); Meals (3 days at \$49/day); and a Consultant Stipend (flat fee of \$1,500 for a 2-day professional development session). The estimated cost is \$2,301.

- 3) Culturally Sustaining Pedagogies Consultant (Django Paris, Ph.D.). Dr. Django Paris is a prominent person in the field of critical multicultural and social justice education and currently serves as the Director of the Banks Center for Educational Justice in the College of Education at the University of Washington. Dr. Paris will work with project participants for 1.5 days in the Fall 2019 semester by providing the participants with dialogues, strategies and the integration of the conceptual framework on culturally sustaining pedagogies to assist in curriculum development. The funds will cover Travel from Seattle, Washington (round trip airfare \$350); Lodging (2 nights at \$118/night); Meals (3 days at \$49/day); and a Consultant Stipend (flat fee for 1.5-days professional development session). The estimated cost is \$1,733).

6. CONSTRUCTION – NA

7. OTHER — \$2,500

Postage: Funds for postage are requested for the purpose of mailing recruitment and program materials, letters of acceptance and other project communication and information. It is estimated that the project will need \$500 for postage.

Printing: Funds are requested for printing and reproduction of program and recruitment information, materials for curriculum development, readings and course materials, and new STEM-related materials. It is estimated that the project will need \$2,000 for printing.

8. TOTAL DIRECT COSTS - \$108,626

Section A — Budget Summary list the yearly and total Direct Costs for each budget category.

9. INDIRECT COSTS - \$8,690

Per sponsor stipulation, the restricted IDC rate is 8%.

10. TRAINING STIPENDS—\$187,362

This budget proposal reflects 2 groups of participants at different phases of the Elementary Education (EE) program:

Group 1 will have 3 participants (recruited in Spring 2019)

Group 2 will have 8 participants (recruited in Fall 2019; 11 participants total)

Spring and Fall 2019 Tuition and Fees: Funds are requested to pay tuition and fees for the project participants who will be enrolled full-time in the EE Program. Three students will be recruited in the Spring 2019 academic semester (\$5,926 per student at \$17,778 total tuition and fees) and eight students will be recruited in the Fall 2019. During the Fall 2019 academic semester, both groups' tuition and fees will be supported by the grant funds (11 students at \$6,103 per student; \$67,133 total). It is estimated the project will need \$84,911 for tuition and fees in Spring and Fall 2019 academic semesters.

Summer 2019 Tuition and Fees: Funds are requested to pay Summer tuition and fees for two groups of students (11 total) who are at different phases in the EE Program. Each project participant will be taking pre-requisite and required courses needed to complete the EE Program at a community college (2 courses at \$900 per student; \$9,900 total). It is estimated the project will need \$9,900 for tuition and fees in the Summer 2019 sessions.

Technology: Funds are requested to purchase laptops for eleven students in Spring 2019 and Fall 2019 academic semesters (\$1,200 per student). The purpose of purchasing laptops is to provide the technology for project participants to be successful in completing their required assignments in their courses, field experience, student teaching and first years of teaching. It is estimated the project will need \$13,200 for technology.

Books: Funds are requested to purchase books for eleven students during the Spring, Summer and Fall 2019 academic semesters and sessions (\$600 per semester and \$300 for Summer sessions). It is estimated the project will need \$11,700 for books.

Cost of Living Stipend: Funds are requested to support a monthly stipend of \$650 to cover expenses for living costs during the Spring, Summer, and Fall semesters of Year 1. The total cost for 11 participants is \$52,650 for cost of living stipends.

Dependent Support: Funds are requested to cover a monthly stipend of \$250 for dependent support (8 dependents) during the 2019 Summer session and Fall academic semester. The total cost for 8 dependents is \$14,000.

Student Field Experience: 3 students will be doing field experience in Fall 2019. Travel funds are also requested for student mileage to partner schools for field experience within the state of Arizona. Funds for student mileage covers travel from the university and back. It is estimated that student mileage to field experience sites is 50 miles per student for 15 trips. The UA approved rate of \$0.445 per mile has been applied to this proposal. The total cost for 3 participants' mileage to field experience is \$1,001.

11. TOTAL COSTS - \$304,678

Section A - Budget Summary lists the yearly and Total Costs for each budget category.

**BUDGET NARRATIVE
YEAR 2**

1. PERSONNEL – \$51,155— cost basis: salaries have been adjusted upward by 1.02%

Faculty

Valerie Shirley, Ph.D., Project Director (PD); Salary \$76,500; FTE AY = .15 (.15 contributed by UA College of Education*); FTE Summer = 1.0 for one month (50% contributed by UA College of Education*); Assistant Professor of Indigenous Education in the Department of Teaching, Learning and Sociocultural Studies (TLSS). The responsibilities include overseeing and coordinating all aspects of the project which include overall project management, evaluation and reporting; the recruitment of participants; collaborations between UA, partner schools and Tribal education entities; liaison to the advisory group; and working closely with the Project Coordinator, program personnel, mentor teachers, and project participants. No direct costs are requested for administrative tasks.

* The UA College of Education is committed to the project participants; therefore, they agreed to contribute voluntary cost share due to the increase of students during Year 2.

Jeremy Garcia, Ph.D., Co-Director, Salary \$76,500; FTE AY = .15 (.15 contributed by UA College of Education*); FTE Summer = 1.0 for one month (50% contributed by UA College of Education*); Assistant Professor of Indigenous Education in the Department of TLSS. The responsibilities include assisting the PD with overseeing and coordinating all aspects of the project which include overall project management, evaluation and reporting; the recruitment of participants; collaborations between UA and partner schools; liaison to the advisory group; and working closely with the Project Coordinator, program personnel, mentor teachers, and project participants. No direct costs are requested for administrative tasks.

* The UA College of Education is committed to the project participants; therefore, they agreed to contribute voluntary cost share due to the increase of students during Year 2.

Sara Tolbert, Ph.D.; Salary \$89,760; Summer = 0.25 for one week; Associate Professor of Science Education, Department of TLSS. Dr. Tolbert will co-develop and co-teach the Field-Based STEM training course in Summer 2020. Dr. Tolbert will support the participants in investigating relationships among local and global justice issues, school science, community, and students' experiences, and understanding how opportunities for justice (as "pockets of resistance") are constituted within rigid institutional constraints. Dr. Tolbert's expertise will contribute to designing curriculum materials, pedagogical practices, and assessments in science.

Kristin Gunckel, Ph.D.; Salary \$89,760; Summer = 0.25 for one week; Associate Professor of Science Education, Department of TLSS. Dr. Gunckel will co-develop and co-teach the Field-Based STEM training course in Summer 2020. Dr. Gunckel support the participants in designing curriculum materials, pedagogical practices, and assessments in science. She also teaches courses on environmental justice and STEM practices in education.

Karletta Chief, Ph.D., Salary \$91,971; Summer = 0.25 for one week; Associate Professor and Extension Specialist in the Department of Soil, Water and Environmental Science. Dr. Chief will co-develop and co-teach the Field-Based STEM training course in Summer 2020. Dr. Chief has knowledge and expertise in Indigenous perspectives on sustainable water practices and Climate Change Vulnerability of Native Americans in the Southwest.

Blaine Smith, Ph.D.; Salary \$87,550; Summer = 0.25 for one week; Assistant Professor in New Literacies and Bi/Multilingual Immigrant Learners in the Department of TLSS. Dr. Smith will co-develop and co-teach the Field-Based STEM training course in Summer 2020. Dr. Smith has knowledge and expertise in developing scaffolded instructional strategies to support the integration of digital literacies in the classroom. She is interested in designing innovative multimodal methods for capturing, analyzing, and representing youth's complex digital literacies. Dr. Smith leads the Digital Innovation and Learning Lab in the College of Education and will provide support in technology and digital resources.

Student Teaching Supervisors; Salary \$500 per supervisor (for 3 students). They are hired by the Department to supervise all Elementary Education field experiences. These supervisors are the liaison between the mentor teachers, pre-service teachers and the Elementary Education program. They are also required to ensure the pre-service teachers fulfill the practicum hours required by the Arizona State Department of Education.

Project Coordinator; Salary \$40,800; FTE FY = 0.75 The responsibilities of the Project Coordinator are to assist the Project Directors with program activities such as reporting, data collection, analysis, course development, site coordination, serving as a liaison between the UA, partner schools, Tribes and participants, and providing academic and mentoring support to the program participants. The Project Coordinator is to serve as primary contact for project participants affiliated with this program. Less than 5% of the Year 2 direct costs will cover administrative costs by this position.

2. FRINGE BENEFITS – \$15,051 -- cost basis: negotiated rate as of July 1, 2018

The UA's fringe benefit rates are 31.2% for faculty and classified staff. The UA requires that future negotiated ERE rates be used for each year of the project. The ERE rates may change from year to year, and only the current rates are known at this time.

3. TRAVEL — \$4,315– cost basis: current State and Federal guidelines for UA per diem and mileage.

Annual PD Meeting in DC: Travel funds are requested for the PD to attend the annual Project Directors' meeting in Washington, DC (\$2,000). Funds requested will cover ground and air transportation, lodging, and per diem.

Field-based STEM Training Course: Travel funds are requested for five faculty members to travel during the field-based STEM training course. Five faculty (Valerie Shirley, Jeremy Garcia, Karletta Chief, Kristin Gunckel, and Sara Tolbert) will assist in co-developing and co-teaching this course. This course will include a 4-day field trip to an Indigenous community in Northern

Arizona to learn about environmental issues that affect their lives. The course will focus on developing an understanding of the differences and conflicts between Indigenous and Western relationships to land and environment. Participants will engage in curriculum and pedagogy that integrates, sustains, and revitalizes Indigenous knowledge and values while using STEM practices to stand in solidarity with communities dealing with social and environmental injustices. Digital tools and technology will be integrated into this course. Each faculty member will contribute areas of expertise related to their field of study. The estimated travel cost for 5 faculty includes hotel (3 nights at \$100/night), per diem (\$49/day), and transportation. The total cost for participant travel during this field-based STEM course is \$2,315.

4. EQUIPMENT -- NA

5. SUPPLIES—\$4,200

Instructional Supplies: Instructional supplies needed to continue the program includes supplies for the field-based STEM training, curriculum development, program materials and daily program activities. It is estimated that the project will need \$4,200 for instructional supplies.

Laptop for Coordinator: Funds are requested for supplying the Project Coordinator with a computer to carry out project activities for each project year. It is estimated that the project will need \$1,200 for a new laptop.

6. CONTRACTUAL – \$5,626

Consultants: Funds are requested to pay consultants in Indigenous Community-based Science Education and Indigenous Language Immersion. Each consultant is a prominent figure in the field of education. The purpose and deliverable of the consultants are to assist the participants in designing curriculum and offering pedagogical strategies that integrate, sustain, and revitalize Indigenous knowledge, culture and language. The Indigenous Community-based Science Education consultant will centralize on Indigenizing STEM content in the overall classroom experiences of Native American students. It is estimated that the project will need \$5,626 to pay 3 consultants.

- 1) Indigenous Community-based Science Education Consultant (Fall 2020.). Dr. Megan Bang is a prominent person in the field of Indigenizing STEM. Dr. Bang will work with project participants for 2 days to design curriculum that integrates, sustains, and revitalizes Indigenous knowledge with western science. The funds will cover Travel from Chicago, Illinois (round trip airfare \$600 for 1 trip); Lodging (3 nights at \$118/night); Meals (3 days at \$49/day); and a Consultant Stipend (flat fee of \$1,500 for a 2-day professional development session). The estimated cost is \$2,601.
- 2) Indigenous Community-based Science Education Consultant (Summer 2020). A consultant who will be an Indigenous Arizona resident will work with project participants in the field of Indigenizing STEM. The consultant will provide knowledge, skills and tools to assist participants in understanding different environmental issues impacting Indigenous communities and the STEM-related skills associated with the issues. The funds will cover Travel (round trip mileage \$300 each 1 trip); Lodging (1 night at \$118/night) Meals (2 days at \$49/day); and a Consultant Stipend (flat fee of \$1,000 for a

1-day professional development session). The estimated cost is \$1,516.

- 3) Indigenous Community Consultant in Language Immersion (Spring 2020). A consultant who is a prominent person in the field of Indigenous Language Immersion and Revitalization will be identified in consultation with the American Indian Language Development Institute at the University of Arizona. Indigenous teachers have a critical role in contributing to the language revitalization goals of Indigenous communities; therefore, a language education consultant will work with the project participants for one day. The participants will create a final project using the skills and tools learned from the consultant's workshop. The funds will cover Travel (round trip airfare \$225 for 1 trip); Lodging (2 nights at \$118/night); Meals (2 days at \$49/day); and a Consultant Stipend (flat fee of \$1,000 for a 1-day professional development workshop). The estimated cost is \$1,509.

7. CONSTRUCTION – NA

8. OTHER—\$1,500

Postage: Funds for postage are requested for the purpose of mailing program materials and other project communication and information. It is estimated that the project will need \$500 for postage.

Printing: Funds are requested for printing and reproduction of program information, materials for curriculum development, readings and course materials that require the redesigning aspect of the EE Program. It is estimated that the project will need \$1000 for printing.

9. TOTAL DIRECT COSTS - \$81,847

Section A—Budget Summary list the yearly and total Direct Costs for each budget category.

10. INDIRECT COSTS - \$6,548

Per sponsor stipulation, the restricted IDC rate is 8%.

11. TRAINING STIPENDS—\$311,602

This budget proposal reflects 3 groups of participants at different phases of the EE program:

Group 1 will have 3 participants and will graduate in Spring 2020

Group 2 will have 8 continuing participants

Group 3 will be newly recruited in Fall 2020 with 3 participants (14 participants total)

Spring and Fall 2020 Tuition and Fees: Funds are requested to pay tuition and fees for the project participants who will be enrolled full-time in the EE Program. During the Spring 2020 academic semester, the tuition and fees for 11 participants (Groups 1 & 2; \$6,103 per student) will amount to \$67,133 total. During the Fall 2020 academic semester, the tuition and fees for 11 participants (Groups 2 & 3; \$6,286 per student) will amount to \$69,146 total. It is estimated the project will need \$136,279 for tuition and fees in 2020 Spring and Fall academic semesters.

Summer Tuition and Fees: Funds are requested to pay Summer tuition and fees for 11 participants (Groups 2 & 3) who are at different phases in the EE Program. Each project participant will be taking required courses needed to complete the EE Program at the University of Arizona. One course will be the Field-based STEM Training course and the other course will be a required course needed for certification (2 courses at \$2,900 per student). It is estimated the project will need \$31,900 for tuition and fees in the Summer 2020 sessions.

Books: Funds are requested to purchase books for 11 students during the Spring, Summer and Fall 2020 academic semesters and sessions (\$600 per semester and \$300 for Summer sessions). Group 1 (3 students) will not require books during student teaching. It is estimated the project will need \$13,900 for books.

Cost of Living Stipend: Funds are requested to support a monthly stipend of \$650 to cover expenses for living costs during the Spring, Summer, and Fall semesters of Year 2. The total cost for 11 participants is \$90,350 for cost of living stipends.

Dependent Support: Funds are requested to cover a monthly stipend of \$250 for dependent support (8 dependents) during Year 2 (Spring, Summer and Fall semesters). The total cost for 8 dependents is \$29,000.

Student Teaching: 3 students from Group 1 will be student teaching in Spring 2020. Travel funds are requested for student mileage to partner schools for student teaching within the state of Arizona. Funds for student mileage covers travel from the university and back. It is estimated that student mileage to student teachings sites is 50 miles per student for 30 trips. The UA approved rate of \$0.445 per mile has been applied to this proposal. The total cost for 3 participants' mileage to student teaching sites is \$2,003.

Student Field Experience: 8 students will be doing field experience in Fall 2020. Travel funds are requested for student mileage to partner schools for field experience within the state of Arizona. Funds for student mileage covers travel from the university and back. It is estimated that student mileage to field experience sites is 50 miles per student for 15 trips. The UA approved rate of \$0.445 per mile has been applied to this proposal. The total cost for 8 participants' mileage to field experience site is \$2,670.

Field-based STEM Training: Travel funds are requested for the field-based STEM course in the 2020 Summer session. This course will include a 4-day field trip to an Indigenous community in Northern Arizona to learn about environmental issues that affect their lives. The course will focus on developing an understanding of the differences and conflicts between Indigenous and Western relationships to land and environment. Participants will engage in curriculum and pedagogy that integrates, sustains, and revitalizes Indigenous knowledge and values while using STEM practices to stand in solidarity with communities dealing with social and environmental injustices. Digital tools and technology will be integrated into this course. The estimated cost is: 11 participants at \$500 each (includes hotel, per diem, and transportation). The total cost for participant travel during this field-based STEM course is \$5,500.

12. TOTAL COSTS - \$399,997

Section A - Budget Summary lists the yearly and Total Costs for each budget category.

**BUDGET NARRATIVE
YEAR 3**

1. PERSONNEL— \$84,448— cost basis: salaries have been adjusted upward by 1.02%. In addition, Drs. Shirley and Garcia are expected to receive tenure in 2021, resulting in an increase their salaries.

Faculty

Valerie Shirley, Ph.D., Project Director (PD); Salary \$90,000; FTE AY = .15; FTE Summer = 1.0 for one month; Assistant Professor of Indigenous Education in the Department of Teaching, Learning and Sociocultural Studies (TLSS). The responsibilities include overseeing and coordinating all aspects of the project which include overall project management, evaluation and reporting; the recruitment of participants; collaborations between UA, partner schools and Tribal education entities; liaison to the advisory group; and working closely with the Project Coordinator, program personnel, mentor teachers, and project participants. No direct costs are requested for administrative tasks.

Jeremy Garcia, Ph.D., Co-Director, Salary \$90,000; FTE AY = .15; FTE Summer = 1.0 for one month; Assistant Professor of Indigenous Education in the Department of TLSS. The responsibilities include assisting the PD with overseeing and coordinating all aspects of the project which include overall project management, evaluation and reporting; the recruitment of participants; collaborations between UA and partner schools; liaison to the advisory group; and working closely with the Project Coordinator, program personnel, mentor teachers, and project participants. No direct costs are requested for administrative tasks.

Student Teaching Supervisors; Salary \$500 supervisor (for 11 participants). They are hired by the Department to supervise all Elementary Education field experiences. These supervisors are the liaison between the mentor teachers, pre-service teachers and the Elementary Education program. They are also required to ensure the pre-service teachers fulfill the practicum hours required by the Arizona State Department of Education.

Project Coordinator; Salary \$41,616; FTE FY = 0.75 The responsibilities of the Project Coordinator are to assist the Project Directors with program activities such as reporting, data collection, analysis, course development, site coordination, serving as a liaison between the UA, partner schools, Tribes and participants, and providing academic and mentoring support to the program participants. The Project Coordinator is to serve as primary contact for project participants affiliated with this program. Less than 5% of the Year 3 direct costs will cover administrative costs by this position.

2. FRINGE BENEFITS – \$25,787 -- cost basis: negotiated rate as of July 1, 2018

The UA's fringe benefit rates are 31.2% for faculty and classified staff. The UA requires that future negotiated ERE rates be used for each year of the project. The ERE rates may change from year to year, and only the current rates are known at this time.

3. TRAVEL - \$2,000 - cost basis: current State and Federal guidelines for UA per diem and mileage.

Annual PD Meeting in DC: Travel funds are requested for the PD to attend the annual Project Directors' meeting in Washington, DC (\$2,000). Funds requested will cover ground and air transportation, lodging, and per diem.

4. EQUIPMENT -- NA

5. SUPPLIES—\$1,000

Instructional Supplies: Instructional supplies needed to continue the program includes supplies for curriculum development, program materials, career development activities, materials, graduation commencement and daily program activities. It is estimated that the project will need \$1,000 for instructional supplies.

6. CONTRACTUAL – \$6,768

Consultants: Funds are requested to pay consultants in Indigenous Community-based Science Education and Indigenous Language Immersion. Each consultant is a prominent figure in the field of education. The purpose and deliverable of the consultants are to assist the participants in designing curriculum and offering pedagogical strategies that integrate, sustain, and revitalize Indigenous knowledge, culture, and language. The Indigenous Community-based Science Education consultant will centralize on Indigenizing STEM content in the overall classroom experiences of Native American students. It is estimated that the project will need \$6,768 to pay 3 consultants.

- 1) Indigenous Community-based Science Education Consultant (Spring 2021). A consultant who is a prominent person in the field of Indigenizing STEM will work with project participants for 2 days to design curriculum that integrates Indigenous knowledge with western science. The funds will cover Travel (round trip airfare \$600 for 1 trip); Lodging (3 nights at \$118/night); Meals (3 days at \$49/day); and a Consultant Stipend (flat fee of \$1,500 for a 2-day professional development session). The estimated cost is \$2,601.
- 2) Indigenous Community-based Science Education Consultant (Spring 2021). A consultant who will be an Indigenous Arizona resident will work with project participants in the field of Indigenizing STEM. The consultant will provide knowledge, skills and tools to assist participants in understanding different environmental issues impacting Indigenous communities and the STEM-related skills associated with the issues. The funds will cover Travel (round trip mileage \$300 each 1 trip); Lodging (1 night at \$118/night) Meals (2 days at \$49/day); and a Consultant Stipend (flat fee of \$1,000 for a 1-day professional development session). The estimated cost is \$1,516.
- 3) Indigenous Community Consultant in Language Immersion (Spring 2021). A consultant who is a prominent person in the field of Indigenous Language Immersion and Revitalization strategies will be identified in consultation with the American Indian Language Development Institute at the University of Arizona. Indigenous teachers have a critical role in contributing to the language revitalization goals of Indigenous

communities; therefore, a language education consultant will work with the project participants for one day. The participants will create a final project using the skills and tools learned from the consultant's workshop. The funds will cover Travel (round trip airfare \$225 for 1 trip); Lodging (3 nights at \$118/night); Meals (3 days at \$49/day); and a Consultant Stipend (flat fee of \$2,000 for a 2-day professional development workshop). The estimated cost is \$2,651.

7. CONSTRUCTION – NA

8. OTHER—\$1,500

Postage: Funds for postage are requested for the purpose of mailing program materials and other project communication and information. It is estimated that the project will need \$500 for postage.

Printing: Funds are requested for printing and reproduction of program information, materials for curriculum development, graduation, readings and course materials, and career development activities. It is estimated that the project will need \$1000 for printing.

9. TOTAL DIRECT COSTS -- \$121,503

Section A—Budget Summary list the yearly and total Direct Costs for each budget category.

10. INDIRECT COSTS -- \$9,720

Per sponsor stipulation, the restricted IDC rate is 8%.

11. TRAINING STIPENDS—\$174,765

This budget proposal reflects the last 2 groups of participants at different phases of the EE program:

Group 2 will have 8 continuing participants and will graduate Spring 2021

Group 3 will have 3 continuing participants and will graduate Fall 2021 (11 participants total)

Spring and Fall 2021 Tuition and Fees: Funds are requested to pay tuition and fees for the project participants who will be enrolled full-time in the EE Program. During the Spring 2021 academic semester, the tuition and fees for 11 participants (\$6,286 per student) will amount to \$69,146 total. During the Fall 2021 academic semester, the tuition and fees for 3 participants (Group 3; \$6,475 per student) will amount to \$19,425 total. It is estimated the project will need \$88,571 for tuition and fees in 2021 Spring and Fall academic semesters.

Summer Tuition and Fees: Funds are requested to pay Summer tuition and fees for the last group of 3 participants. Each project participant will be taking required courses needed for certification at the University of Arizona (2 courses at \$2,900 per student). It is estimated the project will need \$8,700 for tuition and fees in the Summer 2021 sessions.

Books: Funds are requested to purchase books for the last group of 3 students during the 2021 Spring semester and Summer sessions (\$600 per semester and \$300 for Summer sessions). Group 2 will not need books during student teaching in Spring 2021. It is estimated the project will need \$2,700 for books.

Cost of Living Stipend: Funds are requested to support a monthly stipend of \$650 to cover expenses for living costs during the Spring, Summer, and Fall semesters of Year 3. The total cost for 11 participants is \$47,450 for cost of living stipends.

Dependent Support: Funds are requested to cover a monthly stipend of \$250 for dependent support (11 dependents) during Year 3 (Spring, Summer and Fall semesters). The total cost for 11 dependents is \$19,000.

Student Teaching: 8 students from Group 2 will be student teaching in Spring 2021. Travel funds are requested for student mileage to partner schools for student teaching within the state of Arizona. Funds for student mileage covers travel from the university and back. It is estimated that student mileage to student teachings sites is 50 miles per student for 30 trips. The UA approved rate of \$0.445 per mile has been applied to this proposal. The total cost for 8 participants' mileage to student teaching sites is \$5,340.

Student Field Experience: 3 students in Group 3 will be doing field experience in Fall 2021. Travel funds are requested for student mileage to partner schools for field experience within the state of Arizona. Funds for student mileage covers travel from the university and back. It is estimated that student mileage to field experience sites is 50 miles per student for 15 trips. The UA approved rate of \$0.445 per mile has been applied to this proposal. The total cost for 8 participants' mileage to field experience site is \$1,001.

Student Teaching: 3 students from Group 3 will be student teaching in Fall 2021. Travel funds are requested for student mileage to partner schools for student teaching within the state of Arizona. Funds for student mileage covers travel from the university and back. It is estimated that student mileage to student teachings sites is 50 miles per student for 30 trips. The UA approved rate of \$0.445 per mile has been applied to this proposal. The total cost for 8 participants' mileage to student teaching sites is \$2,003.

12. TOTAL COSTS - \$305,988

Section A - Budget Summary lists the yearly and Total Costs for each budget category.

BUDGET NARRATIVE YEAR 4

1. PERSONNEL— \$71,757— cost basis: salaries have been adjusted upward by 1.02%

Faculty

Valerie Shirley, Ph.D., Project Director (PD); Salary \$91,800; FTE AY = .15 FTE; Summer = 1.0 for one month; Assistant Professor of Indigenous Education in the Department of Teaching, Learning and Sociocultural Studies (TLSS). The responsibilities include overseeing and coordinating all aspects of the project which include overall project management, evaluation and reporting; securing employment for participants; induction services for graduates; collaborations between UA, partner schools and Tribal education entities; liaison to the advisory group; and working closely with the Project Coordinator, program personnel, mentor teachers, and graduates. Year 4 activities will focus on Induction. The PD will work with established programs in schools. The PD will establish a committee to work on creating Induction programs in schools that currently do not have Induction programs in place. The PD will visit each participant at their school site two times a year and have regular communication with participants via Zoom and/or phone. No direct costs are requested for administrative tasks.

Jeremy Garcia, Ph.D. Co-Director, Salary \$91,800; FTE AY = 0.00; FTE; Summer = 1.0 for one month; Assistant Professor of Indigenous Education in the Department of TLSS. The responsibilities include assisting the PD overseeing and coordinating all aspects of the project which include overall project management, evaluation and reporting; securing employment for participants; induction services for graduates; collaborations between UA, partner schools and Tribal education entities; liaison to the advisory group; and working closely with the Project Coordinator, program personnel, mentor teachers, and graduates. Year 4 activities will focus on Induction. The Co-Director will work with established programs in schools. The Co-Director will establish a committee to work on creating Induction programs in schools that currently do not have Induction programs in place. The Co-Director will visit each participant at their school site two times a year and have regular communication with participants via Zoom and/or phone. No direct costs are requested for administrative tasks.

Kristin Gunckel, Ph.D.; Salary \$93,386; FTE FY = .37; Summer = 0.25 for one week; Associate Professor of Science Education, Department of TLSS. Dr. Gunckel will offer professional development during Induction by supporting and mentoring the project participants during their first year of teaching. In Year 4 Gunckel will help students design curriculum materials, pedagogical practices, and assessments in science. Gunckel also teaches courses on environmental justice and STEM practices in education.

Blaine Smith, Ph.D.; Salary \$87,550; FTE FY = .40; Summer = 0.25 for one week; Assistant Professor in New Literacies and Bi/Multilingual Immigrant Learners in the Department of TLSS. Dr. Smith will offer professional development during Induction by supporting and mentoring the project participants during their first year of teaching. In Year 4 Smith will support the participants in integrating digital literacies and technology into the classroom.

Erin Turner, Ph.D.; Salary \$106,121; FTE FY = .33; Summer = 0.25 for one week; Professor in Mathematics Education in the Department of TLSS. Dr. Turner will offer professional development during Induction by supporting and mentoring the project participants during their first year of teaching. In Year 4 Turner will support the participants in understanding how mathematics instruction can draw upon children's multiple mathematical funds of knowledge (e.g., their mathematical thinking, as well as their cultural, linguistic and/or community-based knowledge and experiences) in ways that support mathematical understanding and a sense of agency.

Sheilah Nicholas, Ph.D.; Salary \$90,203; FTE FY = .38; Summer = 0.25 for one week; Associate Professor in the Department of TLSS. Dr. Nicholas will offer professional development during Induction by supporting and mentoring the project participants during their first year of teaching. Dr. Nicholas will support the participants in Indigenous Culture-Based Education, Language and Culture, Oral Traditions, and Language Minority Education. She is also a Faculty Instructor for the American Indian Language Development Institute (AILDI) and Immersion Instructor-Consultant for the Indigenous Language Institute; therefore, her expertise in language education will contribute to the participants' pedagogy in the classroom.

Reading Specialist; Salary \$95,509; FTE FY = .36; Summer = 0.25 for one week; Department of TLSS. The Reading Specialist will offer professional development during Induction by supporting and mentoring the project participants during their first year of teaching. In Year 4 the Reading Specialist will continue to support the participants in designing curriculum materials, pedagogical practices, and assessments in reading.

Project Coordinator; Salary \$42,448; FTE FY = 0.75 The responsibilities of the Project Coordinator are to assist the Project Directors with program activities such as reporting, data collection, analysis, course development, site coordination, serving as a liaison between the UA, partner schools, Tribes and participants, and providing professional and mentoring support to the participants. The Project Coordinator is to serve as primary contact for project participants affiliated with this program. Less than 5% of the Year 4 direct costs will cover administrative costs by this position.

2. FRINGE BENEFITS – \$21,141 -- cost basis: negotiated rate as of July 1, 2018

The UA's fringe benefit rates are 31.2% for faculty and classified staff. The UA requires that future negotiated ERE rates be used for each year of the project. The ERE rates may change from year to year, and only the current rates are known at this time.

3. TRAVEL— \$7,435– cost basis: current State and Federal guidelines for UA per diem and mileage.

Annual PD Meeting in DC: Travel funds are requested for the PD to attend the annual Project Directors' meeting in Washington, DC (\$2,000). Funds requested will cover ground and air transportation, lodging, and per diem.

Visits to Individual Participants at School Sites: Travel funds are requested for the Project

Director and Co-Director to visit each participant during their first year of teaching. The participants will be teaching in schools located across the state of Arizona; therefore, funds are requested to support mileage, per diem, and lodging. It is estimated that the project will need \$2,000 for traveling to each participant's school site.

Regional Professional Development/Focus Group Sessions: Travel funds are requested for the Project Director and Co-Director to hold regional focus group sessions with groups of participants who will be teaching in the northeastern, northwestern, and southern regions in the state of Arizona. The focus group sessions will be held two times a year in each region. The purpose of these focus group sessions is to offer professional support in curriculum and instructional strategies; STEM-focused strategies, resources, and tools; culturally sustaining pedagogies; and other topics generated by the participants. Funds are requested to support mileage, per diem, and lodging for the 2 project directors. It is estimated that the project will need \$3,435 for the regional focus group sessions.

4. EQUIPMENT -- NA

5. SUPPLIES—\$2,500

Instructional Supplies: Supplies are needed to for induction services and activities. This includes supplies that will be required continue creating materials to support teaching (i.e., curriculum materials, professional development books, mentor support, children's books, etc.). Funding for supplies will also cover costs to gather follow-up information and data on graduates, mentors, evaluation and reporting. It is estimated that the project will need \$2,500 for instructional supplies.

6. CONTRACTUAL – \$7,250

Southern Arizona Research, Science and Engineering Foundation (SARSEF): SARSEF will provide participants with Professional Development courses in STEM for \$250.

Mentors: Funds are requested for mentors. Mentors have the capacity to help new teachers learn about the school, community, various curriculum and behavior programs, instructional strategies, family and community partnerships, and offer professional support. The mentors will support the participants in their first two years of teaching will be paid \$500 each. It is estimated that the project will need \$7,000 for mentors.

7. CONSTRUCTION – NA

8. OTHER—\$1,000

Printing: Funds are requested for printing and reproduction of program information, materials for curriculum development, professional development materials, data analysis, evaluation and reports, and course materials that contribute to STEM teaching and learning. It is estimated that the project will need \$1,000 for printing.

9. TOTAL DIRECT COSTS - \$111,083

Section A—Budget Summary list the yearly and total Direct Costs for each budget category.

10. INDIRECT COSTS -- \$8,887

Per sponsor stipulation, the restricted IDC rate is 8%.

11. TRAINING STIPENDS—NA

12. TOTAL COSTS - \$119,969

Section A - Budget Summary lists the yearly and Total Costs for each budget category.

**BUDGET NARRATIVE
YEAR 5**

1. PERSONNEL— \$73,092— cost basis: salaries have been adjusted upward by 1.02%

Faculty

Valerie Shirley, Ph.D., Project Director (PD); Salary \$93,636; FTE AY = 0.00 FTE; Summer = 1.0 for one month; Assistant Professor of Indigenous Education in the Department of Teaching, Learning and Sociocultural Studies (TLSS). The responsibilities include overseeing and coordinating all aspects of the project which include overall project management, evaluation and reporting; securing employment for participants; induction services for graduates; collaborations between UA, partner schools and Tribal education entities; liaison to the advisory group; and working closely with the Project Coordinator, program personnel, mentor teachers, and graduates. Year 5 activities will focus on Induction. The PD will continue to work with established programs in schools. The PD will visit each participant at their school site two times a year and have regular communication with participants via Zoom and/or phone. No direct costs are requested for administrative tasks.

Jeremy Garcia, Ph.D. Co-Director, Salary \$93,636; FTE AY = .15; FTE; Summer = 1.0 for one month; Assistant Professor of Indigenous Education in the Department of TLSS. The responsibilities include assisting the PD overseeing and coordinating all aspects of the project which include overall project management, evaluation and reporting; securing employment for participants; induction services for graduates; collaborations between UA, partner schools and Tribal education entities; liaison to the advisory group; and working closely with the Project Coordinator, program personnel, mentor teachers, and graduates. Year 5 activities will focus on Induction. The Co-Director will continue to work with established programs in schools. The Co-Director will visit each participant at their school site two times a year and have regular communication with participants via Zoom and/or phone. No direct costs are requested for administrative tasks.

Kristin Gunckel, Ph.D.; Salary \$95,254; FTE FY = .36; Summer = 0.25 for one week; Associate Professor of Science Education, Department of TLSS. Dr. Gunckel will offer professional development during Induction by supporting and mentoring the project participants during their second year of teaching. In Year 5 Gunckel will support the participants in designing curriculum materials, pedagogical practices, and assessments in science. She also teaches courses on environmental justice and STEM practices in education.

Blaine Smith, Ph.D.; Salary \$89,301; FTE FY = .39; Summer = 0.25 for one week; Assistant Professor in New Literacies and Bi/Multilingual Immigrant Learners in the Department of TLSS. Dr. Smith will offer professional development during Induction by supporting and mentoring the project participants during their second year of teaching. In Year 5 Smith will support the participants in integrating digital literacies and technology into the classroom.

Sheilah Nicholas, Ph.D.; Salary \$92,007; FTE FY = .38; Summer = 0.25 for one week; Associate Professor in the Department of TLSS. Dr. Nicholas will offer professional development during

Induction by supporting and mentoring the project participants during their second year of teaching. Dr. Nicholas will support the participants in Indigenous Culture-Based Education, Language and Culture, Oral Traditions, and Language Minority Education. She is also a Faculty Instructor for the American Indian Language Development Institute (AILDI) and Immersion Instructor-Consultant for the Indigenous Language Institute; therefore, her expertise in language education will contribute to the participants' pedagogy in the classroom.

Reading Specialist; Salary \$97,419; FTE FY = .36; Summer = 0.25 for one week; Department of TLSS. The Reading Specialist will offer professional development during Induction by supporting and mentoring the project participants during their second year of teaching. S/he will continue to support the participants in designing curriculum materials, pedagogical practices, and assessments in reading.

Marcy Wood, Ph.D.; Salary \$95,254; FTE FY = .36; Summer = 0.25 for one week; Professor in Mathematics Education in the Department of TLSS. Dr. Wood will offer professional development during Induction by supporting and mentoring the project participants during their first year of teaching. Dr. Wood will continue to support the participants in understanding and teaching Complex Instruction in mathematics during their second year of teaching.

Project Coordinator; Salary \$43,297; FTE FY = 0.75 The responsibilities of the Project Coordinator are to assist the Project Directors with program activities such as reporting, data collection, analysis, course development, site coordination, serving as a liaison between the UA, partner schools, Tribes and participants, and providing professional and mentoring support to the participants. The Project Coordinator is to serve as primary contact for project participants affiliated with this program. Less than 5% of the Year 5 direct costs will cover administrative costs by this position.

2. FRINGE BENEFITS – \$22,179 -- cost basis: negotiated rate as of July 1, 2018

The UA's fringe benefit rates are 31.2% for faculty and classified staff. The UA requires that future negotiated ERE rates be used for each year of the project. The ERE rates may change from year to year, and only the current rates are known at this time.

3. TRAVEL— \$7,435– cost basis: current State and Federal guidelines for UA per diem and mileage.

Annual PD Meeting in DC: Travel funds are requested for the PD to attend the annual Project Directors' meeting in Washington, DC (\$2,000). Funds requested will cover ground and air transportation, lodging, and per diem.

Visits to Individual Participants at School Sites: Travel funds are requested for the Project Director and Co-Director to visit each participant during their second year of teaching. The participants will be teaching in schools located across the state of Arizona; therefore, funds are requested to support mileage, per diem, and lodging. It is estimated that the project will need \$2,000 for traveling to each participant's school site.

Regional Professional Development/Focus Group Sessions: Travel funds are requested for the Project Director and Co-Director to hold regional focus group sessions with groups of participants who will be teaching in the northeastern, northwestern, and southern regions in the state of Arizona. The focus group sessions will be held two times a year in each region. The purpose of these focus group sessions is to offer professional support in curriculum and instructional strategies; STEM-focused strategies, resources, and tools; culturally sustaining pedagogies; and other topics generated by the participants. Funds are requested to support mileage, per diem, and lodging for the 2 project directors. It is estimated that the project will need \$3,435 for the regional focus group sessions.

4. EQUIPMENT -- NA

5. SUPPLIES—\$800

Instructional Supplies: Funds requested for supplies are needed to continue induction services and activities. This includes supplies that will be required continue creating materials to support teaching (i.e., curriculum materials, professional development books, mentor support, children’s books, etc.). Funding for supplies will also cover costs to gather follow-up information and data on graduates, mentors, evaluation and reporting. It is estimated that the project will need \$1,000 for instructional supplies.

6. CONTRACTUAL – \$7,250

Southern Arizona Research, Science and Engineering Foundation (SARSEF): SARSEF will provide participants with Professional Development courses in STEM for \$250.

Mentors: Funds are requested for mentors. Mentors have the capacity to help new teachers learn about the school, community, various curriculum and behavior programs, instructional strategies, family and community partnerships, and offer professional support. The mentors will support the participants in their first two years of teaching (\$500 each). It is estimated that the project will need \$7,000 for mentors.

7. CONSTRUCTION – NA

8. OTHER—\$355

Printing: Funds are requested for printing and reproduction of program information, materials for curriculum development, professional development materials, data analysis, evaluation and reports, and course materials that contribute to STEM teaching and learning. It is estimated that the project will need \$355 for printing in Year 5.

9. TOTAL DIRECT COSTS - \$111,111

Section A—Budget Summary list the yearly and total Direct Costs for each budget category.

10. INDIRECT COSTS -- \$8,889

Per sponsor stipulation, the restricted IDC rate is 8%.

11. TRAINING STIPENDS—NA

12. TOTAL COSTS - \$120,000

Section A - Budget Summary lists the yearly and Total Costs for each budget category.