

To: Ashcroft, Tyler[tashcrof@blm.gov]; Donald Hoffheins[dhoffhei@blm.gov]
From: Ginn, Allison
Sent: 2017-02-08T11:00:55-05:00
Importance: Normal
Subject: Fwd: NLCS Funding Opportunity Announcement - Utah Projects
Received: 2017-02-08T11:01:52-05:00
[FA Evaluation Individual Scoring Worksheet.docx](#)
[FA Instructions and Example Evaluation Rating Factors.docx](#)
[UtahNLCSGrantProposals.xlsx](#)
[GRANT12328827 UT ACE.zip](#)
[GRANT12328145 UT University of Southern California.zip](#)
[GRANT12327822 UT University of Utah.zip](#)
[GRANT12327304 UT Washington State University.zip](#)
[GRANT12325434 UT The Pennsylvania State University.zip](#)
[GRANT12325388 UT Southern Utah University.zip](#)
[GRANT12321940 UT Natural History Museum, Universtiy of Utah.zip](#)
[NLCS_ScienceStrategy.pdf](#)

Don-

It would be good to know whether MtFO can financially support some of these projects out of the \$3.7 mil in advance of the Grant Evaluation Committee review on 2/21. Because there are only seven projects, it's reasonable to think that WO may be able to fund one or two of the BENM submissions.

Regards,

Allison Ginn
National Conservation Lands Program Lead
BLM Utah State Office
801-539-4053

----- Forwarded message -----

From: Ginn, Allison <aginn@blm.gov>
Date: Wed, Feb 8, 2017 at 8:57 AM
Subject: NLCS Funding Opportunity Announcement - Utah Projects
To: "Anderson-Gale, Lora" <landersongale@blm.gov>, Dana Backer <dbacker@blm.gov>, William Stevens <bpsteven@blm.gov>, Donald Hoffheins <dhoffhei@blm.gov>
Cc: Melanie Beckstead <mbeckstead@blm.gov>, Aaron Curtis <acurtis@blm.gov>

Hello!

In November, BLM released an [IM for the FY17 NLCS Scientific Studies Support Program funding opportunities](#). Applications were submitted to Grants.gov by 2/2. The WO performed an initial screen for eligibility and has provided the eligible applications for our review (attached and also available at <https://blmspace.blm.doi.net/blm/blmfa/SitePages/Home.aspx>).

The new process for the Conservation Lands Scientific Studies Support Program requires us to convene an evaluation committee to review grant applications submitted within BLM-Utah. You are receiving this email because your District or Monument Manager nominated you to participate in this grant evaluation committee.

We have seven projects for consideration under the NLCS Scientific Studies Funding Opportunity (see attached Excel for brief overview). Two projects are within Grand Staircase-Escalante NM (one of these also focuses on WSAs), four are in Bears Ears NM and one supports a statewide agreement for WSAs.

The amount to be awarded is \$397K agency-wide. BLM-Utah expects to receive a total of \$40-80K in funding through this FOA. We are also able to contribute additional funds from Utah's budget, as available.

I need each of you to complete an Individual Evaluation Scoring Sheet (attached and also on the sharepoint) for each of the seven projects. I'd appreciate it if this task could be completed by COB on **2/16**. For reference, the NLCS Science Strategy is attached and Utah's 5-year NLCS Strategy is available here:

[NLCS_UtahStrategyGuide_2014](#)

I'd like to have a **conference call on 2/21** (or 2/22 as a backup). Please advise of your availability on the 21st.

I must submit a ranked list of projects, approved by the State Director, to WO by **2/24**.

Regards,

Allison Ginn
National Conservation Lands Program Lead
BLM Utah State Office
801-539-4053

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.
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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.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL <input type="text" value="Dan Nordquist"/>	TITLE <input type="text" value="AV/Director & Authorized Sign"/>
APPLICANT ORGANIZATION <input type="text" value="Washington State University"/>	DATE SUBMITTED <input type="text" value="02/01/2017"/>

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Budget Narrative File(s)

* **Mandatory Budget Narrative Filename:**

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[View Optional Budget Narrative](#)

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

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

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

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

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

Statement for Loan Guarantees and Loan Insurance

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

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

* APPLICANT'S ORGANIZATION	
American Conservation Experience	
* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Prefix: <input type="text"/>	* First Name: <input type="text" value="Shane"/> Middle Name: <input type="text"/>
* Last Name: <input type="text" value="Barrow"/>	Suffix <input type="text"/>
* Title: <input type="text" value="National Internship Manager"/>	
* SIGNATURE: <input type="text" value="Chris Baker"/>	* DATE: <input type="text" value="02/02/2017"/>

ASSURANCES - NON-CONSTRUCTION PROGRAMS

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<p>SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL</p> <p>Chris Baker</p>	<p>TITLE</p> <p>National Internship Manager</p>
<p>APPLICANT ORGANIZATION</p> <p>American Conservation Experience</p>	<p>DATE SUBMITTED</p> <p>02/02/2017</p>

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DEPARTMENT OF THE NAVY
OFFICE OF NAVAL RESEARCH
875 NORTH RANDOLPH STREET
SUITE 1425
ARLINGTON, VA 22203-1985

IN REPLY REFER TO:

Agreement Date: June 14, 2016
[Supersedes Agreement Dated: June 24, 2015]

NEGOTIATION AGREEMENT

INSTITUTION: **THE PENNSYLVANIA STATE UNIVERSITY**
UNIVERSITY PARK, PA 16801-3857

The Fringe Benefit rates contained herein are for use on grants, contracts and/or other agreements issued or awarded to the Pennsylvania State University (PSU) by all Federal agencies in accordance with the cost principles mandated by 2 CFR 200. These rates shall be used for forward pricing and billing purposes for the PSU's Fiscal Years 2017 and 2018. This rate agreement supersedes all previous rate agreements for Fiscal Years 2017 and 2018.

Section I: RATES - TYPE: **FIXED (Fixed)**
PROVISIONAL (Prov)

<u>TYPE</u>	<u>FROM</u>	<u>TO</u>	<u>RATE</u>	<u>BASE</u>	<u>APPLICABLE TO</u>	<u>LOCATION</u>
Fixed	7/1/16	6/30/17	40.20%	(a)	Salaries	All
Fixed	7/1/16	6/30/17	7.80%	(b)	Wages	All
Fixed	7/1/16	6/30/17	15.40%	(c)	Graduate Assistants	All
Fixed	7/1/16	6/30/17	0.10%	(d)	Students	All
Fixed	7/1/16	6/30/17	25.70%	(e)	Postdoctoral Students	All
Prov	7/1/17	6/30/18	40.20%	(a)	Salaries	All
Prov	7/1/17	6/30/18	7.80%	(b)	Wages	All
Prov	7/1/17	6/30/18	15.40%	(c)	Graduate Assistants	All
Prov	7/1/17	6/30/18	0.10%	(d)	Students	All
Prov	7/1/17	6/30/18	25.70%	(e)	Postdoctoral Students	All

DISTRIBUTION BASES

- (a) Salaries, excluding graduate assistants, postdoctoral scholars, fixed term II and visiting faculty appointments not receiving full benefits.
- (b) Wages and those salaries not receiving full benefits, exclusive of graduate assistants, student wages, and postdoctoral scholar salaries.
- (c) Graduate assistant salaries.
- (d) Student wages.
- (e) Postdoctoral Scholar salaries.

SECTION II - GENERAL TERMS AND CONDITIONS

A. LIMITATIONS: Use of the rates set forth under Section I is subject to any statutory or administrative limitations and is applicable to a given grant, contract or other agreement only to the extent that funds are available and consistent with any and all limitations of cost clauses or provisions, if any, contained therein. Acceptance of any or all of the rates agreed to herein is predicated upon all the following conditions: (1) that no costs other than those incurred by the grantee/contractor were included in its indirect cost pool as finally accepted and that all such costs are legal obligations of the grantee/contractor and allowable under governing cost principles; (2) that the same costs that have been treated as indirect costs are not claimed as direct costs; (3) that similar types of costs, in like circumstances, have been accorded consistent accounting treatment; (4) that the information provided by the contractor/grantee, which was used as the basis for the acceptance of the rates agreed to herein and expressly relied upon by the Government in negotiating the said rates, is not subsequently found to be materially incomplete or inaccurate.

B. ACCOUNTING CHANGES: The rates contained in Section I of this agreement are based on the accounting system in effect at the time this agreement was negotiated. Changes to the method(s) of accounting for costs, which affects the amount of reimbursement resulting from the use of these rates, require the written approval of the authorized representative of the cognizant negotiating agency for the Government prior to implementation of any such changes. Such changes include but are not limited to changes in the charging of a particular type of cost from indirect to direct. Failure to obtain such approval may result in subsequent cost disallowances.

C. FIXED RATES WITH CARRY-FORWARD PROVISIONS: The fixed rates in this agreement are based on estimates of the costs for FY 2017. When actual costs for the period are determined, an adjustment will be made to the rates of a future year to recognize the difference between the FY 2017 estimated costs used to establish the fixed rates and the negotiated actual FY 2017 costs.

D. CARRY FORWARD AMOUNTS: The following estimated carry-forward amounts were considered in the establishment of the FY 2017 rates:

	<u>FY2015</u> <u>Estimated CFW</u>
Salaries	(\$11,693,127)
Wages	(\$125,400)
Graduate Assistants	(\$238,217)
Students	(\$28,863)
Postdoctoral Students	(\$142,351)

() denotes over-recovery

E. PROVISIONAL RATES: The provisional rates contained in this agreement are subject to unilateral amendment by the Government or bilateral amendment by the contracting parties at any time.

F. USE BY OTHER FEDERAL AGENCIES: The rates set forth in Section I hereof were negotiated in accordance with and under the authority set forth in 2 CFR 200. Accordingly, such rates shall be applied to the extent provided in such regulations to grants, contracts and other transactions to which 2 CFR 200 is applicable, subject to any limitations in part A of this section. Copies of this document may be provided by either party to other Federal agencies to provide such agencies with documentary notice of this agreement and its terms and conditions.

Accepted:

FOR PENNSYLVANIA STATE UNIVERSITY:

FOR THE U.S. GOVERNMENT:



 Joseph J. Donsecz
 Associate Vice President for Finance and
 Corporate Controller



 Linda B. Shipp
 Contracting Officer

6/14/16

 Date

6-16-16

 Date

For information concerning this agreement contact:
 Betty Tingle, Contract Specialist
 Office of Naval Research

Phone: (703) 696-7742
 E-mail: betty.tingle@navy.mil

Project Narrative File(s)

* Mandatory Project Narrative File Filename:

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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="02/02/2017"/>	4. Applicant Identifier: <input type="text"/>	
5a. Federal Entity Identifier: <input type="text"/>		5b. Federal Award Identifier: <input type="text"/>
State Use Only:		
6. Date Received by State: <input type="text"/>	7. State Application Identifier: <input type="text"/>	
8. APPLICANT INFORMATION:		
* a. Legal Name: <input type="text" value="American Conservation Experience"/>		
* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="37 1473291"/>	* c. Organizational DUNS: <input type="text" value="1453726160000"/>	
d. Address:		
* Street1: <input type="text" value="2900 North Fort Valley Rd"/>	Street2: <input type="text"/>	
* City: <input type="text" value="Flagstaff"/>	County/Parish: <input type="text"/>	
* 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="86001 8310"/>	
e. Organizational Unit:		
Department Name: <input type="text"/>	Division Name: <input type="text"/>	
f. Name and contact information of person to be contacted on matters involving this application:		
Prefix: <input type="text"/>	* First Name: <input type="text" value="Shane"/>	
Middle Name: <input type="text"/>		
* Last Name: <input type="text" value="Barrow"/>		
Suffix: <input type="text"/>		
Title: <input type="text"/>		
Organizational Affiliation: <input type="text"/>		
* Telephone Number: <input type="text" value="801 946 2722"/>	Fax Number: <input type="text"/>	
* Email: <input type="text" value="sbarrow@usaconservation.org"/>		

Application for Federal Assistance SF-424			
* 9. Type of Applicant 1: Select Applicant Type:			
<input type="text" value="M: Nonprofit with 501C3 IRS Status (Other than Institution of Higher Education)"/>			
Type of Applicant 2: Select Applicant Type:			
<input type="text"/>			
Type of Applicant 3: Select Applicant Type:			
<input type="text"/>			
* Other (specify):			
<input type="text"/>			
* 10. Name of Federal Agency:			
<input type="text" value="Bureau of Land Management"/>			
11. Catalog of Federal Domestic Assistance Number:			
<input type="text" value="15.231"/>			
CFDA Title:			
<input type="text" value="Fish, Wildlife and Plant Conservation Resource Management"/>			
* 12. Funding Opportunity Number:			
<input type="text" value="L17AS00001"/>			
* Title:			
<input type="text" value="BLM FY2017 Bureau wide National Conservation Lands Scientific Studies Support Program"/>			
13. Competition Identification Number:			
<input type="text"/>			
Title:			
<input type="text"/>			
14. Areas Affected by Project (Cities, Counties, States, etc.):			
<input type="text"/>	<input type="button" value="Add Attachment"/>	<input type="button" value="Delete Attachment"/>	<input type="button" value="View Attachment"/>
* 15. Descriptive Title of Applicant's Project:			
<input type="text" value="WSA Monitoring WildSnap Development"/>			
Attach supporting documents as specified in agency instructions.			
<input type="button" value="Add Attachments"/>	<input type="button" value="Delete Attachments"/>	<input type="button" value="View Attachments"/>	

Application for Federal Assistance SF-424	
16. Congressional Districts Of:	
* a. Applicant <input type="text" value="AZ01"/>	* b. Program/Project <input type="text" value="UT01"/>
Attach an additional list of Program/Project Congressional Districts if needed.	
<input type="text"/>	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
17. Proposed Project:	
* a. Start Date: <input type="text" value="04/01/2017"/>	* b. End Date: <input type="text" value="03/31/2022"/>
18. Estimated Funding (\$):	
* a. Federal	<input type="text" value="25,000.00"/>
* b. Applicant	<input type="text" value="0.00"/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value="25,000.00"/>
* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?	
<input type="checkbox"/> a. This application was made available to the State under the Executive Order 12372 Process for review on <input type="text"/> .	
<input type="checkbox"/> b. Program is subject to E.O. 12372 but has not been selected by the State for review.	
<input checked="" type="checkbox"/> c. Program is not covered by E.O. 12372.	
* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If "Yes", provide explanation and attach	
<input type="text"/>	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="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)	
<input checked="" type="checkbox"/> ** 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: <input type="text"/>	* First Name: <input type="text" value="Shane"/>
Middle Name: <input type="text"/>	
* Last Name: <input type="text" value="Barrow"/>	
Suffix: <input type="text"/>	
* Title: <input type="text" value="National Internship Manager"/>	
* Telephone Number: <input type="text" value="801 946 2722"/>	Fax Number: <input type="text"/>
* Email: <input type="text" value="sbarrow@usaconservation.org"/>	
* Signature of Authorized Representative: <input type="text" value="Chris Baker"/>	* Date Signed: <input type="text" value="02/02/2017"/>

Project Narrative File(s)

* Mandatory Project Narrative File Filename:

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

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>John W. Hanold</p>	<p>TITLE</p> <p>Associate VP for Research</p>
<p>APPLICANT ORGANIZATION</p> <p>PENNSYLVANIA STATE UNIVERSITY UNIV PARK</p>	<p>DATE SUBMITTED</p> <p>01/31/2017</p>

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CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

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

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

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

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

Statement for Loan Guarantees and Loan Insurance

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

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

* APPLICANT'S ORGANIZATION	
Southern Utah University	
* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Prefix: <input style="width: 80px;" type="text"/>	* First Name: <input style="width: 150px;" type="text" value="Julia"/> Middle Name: <input style="width: 150px;" type="text"/>
* Last Name: <input style="width: 250px;" type="text" value="Anderson"/>	Suffix <input style="width: 80px;" type="text"/>
* Title: <input style="width: 250px;" type="text" value="Director of Sponsored Projects"/>	
* SIGNATURE: <input style="width: 250px;" type="text" value="Karen Wilson"/>	* DATE: <input style="width: 150px;" type="text" value="01/31/2017"/>

BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 01/31/2019

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Cultural Resource Management	15.224	\$	\$	20,941.00	7,531.00	28,472.00
2.						
3.						
4.						
5. Totals		\$	\$	20,941.00	7,531.00	28,472.00

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Tracking Number: GRANT12328145

Funding Opportunity Number: L17AS00001 Received Date: Feb 02, 2017 02:12:39 PM EST

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	Cultural Resource Management				
a. Personnel	\$ 10,000.00	\$	\$	\$	\$ 10,000.00
b. Fringe Benefits					
c. Travel	9,371.00				9,371.00
d. Equipment					
e. Supplies	4,780.00				4,780.00
f. Contractual					
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)	24,151.00				\$ 24,151.00
j. Indirect Charges	4,321.00				\$ 4,321.00
k. TOTALS (sum of 6i and 6j)	\$ 28,472.00	\$	\$	\$	\$ 28,472.00
7. Program Income	\$	\$	\$	\$	\$

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SECTION C - NON-FEDERAL RESOURCES					
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS	
8. Cultural Resource Management	\$ 7,031.00	\$	\$ 500.00	\$ 7,531.00	
9.					
10.					
11.					
12. TOTAL (sum of lines 8-11)	\$ 7,031.00	\$	\$ 500.00	\$ 7,531.00	
SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 20,941.00	\$ 5,236.00	\$ 5,235.00	\$ 5,235.00	\$ 5,235.00
14. Non-Federal	\$ 7,531.00	1,882.00	1,883.00	1,883.00	1,883.00
15. TOTAL (sum of lines 13 and 14)	\$ 28,472.00	\$ 7,118.00	\$ 7,118.00	\$ 7,118.00	\$ 7,118.00
SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT					
(a) Grant Program	FUTURE FUNDING PERIODS (YEARS)				
	(b)First	(c) Second	(d) Third	(e) Fourth	
16.	\$	\$	\$	\$	
17.					
18.					
19.					
20. TOTAL (sum of lines 16 - 19)	\$	\$	\$	\$	
SECTION F - OTHER BUDGET INFORMATION					
21. Direct Charges: \$24,151.00		22. Indirect Charges: \$4,321.00			
23. Remarks: MTDC INDIRECT COST RATE 26% per Federal Agreement attached to Budget Narrative					

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Project Narrative File(s)

* Mandatory Project Narrative File Filename:

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

BUREAU OF LAND MANAGEMENT
 Financial Assistance (Cooperative Agreements)



BUDGET DETAIL
 (Suggested Format)

Instructions: Using the estimated amounts listed on your SF 424A Budget Information form, use this worksheet to provide details of those estimated costs. In the Narrative Boxes, explain the purpose of each cost and provide sufficient detail so costs may be analyzed for reasonableness.

Agreement or Funding Opportunity No.: L17AS00001 / L12AC20378 Date: 01/23/2017
 Organization Name: Natural History Museum of Utah, University of Utah
 Project Title: Critical Dinosaur Fossil Resource Protection, Inventory, and Salvage: Late Cretaceous...

A) PERSONNEL COSTS (SF-424A Object Class Category 6a.)					
Estimated costs of salaries/wages, <u>not</u> including fringe benefits, paid to Recipient employees working directly on this agreement. Indicate Key Personnel with an asterisk (*), provide more detail in the Narrative Box if needed.					
Name & Title or Position Title	Salary or Wage	Months or Hours	Matching Funds (if applicable)	BLM Funds	Personnel Justification
*Randall Irmis, Curator and PI		.5 mo		\$2848	
*Tylor Birthisel, Field Manager		2 mo		\$3866	
NHMU Paleo trained volunteers	\$22.51/hr	800	\$18,008		
<i>Example: James Smith, Executive Director</i>	<i>\$20,000.00/Mo.</i>	<i>3 Mos.</i>	<i>\$15,000.00</i>	<i>\$45,000.00</i>	
A) TOTAL PERSONNEL COSTS: (SF 424A Object Class Category 6a. Personnel)			\$18008	\$6714	
Budget justification of costs: The Principal Investigator (PI) Irmis from NHMU will dedicate at least a month of his working time toward achieving the goals outlined herein. The field managers will spend at least two months directing fieldwork during the summer of 2017. This allows completion of the goals set forth in the proposal. NHMU Paleontology trained volunteers spend at least 800 hours of time in the field and lab dedicated to the proposed project. Calculated at equivalent to an hourly rate of \$22.51 for the Independent Sector, these volunteer hours are worth the equivalent of \$18008 as matching funds.					

B) FRINGE BENEFIT COSTS (SF-424A Object Class Category 6b.)				
Estimated costs of fringe benefits (e.g. health insurance, vacation, FICA, etc.) paid to Recipient employees working on this agreement. List employees/positions below, and their fringe benefit rates as a percentage (%) of their salaries. List what are considered fringe benefits in the Narrative Box.				
Name & Title/Position	Salary/Wage Base (BLM Amounts budgeted in Section A above)	Fringe Benefit Rate (%)	Matching Funds (if applicable)	BLM Funds
Randall Irmis, Curator and PI	\$2848	40%		\$1139
Tylor Birthisel, Field Manager	\$3866	40%		\$1547
<i>Example: James Smith, Executive Director</i>	\$20,000.00	30%	\$0.00	\$6,000.00
B) TOTAL FRINGE BENEFIT COSTS: (SF 424A Object Class Category 6b. Fringe Benefits)			\$	\$2686
<u>Budget Justification of Costs:</u> University of Utah fringe benefits are calculated at 40% of base salary for all employees above 0.75 FTE.				

C) TRAVEL COSTS (SF-424A Object Class Category 6c.)						
<p>SUB TOTAL, LODGING & PER DIEM The cost of lodging & meals while traveling for agreement activities. Give details and purpose of the travel in the Narrative Box. Current Federal rates may be found online at: http://www.gsa.gov/portal/category/21287.</p>						
Proposed Travel (Lodging & Per Diem)		No. of People	No. of Days	Cost Per Person Per Day	Matching Funds (if applicable)	BLM Funds
To:						
From:						
To:						
From:						
To:						
From:						
To:	<i>Example: Portland, OR</i>	1	2	\$150.00/Day	\$100.00	\$200.00
From:	<i>Eugene, OR</i>					
<p>SUB TOTAL, MILEAGE REIMBURSEMENT The cost of reimbursement for estimated mileage traveled in recipient vehicles for agreement activities. Give details and the purpose of the travel in the Narrative Box. Current Federal mileage reimbursement rates may be found online at: www.GSA.gov. NOTE: Mileage reimbursement rates include all vehicle costs, i.e. fuel, insurance, maintenance, etc.</p>						
Proposed Travel (Mileage Reimbursement)		No. of Miles	No. of Trips	Cost Per Mile	Matching Funds (if applicable)	BLM Funds
To:						
From:						
To:						
From:						
To:						
From:						
To:	<i>Example: Portland, OR</i>	110 Miles	2	\$0.10/Mile	\$0.00	\$22.00
From:	<i>Eugene, OR</i>					
<p>SUB TOTAL, OTHER TRAVEL COSTS The costs of airfare, bus fare, car rental, etc., required for agreement activities. Explain the details and the purpose of the costs in the Narrative Box.</p>						
Proposed Other (Travel Reimbursement)		Type	Cost	No.	Matching Funds (if applicable)	BLM Funds
To:						
From:						
To:						
From:						
To:						
From:						
C) TOTAL TRAVEL COSTS:						
(SF 424A Object Class Category 6c. Travel)					\$	\$
<i>Budget justification of costs::</i>						

D) EQUIPMENT COSTS (SF-424A Object Class Category 6d. Equipment)				
The cost of equipment purchased for use on this agreement. Equipment is defined as items with a useful life of more than one (1) year and a cost of \$5,000+ per unit. If your organization has a written policy for purchasing equipment, please submit a copy with your application. Explain the need and purpose of the equipment in the Narrative Box below.				
Equipment	Quantity	Cost per Unit	Matching Funds (if applicable)	BLM Funds
<i>Example: John Deere Compact Tractor</i>	1	\$17,500.00	\$7,500.00	\$10,000.00
D) TOTAL EQUIPMENT COSTS: (SF 424A Object Class Category 6d. Equipment)			\$	\$
<u>Budget justification of costs:</u>				

E) SUPPLY COSTS (SF-424A Object Class Category 6e. Supplies)				
Estimated costs of materials and supplies used directly on this agreement, e.g. safety glasses, work gloves, office supplies, etc. If your organization has a written policy for purchasing supplies, please submit a copy with your application. Explain the purpose of the costs in the Narrative Box below.				
Item	Quantity	Cost per Unit	Matching Funds (if applicable)	BLM Funds
Excavation supplies and consumables				\$1500
Mapping supplies				\$250
Camping supplies				\$1000
Vehicle fuel				\$1500
Food for field crew				\$2000
Collections cabinets and curation supplies				\$2000
<i>Example: Work Gloves, Leather</i>	6	\$10.00/Pair	\$50.00	\$10.00
E) SUPPLY COST TOTAL: (SF 424A Object Class Category 6e. Supplies)			\$	\$8250
<u>Budget justification of costs:</u>				
NHMU only requests funds for consumables and minor replacement of supplies that wear out from normal use every two three years, as well as vehicle fuel to travel to/from fieldwork. We also request partial funding to house and curate fossils collected as part of this project (drawers and specimen boxes). Amounts are based on actual costs incurred for 2016 GSENM fieldwork.				

F) CONTRACTUAL COSTS (SF-424A Object Class Category 6f. Contractual)			
Estimated costs of contracted/sub contracted services and sub grant/recipient awards. If your organization has a written contracting policy, please submit a copy with your application. Provide contractor names, if available, and explain the details and purposes of the costs in the Narrative Box below. NOTE: Calculation of your Indirect Costs may be affected by contracted and/or pass through expenses. See Section J) INDIRECT COSTS, for more information.			
Contractor Name, Type, etc.	Cost	Matching Funds (if applicable)	BLM Funds
<i>Example: Ace Delivery Service (Yearly Contract)</i>	\$2,500.00	\$0.00	\$2,500.00
F) CONTRACTUAL COST TOTAL: (SF 424A Object Class Category 6f. Contractual)		\$	\$
<i>Budget justification of costs:</i>			

G) CONSTRUCTION COSTS (SF-424A Object Class Category 6g. Construction)			
The estimated costs of construction. "Construction" is the intent to construct, alter, or repair (including dredging, excavating, and painting) buildings, structures, or other real property FAR Part 2 Definitions. Explain the details and purpose of the costs in the Narrative Box below.			
Contractor: Name/Type/Organization/Etc.	Cost	Matching Funds (if applicable)	BLM Funds
G) CONSTRUCTION COST TOTAL: (SF 424A Object Class Category 6g. Construction)		\$	\$
<i>Budget justification of costs:</i>			

H) OTHER COSTS (SF-424A Object Class Category 6h. Other)			
Estimated costs which don't fit any other Object Class Category, e.g. duplicating and printing costs, postage and freight, rental of equipment, etc. Explain the details and purpose of the costs in the Narrative Box below.			
Item	Cost	Matching Funds (if applicable)	BLM Funds
<i>Example: Ace Equipment Rental (Post-Hole Digger, 4 Days)</i>	\$25/Day	\$0.00	\$100.00
H) OTHER COSTS TOTAL: (SF 424A Object Class Category 6h. Other)		\$	\$
<i>Budget justification of costs:</i>			

I) TOTAL DIRECT COSTS (SF-424A Object Class Category 6i. Sum of 6a.-6h.)		
The total of all direct costs applicable to this project.		
Total Direct Costs	Matching Funds (if applicable)	BLM Funds
I) TOTAL DIRECT COSTS: (SF 424A Object Class Category 6i. Total, Sum of 6a. 6h.)	\$18008	\$17650

J) INDIRECT COSTS (SF-424A Object Class Category 6j. Indirect Charges)

Indirect costs are expenses which cannot be readily identified and charged to a particular project or agreement, e.g. building rent, utilities, office supplies, etc. Such costs are charged to the project as a percentage of the Direct Costs (items A through H above) and this percentage is called the Indirect Cost Rate. If your organization has a Negotiated Indirect Cost Rate Agreement (NICRA) please submit a copy of the agreement with your application. If your organization has no NICRA, the BLM may allow a "de minimis" indirect cost rate of up to 10% of your Modified Total Direct Costs (MTDC), which are your Direct Costs excluding sub grant and sub contract costs in excess of \$25,000. See 2 CFR 200.68 Modified Total Direct Cost (MTDC) and 2 CFR 200.414(f) Indirect (F&A) Costs for more information.

If your organization is a Cooperative Ecosystems Studies Unit (CESU) partner, your indirect cost rate will be 17.5% of your NICRA determined indirect cost base.

Use the Narrative Box below to explain how you calculated your indirect cost base and resulting indirect costs.

Indirect Cost Rate to be used on this Grant (%):	17.5%		
Indirect Cost Base for this Grant:	\$17650		
Total Indirect Costs	Matching Funds (if applicable)	BLM Funds	
J) TOTAL INDIRECT COSTS: (SF 424A Object Class Category 6j. Indirect Charges)	\$2683	\$3089	

Budget justification of costs:

University of Utah is a CESU partner, and thus indirect costs are calculated at 17.5%. The University of Utah will match with unrecovered F&A at 15.2% of direct costs = \$2683

K) TOTALS (SF-424A Object Class Category 6k. TOTALS)

The sum total of all Direct and Indirect Costs (Sum of 6i. & 6j.) applicable to this agreement.

Total Project Costs	Matching Funds (if applicable)	BLM Funds
K) TOTAL COSTS: (SF 424A Object Class Category 6k. TOTALS)	\$20691	\$20739

I certify that to the best of my knowledge the costs detailed above are correct and complete and for the purposes set forth in the associated application for Federal Assistance.

Randall Irmis, Curator and Associate Professor
 Name & Title of Person Completing Budget



DEPARTMENT OF HEALTH AND HUMAN SERVICES

Program Support Center
Financial Management Service
Division of Cost Allocation

DCA Western Field Office
90 7th Street, Suite 4-600
San Francisco, CA 94103
PHONE: (415) 437-7820
FAX: (415) 437-7823
E-MAIL: dcast@psc.hhs.gov

JUL 18 2013

Michael Beach
Controller
Southern Utah University
351 West Center
Cedar City, UT 84720

Dear Mr. Beach:

A copy of an indirect cost Negotiation Agreement is attached. This Agreement reflects an understanding reached between your organization and a member of my staff concerning the rate(s) that may be used to support your claim for indirect costs on grants and contracts with the Federal Government. Please have the Agreement signed by a duly authorized representative of your organization and return it to me BY EMAIL OR FAX, retaining the copy for your files. We will reproduce and distribute the Agreement to the appropriate awarding organizations of the Federal Government for their use.

An indirect cost proposal together with required supporting information must be submitted to this office for each fiscal year in which your organization claims indirect costs under grants and contracts awarded by the Federal Government. Thus, your next proposal based on your fiscal year ending 06/30/16 is due in our office by 12/31/16.

Sincerely,

A handwritten signature in black ink, appearing to read "Arif Karim", written over a horizontal line.

Arif Karim, Director
Division of Cost Allocation

Attachment

PLEASE SIGN AND RETURN THE NEGOTIATION AGREEMENT BY EMAIL OR FAX

COLLEGES AND UNIVERSITIES RATE AGREEMENT

EIN: 87-6000481
 ORGANIZATION:
 Southern Utah University
 351 West Center
 Cedar City, UT 84720

DATE: 07/11/2013
 FILING REF.: The preceding
 agreement was dated
 05/11/2009

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: Facilities And Administrative 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.	07/01/2013	06/30/2017	45.00	On-Campus	All Programs
PRED.	07/01/2013	06/30/2017	19.80	Off-Campus	All Programs
PROV.	07/01/2017	06/30/2018	45.00	On-Campus	All Programs
PROV.	07/01/2017	06/30/2018	19.80	Off-Campus	All Programs

*BASE

Direct salaries and wages including all fringe benefits.

ORGANIZATION: Southern Utah University

AGREEMENT DATE: 7/11/2013

SECTION II: SPECIAL REMARKS

TREATMENT OF FRINGE BENEFITS:

The fringe benefits are specifically identified to each employee and are charged individually as direct costs. The directly claimed fringe benefits 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 are not made for the cost of these paid absences.

OFF-CAMPUS DEFINITION: For all activities performed in facilities not owned by the institution and to which rent is directly allocated to the project(s) the off-campus rate will apply. Grants or contracts will not be subject to more than one F&A cost rate. If more than 50% of a project is performed off-campus, the off-campus rate will apply to the entire project.

DEFINITION OF EQUIPMENT

Equipment is defined as tangible nonexpendable personal property having a useful life of more than one year and an acquisition cost of \$1,000 or more per unit.

The following fringe benefits are treated as direct costs:
FICA, WORKERS COMPENSATION, AND HEALTH/LIFE/DENTAL INSURANCE.

ORGANIZATION: Southern Utah University

AGREEMENT DATE: 7/11/2013

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 Office of Management and Budget Circular A-21, and should be applied to grants, contracts and other agreements covered by this Circular, subject to any limitations in A above. The organization may provide copies of this 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:

Southern Utah University

(INSTITUTION)

(SIGNATURE)

Dorian Page

(NAME)

Vice Pres. for Finance & Admin

(TITLE)

7/18/13

(DATE)

ON BEHALF OF THE FEDERAL GOVERNMENT:

DEPARTMENT OF HEALTH AND HUMAN SERVICES

(AGENCY)

(SIGNATURE)

Arif Karim

(NAME)

Director

(TITLE)

7/11/2013

(DATE) 1102

HHS REPRESENTATIVE: Karen Wong

Telephone: (415) 437-7820

Key Contacts Form

*** Applicant Organization Name:**

PENNSYLVANIA STATE UNIVERSITY UNIV PARK

Enter the individual's role on the project (e.g., project manager, fiscal contact).

*** Contact 1 Project Role:**

PI

Prefix:

Dr.

*** First Name:**

Brendan

Middle Name:

Derrick

*** Last Name:**

Taff

Suffix:

Title:

Research Assistant Professor

Organizational Affiliation:

PENNSYLVANIA STATE UNIVERSITY UNIV PARK

*** Street1:**

801 Donald Ford Building

Street2:

*** City:**

University Park

County:

*** State:**

PA: Pennsylvania

Province:

*** Country:**

USA: UNITED STATES

*** Zip / Postal Code:**

16802

*** Telephone Number:**

814 865 1851

Fax:

*** Email:**

bdt3@psu.edu

Key Contacts Form

*** Applicant Organization Name:**

PENNSYLVANIA STATE UNIVERSITY UNIV PARK

Enter the individual's role on the project (e.g., project manager, fiscal contact).

*** Contact 2 Project Role:** Authorized Official, Dir Sponsored Programs

Prefix: Dr.

* First Name: John

Middle Name: W.

* Last Name: Hanold

Suffix:

Title: Associate VP for Research

Organizational Affiliation:

PENNSYLVANIA STATE UNIVERSITY UNIV PARK

* Street1: 0110 Technology Center

Street2:

* City: University Park

County: Centre

* State: PA: Pennsylvania

Province:

* Country: USA: UNITED STATES

* Zip / Postal Code: 16802 7000

* Telephone Number: 814 865 1372

Fax: 814 865 3377

* Email: osp@psu.edu

Key Contacts Form

*** Applicant Organization Name:**

PENNSYLVANIA STATE UNIVERSITY UNIV PARK

Enter the individual's role on the project (e.g., project manager, fiscal contact).

*** Contact 3 Project Role:** Financial Contact

Prefix:

* First Name: Richard

Middle Name: E

* Last Name: Killian

Suffix:

Title:

MGR RES ACCTG

Organizational Affiliation:

PENNSYLVANIA STATE UNIVERSITY UNIV PARK

* Street1: 0401J RIDER BL

Street2:

* City: UNIVERSITY PARK

County:

* State: PA: Pennsylvania

Province:

* Country: USA: UNITED STATES

* Zip / Postal Code: 16802

* Telephone Number: 865 7525

Fax:

* Email: rek149@psu.edu

Key Contacts Form

*** Applicant Organization Name:**

PENNSYLVANIA STATE UNIVERSITY UNIV PARK

Enter the individual's role on the project (e.g., project manager, fiscal contact).

*** Contact 4 Project Role:** College Grants & Contracts Manager

Prefix: Mrs.

* First Name: Niki

Middle Name: Lynn

* Last Name: Page

Suffix:

Title: Director of Grants & Contracts

Organizational Affiliation:

PENNSYLVANIA STATE UNIVERSITY UNIV PARK

* Street1: 0334 Health & Human Develop Bldg.

Street2:

* City: University Park

County: Centre

* State: PA: Pennsylvania

Province:

* Country: USA: UNITED STATES

* Zip / Postal Code: 16802 0000

* Telephone Number: (814) 865 9203

Fax: (814) 863 8698

* Email: nlg4@psu.edu

**INDIVIDUAL EVALUATION
SCORING SHEET**

Funding Opportunity Announcement No. L17AS00001

Date: _____

Grants.gov Project # and Applicant Legal Business Name: _____

Evaluator: _____

Evaluation Factors	Ratings (see attached description or use your own method)
<p><u>Project aligns with National Conservation Lands unit and BLM State office information needs</u> (60/100 Points) Notes:</p>	
<p><u>BLM staff has the capacity to support project</u> (20/100 Points) Notes:</p>	
<p><u>Past Performance</u> (10/100 Points) Notes:</p>	
<p><u>Active Cooperative Agreement</u> (10/100 Points) Notes:</p>	

Project Narrative File(s)

* Mandatory Project Narrative File Filename:

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

BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 01/31/2019

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. L17AS00001	15.231	\$	\$	24,874.00	\$	24,874.00
2.						
3.						
4.						
5. Totals		\$	\$	24,874.00	\$	24,874.00

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Tracking Number: GRANT12327822

Funding Opportunity Number: L17AS00001 Received Date: Feb 02, 2017 11:52:51 AM EST

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	L17AS00001				
a. Personnel	\$ 12,500.00	\$	\$	\$	\$ 12,500.00
b. Fringe Benefits	1,740.00				1,740.00
c. Travel	6,929.00				6,929.00
d. Equipment					
e. Supplies					
f. Contractual					
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)	21,169.00				\$ 21,169.00
j. Indirect Charges	3,705.00				\$ 3,705.00
k. TOTALS (sum of 6i and 6j)	\$ 24,874.00	\$	\$	\$	\$ 24,874.00
7. Program Income	\$	\$	\$	\$	\$

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SECTION C - NON-FEDERAL RESOURCES					
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS	
8. <input style="width: 90%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	
9. <input style="width: 90%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	
10. <input style="width: 90%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	
11. <input style="width: 90%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	
12. TOTAL (sum of lines 8-11)	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	
SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ <input style="width: 80%; text-align: right; value: 24,874.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 24,874.00;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>
14. Non-Federal	\$ <input style="width: 80%;" type="text"/>	<input style="width: 80%; text-align: right; value: 0.00;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>
15. TOTAL (sum of lines 13 and 14)	\$ <input style="width: 80%; text-align: right; value: 24,874.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 24,874.00;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>	\$ <input style="width: 80%;" type="text"/>
SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT					
(a) Grant Program	FUTURE FUNDING PERIODS (YEARS)				
	(b) First	(c) Second	(d) Third	(e) Fourth	
16. <input style="width: 90%; font-size: small; font-family: monospace; value: L17AS00001;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 24,874.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 25,000.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 25,000.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 25,000.00;" type="text"/>	
17. <input style="width: 90%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	
18. <input style="width: 90%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	
19. <input style="width: 90%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	<input style="width: 80%;" type="text"/>	
20. TOTAL (sum of lines 16 - 19)	\$ <input style="width: 80%; text-align: right; value: 24,874.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 25,000.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 25,000.00;" type="text"/>	\$ <input style="width: 80%; text-align: right; value: 25,000.00;" type="text"/>	
SECTION F - OTHER BUDGET INFORMATION					
21. Direct Charges: <input style="width: 80%; text-align: right; value: \$21,169;" type="text"/>		22. Indirect Charges: <input style="width: 80%; text-align: right; value: \$3,705;" type="text"/>			
23. Remarks: <input style="width: 95%;" type="text"/>					

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Key Contacts Form

* Applicant Organization Name:

University of Southern California

Enter the individual's role on the project (e.g., project manager, fiscal contact).

* Contact 1 Project Role: Principal Investigator

Prefix: Dr.

* First Name: Adam

Middle Name:

* Last Name: Huttenlocker

Suffix:

Title: Assistant Professor

Organizational Affiliation:

University of Southern California

* Street1: 1333 San Pablo St., BMT 301

Street2: Dept. of Cell and Neurobiology

* City: Los Angeles

County:

* State: CA: California

Province:

* Country: USA: UNITED STATES

* Zip / Postal Code: 90089 9235

* Telephone Number: (323) 442 2752

Fax:

* Email: (b) (6) @gmail.com

Key Contacts Form

* Applicant Organization Name:

University of Southern California

Enter the individual's role on the project (e.g., project manager, fiscal contact).

* Contact 2 Project Role: Co Principal Investigator

Prefix: Dr.

* First Name: Stuart

Middle Name:

* Last Name: Sumida

Suffix: Ph.D.

Title: Professor

Organizational Affiliation:

California State University, San Bernardino

* Street1: 5500 University Parkway

Street2: Department of Biology

* City: San Bernardino

County:

* State: CA: California

Province:

* Country: USA: UNITED STATES

* Zip / Postal Code: 92407 2318

* Telephone Number: (909) 537 5346

Fax:

* Email: ssumida@csusb.edu



Bureau of Land Management
 Utah State Office
 Grants & Cooperative Agreements



BUDGET DETAIL
EPIC 2017 031

Instructions: Starting with the same budget amounts as listed on the SF-424A Budget Information form, use this worksheet to show details of the estimated costs. Provide enough information that costs may be analyzed for reasonableness as compared to costs or work of similar size and scope. Use the Narrative boxes as necessary to explain each cost.

Agreement or Funding Opportunity No.: L17AS00001 Date: 2-Feb-17

Organization Name: American Conservation Experience

Project Title: WSA Monitoring - WildSnap - Development

A) PERSONNEL (SF 424A Object Class Category 6a.)

The cost of salaries & wages, not including fringe benefits, paid to Recipient employees working directly on this agreement. Indicate Key Personnel with an asterisk (). Provide more detail in the Narrative Box if needed.*

Name & Title or Position Title	No. of Personnel	Salary or Wage	Hours, Days, Weeks, Months, or Other	Matching Funds (if applicable)	BLM Funds
Software Development Lead	1	\$70/hour	150	\$ -	\$ 10,500.00
Software Integration Intern	1	\$25/hour	125	\$ -	\$ 3,125.00
Position 3	0	\$0/	0	\$ -	\$ -
Position 4	0	\$0/	0	\$ -	\$ -
Position 5	0	\$0/	0	\$ -	\$ -
Position 6	0	\$0/	0	\$ -	\$ -
Position 7	0	\$0/	0	\$ -	\$ -
A) TOTAL PERSONNEL COSTS:					
(SF-424A Object Class Category 6a. Personnel)				\$ -	\$ 13,625.00

Narrative: One Software Development Lead will contribute 150 hours of time at \$70/hour and one Software Integration Intern will contribute 125 hours at \$25/hour to develop the WSA monitoring app WildSnap.

B) FRINGE BENEFITS (SF 424A Object Class Category 6b.)				
<p><i>The cost of fringe benefits, such as FICA, workers comp, state payroll taxes, etc., paid to Recipient employees working on this agreement. List employees or positions below, and their fringe benefit rates as percentages of their salaries. List what are included as fringe benefits in the Narrative Box.</i></p>				
Name & Title/Position	Salary/Wage Base (BLM Amounts budgeted in Section A above)	Fringe Benefit Rate (%)	Matching Funds (if applicable)	BLM Funds
Software Development Lead	\$ 10,500.00	18%	\$ -	\$ 1,890.00
Software Integration Intern	\$ 3,125.00	18%	\$ -	\$ 562.50
Position 3	\$ -	18%	\$ -	\$ -
Position 4	\$ -	18%	\$ -	\$ -
Position 5	\$ -	18%	\$ -	\$ -
Position 6	\$ -	18%	\$ -	\$ -
Position 7	\$ -	18%	\$ -	\$ -
B) TOTAL FRINGE BENEFIT COSTS:				
(SF-424A Object Class Category 6b. Fringe Benefits)			\$ -	\$ 2,452.50
<p><i>Narrative</i> : Fringe rate calculation covers all liability, workers compensation, vehicle, payroll insurance, FICA, Social Security and Medicare expenses associated.</p>				

C) TRAVEL (SF 424A Object Class Category 6c.)					
<p><u>LODGING & PER DIEM</u> The cost of lodging & meals while travelling for agreement activities. Give details and purpose of the travel in the Narrative Box. Current Federal rates may be found online at: http://www.gsa.gov/portal/category/21287.</p>					
Proposed Travel, Lodging & Per Diem	No. of People	No. of days	Cost Per Person	Matching Funds (if applicable)	BLM Funds
To:					
From:					
To:					
From:					
To:					
From:					
<p><u>MILEAGE REIMBURSEMENT</u> The cost of reimbursement for estimated mileage traveled for agreement activities. Give details and the purpose of the travel in the Narrative Box. Current Federal mileage reimbursement rates may be found online at: www.GSA.gov.</p>					
Proposed Travel, Lodging & Per Diem	No. of Miles	No. of Trips	Cost Per Mile	Matching Funds (if applicable)	BLM Funds
To:					
From:					
To:					
From:					
To:					
From:					
<p><u>OTHER TRAVEL COSTS</u> - The costs of airfare, bus fare, car rental, etc., required for agreement activities. Explain the details and the purpose of the costs in the Narrative Box.</p>					
Proposed Other Travel Reimbursement	Type	Cost	No.	Matching Funds (if applicable)	BLM Funds
To:	Intern 1				
From:	Transportation Stipend	\$ -			\$ -
To:	Intern 2				
From:	Transportation Stipend	\$ -			\$ -
To:	Intern 3				
From:	Transportation Stipend	\$ -			\$ -
To:	Intern 4				
From:	Transportation Stipend	\$ -			\$ -
C) TOTAL TRAVEL COSTS:					
(SF-424A Object Class Category 6c. Travel)				\$ -	\$ -
<i>Narrative : N/A</i>					

D) EQUIPMENT (SF 424A Object Class Category 6d. Equipment)				
The cost of equipment (items with a useful life of more than one (1) year and a cost of \$5,000+ per unit). Explain the need and purpose of the equipment in the Narrative box below.				
Equipment	Quantity	Cost per Unit	Matching Funds (if applicable)	BLM Funds
Equipment 1 Description	0	\$0.00	\$ -	\$ -
Equipment 2 Description	0	\$0.00	\$ -	\$ -
Equipment 3 Description	0	\$0.00	\$ -	\$ -
D) TOTAL EQUIPMENT COSTS:				
(SF-424A Object Class Category 6d. Equipment)			\$ -	\$ -
<i>Narrative</i> : N/A				

E) SUPPLIES (SF 424A Object Class Category 6e. Supplies)				
The cost of materials and supplies used directly on this project, such as safety glasses, work gloves, office supplies, etc. Explain the details and purpose in the Narrative box below.				
Item	Quantity	Cost per Unit	Matching Funds (if applicable)	BLM Funds
Uniform	0	\$75.00	\$ -	\$ -
Nametag	0	\$8.00	\$ -	\$ -
iPad Equipment	2	\$1,000.00	\$ -	\$ 2,000.00
Supply 4 Description	0	\$0.00	\$ -	\$ -
Supply 5 Description	0	\$0.00	\$ -	\$ -
E) SUPPLIES COST TOTAL:				
(SF-424A Object Class Category 6e. Supplies)			\$ -	\$ 2,000.00
<i>Narrative</i> : ACE will provide two complete iPad setups for this project, including all software, cases, batteries and chargers.				

F) CONTRACTUAL (SF 424A Object Class Category 6f. Contractual)			
The cost of contracted services and/or sub-recipient agreements. Provide names and explain the details and purpose of the costs in the Narrative box below. <u>NOTE</u> : Contracts must be competed per the Uniform Administrative Rules.			
Contractor Name, Type, etc.	Cost	Matching Funds (if applicable)	BLM Funds
F) CONTRACTUAL COST TOTAL:			
(SF-424A Object Class Category 6f. Contractual)		\$ -	\$ -
<i>Narrative</i> : N/A			

G) CONSTRUCTION COSTS (SF 424A Object Class Category 6g. Construction)			
The cost of construction.			
Contractor: Name/Type/Organization/Etc.	Cost	Matching Funds (if applicable)	BLM Funds
*** NOT APPLICABLE ***			
G) CONSTRUCTION COST TOTAL:		\$ N/A	\$ N/A
(SF-424A Object Class Category 6g. Construction)			
<i>Narrative</i> : N/A			

H) OTHER (SF 424A Object Class Category 6h. Other)			
Costs that don't fit any other Object Class Category, such as duplicating and printing, postage and freight, rented equipment, etc. Explain the details and purpose in the Narrative box below.			
Item	Cost	Matching Funds (if applicable)	BLM Funds
Software Development	\$ -	\$ -	\$ -
Background Check	\$ -	\$ -	\$ -
Other 3 Description	\$ -	\$ -	\$ -
Other 4 Description	\$ -	\$ -	\$ -
Other 5 Description	\$ -	\$ -	\$ -
Other 6 Description	\$ -	\$ -	\$ -
Other 7 Description	\$ -	\$ -	\$ -
Other 8 Description	\$ -	\$ -	\$ -
Other 9 Description	\$ -	\$ -	\$ -
Other 10 Description	\$ -	\$ -	\$ -
H) OTHER COSTS TOTAL:		\$ -	\$ -
(SF-424A Object Class Category 6h. Other)			
<i>Narrative</i> : N/A			

I) TOTAL DIRECT CHARGES (SF 424A Object Class Category 6i. Sum of 6a. 6h.)		
The total of all direct costs applicable to this project.		
	Matching Funds (if applicable)	BLM Funds
I) TOTAL DIRECT COSTS:		
(SF-424A Object Class Category 6i. Total, Sum of 6a.-6h.)	\$ -	\$ 18,077.50
J) INDIRECT COSTS (SF 424A Object Class Category 6j. Indirect Charges)		
Costs which can't be readily identified and charged to a particular project, such as building rent, utilities, miscellaneous office supplies, etc. Such costs are usually charged to the project as a percentage of some or all of the Direct Costs (Items I above). This percentage is called the Indirect Cost Rate.		
<u>Note:</u> If your organization has a negotiated indirect cost rate agreement (NICRA) with a federal agency, please use that rate and submit a copy with your application. If your organization has no NICRA, the BLM Grants Management Officer may allow an indirect cost rate of 10% of the base modified total direct costs (MTDC). MTDC is all salaries and wages, fringe benefits, materials and supplies, services, travel, and subgrants and subcontracts up to the first \$25,000 of each. Use the Narrative box below to explain how you calculated your indirect costs.		
Base amount for this Grant: (Total Direct Costs, Total Labor Costs, MTDC, etc.)	\$18,078	
Rate to be used on this Grant (%):	38.29%	
	Matching Funds (if applicable)	BLM Funds
J) TOTAL INDIRECT COSTS:		
(SF-424A Object Class Category 6j. Indirect Charges)	\$ -	\$ 6,922.50
<u>Narrative</u> : ACE is covering significant expenses to assure that the project can be accomplished for the funding allocation permitted under this request for proposals.		

K) TOTALS (SF 424A Object Class Category 6k. TOTALS)		
The sum total of Direct and Indirect Costs (Sum of 6i. & 6j.) applicable to this agreement.		
	Matching Funds (if applicable)	BLM Funds
K) TOTAL COSTS:		
(SF-424A Object Class Category 6k. TOTALS)	\$ -	\$ 25,000.00
By signing below, I certify that to the best of my knowledge the costs detailed above are correct and complete and for the purposes set forth in the application for Federal Assistance.		
		
<i>Signature</i> Shane Barrow, National Internship Director, ACE EPIC		Date: <u>2/2/17</u>
<i>Printed Name & Title of Person Completing Budget</i>		

Application for Federal Assistance SF-424		OMB Number: 4040 0004 Expiration Date: 8/31/2016	
1. Type of Submission:		2. Type of Application *If Revision, select appropriate letter(s)	
<input type="checkbox"/> Preapplication <input checked="" type="checkbox"/> Application <input type="checkbox"/> Changed/Corrected Application		<input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision	
		* Other (Specify)	
3. Date Received:		4. Applicant Identifier:	
2/2/17		EPIC 2017 031	
5a. Federal Entity Identifier:		5b. Federal Award Identifier:	
		L17AS00001	
State Use Only:			
6. Date Received by State		7. State Application Identifier	
8. Applicant Information			
a. Legal Name		American Conservation Experience	
b. Employer / Taxpayer Identifier Number (EIN/TiN):		c. Organizational DUNS:	
37 1473291		1453726160000	
d. Address:			
Street1	2900 North Fort Valley Rd		
Street2			
City:	Flagstaff		
County/Parish:			
State:	AZ: Arizona		
Province:			
Country:	USA: United States		
Zip / Postal Code	86001 8310		
e. Organizational Unit:			
Department Name:		Division Name:	
ACE EPIC Program			
f. Name and contact information of person to be contacted on matters involving this application:			
Prefix:	First Name:	Shane	
	Middle Name:		
	Last Name:	Barrow	
Suffix:			
Title:	National Internship Director		
Organizational Affiliation:	American Conservation Experience		
Telephone Number:	801 946 2722	Fax Number:	866 604 9307
Email:	sbarrow@usaconservation.org		

Application for Federal Assistance SF-424					
9. Type of Applicant 1: Type of Applicant 2: Type of Applicant 3: Other (specify):	<table border="1"> <tr> <td>M: Nonprofit with 501C3 IRS Status (Other than Institution of Higher Learning)</td> </tr> <tr> <td> </td> </tr> <tr> <td> </td> </tr> <tr> <td> </td> </tr> </table>	M: Nonprofit with 501C3 IRS Status (Other than Institution of Higher Learning)			
M: Nonprofit with 501C3 IRS Status (Other than Institution of Higher Learning)					
10. Name of Federal Agency					
<table border="1"> <tr> <td>Bureau of Land Management</td> </tr> </table>		Bureau of Land Management			
Bureau of Land Management					
11. Catalog of Federal Domestic Assistance Number:	15.231				
CFDA Title:	Fish, Wildlife and Plant Conservation Resource Management				
12. Funding Opportunity Number:	L17AS00001				
Title:	BLM FY2017 Bureau wide National Conservation Lands Scientific Studies Support Program				
13. Competition Identification Number:					
Title:					
14. Areas Affected by Project (Cities, Counties, States, etc.):					
<table border="1"> <tr> <td>Salt Lake City, UT area</td> </tr> </table>		Salt Lake City, UT area			
Salt Lake City, UT area					
15. Descriptive Title of Applicants Project:					
<table border="1"> <tr> <td>WSA Monitoring WildSnap Development</td> </tr> </table>		WSA Monitoring WildSnap Development			
WSA Monitoring WildSnap Development					

Application for Federal Assistance SF-424			
16. Congressional District of:			
a. Applicant	AZ01	b. Program / Project	UT01
17. Proposed Project:			
a. Start Date	4/1/17	b. End Date:	3/31/22
18. Estimated Funding (\$):			
a. Federal	\$	25,000.00	
b. Applicant	\$		
c. State	\$		
d. Local	\$		
e. Other	\$		
f. Program Income	\$		
g. TOTAL	\$	25,000.00	
19. Is Application Subject to Review By State Under Executive Order 12372 Process?			
<input type="checkbox"/> a. This application was made available to the State under Executive Order 12372 Process for review on			
<input type="checkbox"/> b. Program is subject to E.O. 12372 but has not been selected by the State for review			
<input checked="" type="checkbox"/> c. Program is not covered by E.O. 12372.			
20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation in attachment.)			
<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No	
If "Yes", provide explanation and attach			
21. *By signing this application, I certify (1) to the statements contained in the list of certifications** and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)			
<input checked="" type="checkbox"/> ** 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	
Authorized Representative:			
Prefix:	First Name:	Shane	
	Middle Name:		
	Last Name:	Barrow	
Suffix:			
Title:			
Telephone Number:	801 946 2722	Fax Number:	866 604 9307
Email:	sbarrow@usaconservation.org		
Signature of Authorized Representative:			Date:
			2 Feb 17

BUDGET INFORMATION - Non-Construction Programs SF-424A						OMB Number: 4040-0006
						Expiration Date: 06/30/2014
SECTION A - BUDGET SUMMARY						
Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
ACE Interns	15.231	\$ -	\$ -	\$ 25,000.00	\$ -	\$ 25,000.00
		\$ -	\$ -	\$ -	\$ -	\$ -
		\$ -	\$ -	\$ -	\$ -	\$ -
		\$ -	\$ -	\$ -	\$ -	\$ -
5. Totals		\$ -	\$ -	\$ 25,000.00	\$ -	\$ 25,000.00

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BUDGET INFORMATION - Non-Construction Programs SF-424A					
SECTION B - BUDGET CATEGORIES					Total (5)
6. Object Class Categories	GRANT PROGRAM, FUNCTION, OR ACTIVITY				
	(1)	(2)	(3)	(4)	
	ACE Interns	0	0	0	
a. Personnel	\$ 13,625.00	\$ -	\$ -	\$ -	\$ 13,625.00
b. Fringe Benefits	\$ 2,452.50	\$ -	\$ -	\$ -	\$ 2,452.50
c. Travel	\$ -	\$ -	\$ -	\$ -	\$ -
d. Equipment	\$ -	\$ -	\$ -	\$ -	\$ -
e. Supplies	\$ 2,000.00	\$ -	\$ -	\$ -	\$ 2,000.00
f. Contractual	\$ -	\$ -	\$ -	\$ -	\$ -
g. Construction	\$ -	\$ -	\$ -	\$ -	\$ -
h. Other	\$ -	\$ -	\$ -	\$ -	\$ -
i. Total Direct Charges (Sum of 6a-6h)	\$ 18,077.50	\$ -	\$ -	\$ -	\$ 18,077.50
j. Indirect Charges	\$ 6,922.50	\$ -	\$ -	\$ -	\$ 6,922.50
k. TOTALS (sum of 6i and 6j)	\$ 25,000.00	\$ -	\$ -	\$ -	\$ 25,000.00
7. Program Income					

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BUDGET INFORMATION - Non-Construction Programs SF-424A					
SECTION C - NON-FEDERAL RESOURCES					
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS	
8.ACE Interns	\$ -	\$ -	\$ -	\$ -	
9.	\$ -	\$ -	\$ -	\$ -	
10.	\$ -	\$ -	\$ -	\$ -	
11.	\$ -	\$ -	\$ -	\$ -	
12. TOTAL (sum of lines 8-11)	\$ -	\$ -	\$ -	\$ -	
SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ 25,000.00	\$ -	\$ -	\$ -	\$ -
14. Non-Federal	\$ -	\$ -	\$ -	\$ -	\$ -
15. TOTAL (sum of lines 13 and 14)	\$ 25,000.00	\$ -	\$ -	\$ -	\$ -
SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT					
(a) Grant Program	FUTURE FUNDING PERIODS (YEARS)				
	(b) First	(c) Second	(d) Third	(e) Fourth	
16.ACE Interns	\$ -	\$ -	\$ -	\$ -	
17.	\$ -	\$ -	\$ -	\$ -	
18.	\$ -	\$ -	\$ -	\$ -	
19.	\$ -	\$ -	\$ -	\$ -	
20. TOTAL (sum of lines 16-19)	\$ -	\$ -	\$ -	\$ -	
SECTION F - OTHER BUDGET INFORMATION					
21. Direct Charges	\$ 18,077.50	22. Indirect Charges	\$ 6,922.50	NICRA	38.29%
23. Remarks	One Software Development Lead : \$70/hr, 150 hours; One Software Implementation intern : \$25/hr, 125 hours. Two iPad equipment setups = \$2,000 (\$1,000 * 2)				

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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>TITLE</p> <p>National Internship Director</p>
<p>APPLICANT NAME</p> <p>American Conservation Experience</p>	<p>DATE SUBMITTED</p> <p>February 2, 2017</p>

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B) FRINGE BENEFITS (SF-424A Object Class Category 6b.)				
The cost of fringe benefits, such as health insurance, vacation, FICA, etc., paid to Recipient employees working on this agreement. List employees or positions below, and their fringe benefit rates as percentages of their salaries. List what are included as fringe benefits in the Narrative Box.				
Name & Title/Position	Salary/Wage Base (BLM Amounts budgeted in Section A above)	Fringe Benefit Rate (%)	Matching Funds (if applicable)	BLM Funds
B. Derrick Taff, PI	4,228	40.2%		\$1,700
TBN Post Doc Scholar	1,979	25.7%		\$507
<i>Example: James Smith, Executive Director</i>	\$20,000.00	30%	\$0.00	\$6,000.00
B) TOTAL FRINGE BENEFIT COSTS: (SF 424A Object Class Category 6b. Fringe Benefits)			\$	\$2,207
<p><i>Narrative:</i> Fringe benefits are computed using the fixed rates of 40.20% applicable to Category I Salaries, and 25.70% for Category V, Postdoctoral Scholars and Fellows, for fiscal year 2017 (July 1, 2016, through June 30, 2017). If this proposal is funded, the rates quoted above shall, at the time of funding, be subject to adjustment for any period subsequent to June 30, 2017, if superseding Government approved rates have been established. Fringe benefit rates are negotiated and approved by the Office of Naval Research, Penn State's cognizant federal agency.</p>				

C) TRAVEL (SF-424A Object Class Category 6c.)						
<p>LODGING & PER DIEM The cost of lodging & meals while travelling for agreement activities. Give details and purpose of the travel in the Narrative Box. Current Federal rates may be found online at: http://www.gsa.gov/portal/category/21287.</p>						
Proposed Travel Lodging & Per Diem		No. of People	No. of Days	Cost Per Person Per Day	Matching Funds (if applicable)	BLM Funds
To: Kanab, UT From: State College, PA		2	7	102.83		\$1,440
To: Kanab, UT From: State College, PA		2	7	51		\$714
To: From:						
To: Example: Portland, OR From: Eugene, OR		1	2	\$150.00/Day	\$100.00	\$200.00
<p>MILEAGE REIMBURSEMENT The cost of reimbursement for estimated mileage traveled for agreement activities. Give details and the purpose of the travel in the Narrative Box. Current Federal mileage reimbursement rates may be found online at: www.GSA.gov.</p>						
Proposed Travel Mileage Reimbursement		No. of Miles	No. of Trips	Cost Per Mile	Matching Funds (if applicable)	BLM Funds
To: From:						
To: From:						
To: From:						
To: Example: Portland, OR From: Eugene, OR		110 Miles	2	\$0.10/Mile	\$0.00	\$22.00
<p>OTHER TRAVEL COSTS The costs of airfare, bus fare, car rental, etc., required for agreement activities. Explain the details and the purpose of the costs in the Narrative Box.</p>						
Proposed Other Travel Reimbursement		Type	Cost	No.	Matching Funds (if applicable)	BLM Funds
To: Salt Lake City, UT From: State College, PA		RT Airfare	738.70	2		\$1,477
To: Kanab, UT From: Salt Lake City, UT		Car rental	314.88	1		\$315
To: Kanab, UT From: State College, PA		Fuel	54.10	1		\$54
C) TOTAL TRAVEL COSTS: (SF 424A Object Class Category 6c. Travel)					\$	\$4,000
<p><u>Narrative:</u> Travel expenses are for 2 people (B. Derrick Taff & TBN Post Doc employee) and encompasses airfare, lodging, car rental, and per diem for a site visit for one week.</p>						

D) EQUIPMENT (SF-424A Object Class Category 6d. Equipment)				
The cost of equipment (items with a useful life of more than one (1) year and a cost of \$5,000+ per unit). Explain the need and purpose of the equipment in the Narrative box below.				
Equipment	Quantity	Cost per Unit	Matching Funds (if applicable)	BLM Funds
<i>Example: John Deere Compact Tractor</i>	1	\$17,500.00	\$7,500.00	\$10,000.00
D) TOTAL EQUIPMENT COSTS: (SF 424A Object Class Category 6d. Equipment)			\$	\$
<i>Narrative:</i>				

E) SUPPLIES (SF-424A Object Class Category 6e. Supplies)				
The cost of materials and supplies used directly on this project, such as safety glasses, work gloves, office supplies, etc. Explain the details and purpose in the Narrative box below.				
Item	Quantity	Cost per Unit	Matching Funds (if applicable)	BLM Funds
GPS Unite	1	150		\$150
Fulcrum Software	10	25		\$250
<i>Example: Work Gloves, Leather</i>	6	\$10.00/Pair	\$50.00	\$10.00
E) SUPPLIES COST TOTAL: (SF 424A Object Class Category 6e. Supplies)				\$400
<i>Narrative:</i> Given the remote nature of this project, I anticipate that I will need to purchase 1 additional GPS unit, and purchase Fulcrum software for our iPads, to collect the digital based data.				

F) CONTRACTUAL (SF-424A Object Class Category 6f. Contractual)			
The cost of contracted services and/or sub recipient agreements. Provide names and explain the details and purpose of the costs in the Narrative box below. <u>NOTE</u> : Contracts must be competed per the Uniform Administrative Rules.			
Contractor Name, Type, etc.	Cost	Matching Funds (if applicable)	BLM Funds
Applied Trails Research, Definitive Contract	5526		\$5,526
Leave No Trace Center	1500		\$1,500
<i>Example: Ace Backhoe Service / Excavator</i>	\$2,500.00	\$0.00	\$2,500.00
F) CONTRACTUAL COST TOTAL: (SF 424A Object Class Category 6f. Contractual)		\$	\$7,026
<i>Narrative:</i> The Leave No Trace Center for Outdoor Ethics will be involved, through their Education Director, Ben Lawhon, to help us synthesize the results, into specific implications and recommendations that the BLM and GSENM can implement to conserve the ecological and social/experiential resources. The Leave No Trace Center has had an MOU with the BLM since 1994, and the Center remains the most prominent minimum impact educational strategy implemented in federal protected areas, such as the BLM's GSENM. Drs. Jeremy Wimpey and Jeff Marion, represented through Applied Trails Research, will be leading the recreation ecology impact assessment portion of this project, advising on the data dictionary, GPS based GIS assessment, and synthesis of these data.			

G) CONSTRUCTION COSTS (SF-424A Object Class Category 6g. Construction)			
The cost of construction.			
Contractor: Name/Type/Organization/Etc.	Cost	Matching Funds (if applicable)	BLM Funds
*** NOT APPLICABLE ***			
G) CONSTRUCTION COST TOTAL: (SF 424A Object Class Category 6g. Construction)		\$ N/A	\$ N/A
<i>Narrative:</i>			

H) OTHER (SF-424A Object Class Category 6h. Other)			
Costs that don't fit any other Object Class Category, such as duplicating and printing, postage and freight, rented equipment, etc. Explain the details and purpose in the Narrative box below.			
Item	Cost	Matching Funds (if applicable)	BLM Funds
<i>Example: Ace Equipment Rental (Post-Hole Digger, 4 Days)</i>	<i>\$25/Day</i>	<i>\$0.00</i>	<i>\$100.00</i>
H) OTHER COSTS TOTAL: (SF 424A Object Class Category 6h. Other)		\$	\$
<u>Narrative:</u>			

I) TOTAL DIRECT CHARGES (SF-424A Object Class Category 6i. Sum of 6a.-6h.)		
The total of all direct costs applicable to this project.		
Direct Costs	Matching Funds (if applicable)	BLM Funds
I) TOTAL DIRECT COSTS: (SF 424A Object Class Category 6i. Total, Sum of 6a. 6h.)	\$	\$19,840

<p>J) INDIRECT COSTS (SF-424A Object Class Category 6j. Indirect Charges)</p> <p>Costs which can't be readily identified and charged to a particular project, such as building rent, utilities, miscellaneous office supplies, etc. Such costs are usually charged to the project as a percentage of some or all of the Direct Costs (Items I above). This percentage is called the Indirect Cost Rate.</p> <p><u>Note:</u> If your organization has a negotiated indirect cost rate agreement (NICRA) with a federal agency, please use that rate and submit a copy with your application. If your organization has no NICRA, the BLM Grants Management Officer may allow an indirect cost rate of up to 10% of the base modified total direct costs (MTDC). MTDC is all salaries and wages, fringe benefits, materials and supplies, services, travel, and sub grants and subcontracts up to the first \$25,000 of each. Use the Narrative box below to explain how you calculated your indirect costs.</p>		
<p>Base amount for this Grant: (Total Direct Costs, Total Labor Costs, MTDC, etc.)</p>	<p>\$19,840</p>	
<p>Rate to be used on this Grant (%):</p>	<p>26% (off campus rate)</p>	
<p>Indirect Costs</p>	<p>Matching Funds (if applicable)</p>	<p>BLM Funds</p>
<p>J) TOTAL INDIRECT COSTS: (SF 424A Object Class Category 6j. Indirect Charges)</p>	<p>\$</p>	<p>\$5,160</p>
<p><i>Narrative:</i> F&A off-campus research rates are negotiated and approved by the Office of Naval Research, Penn State's cognizant federal agency. Penn State's current provisional off-campus rate for research is 26.0% of MTDC from July 1, 2016, through June 30, 2017. New awards and new competitive segments with an effective date of July 1, 2016, or later shall be subject to adjustment when superseding Government approved rates are established. Per 2 CFR 200 (Appendix III, Section C.7), the actual F&A rates used will be fixed at the time of the initial award for the duration of the competitive segment.</p>		

<p>K) TOTALS (SF-424A Object Class Category 6k. TOTALS)</p> <p>The sum total of Direct and Indirect Costs (Sum of 6i. & 6j.) applicable to this agreement.</p>		
<p>Total Project Costs</p>	<p>Matching Funds (if applicable)</p>	<p>BLM Funds</p>
<p>K) TOTAL COSTS: (SF 424A Object Class Category 6k. TOTALS)</p>	<p>\$</p>	<p>\$25,000</p>

By signing below, I certify that to the best of my knowledge the costs detailed above are correct and complete and for the purposes set forth in the application for Federal Assistance.



Signature

John Hanold, Assoc. V.P for Research/Director of Sponsored Programs

Printed Name & Title of Person Completing Budget

Key Contacts Form

* Applicant Organization Name:

Southern Utah University

Enter the individual's role on the project (e.g., project manager, fiscal contact).

* Contact 1 Project Role: Grant Accountant

Prefix:

* First Name: Scott

Middle Name:

* Last Name: Carlile

Suffix:

Title: Accountant 1

Organizational Affiliation:

Southern Utah University

* Street1: 351 W University Blvd

Street2:

* City: Cedar City

County:

* State: UT: Utah

Province:

* Country: USA: UNITED STATES

* Zip / Postal Code: 84720

* Telephone Number: 435 586 7729

Fax:

* Email: carlile@suu.edu

Key Contacts Form

* Applicant Organization Name:

Southern Utah University

Enter the individual's role on the project (e.g., project manager, fiscal contact).

* Contact 2 Project Role: Post Award Grant Facilitator

Prefix:

* First Name: Suzette

Middle Name:

* Last Name: Bulloch

Suffix:

Title: Post Award Grant Facilitator

Organizational Affiliation:

Southern Utah University

* Street1: 351 W University Blvd

Street2:

* City: Cedar City

County:

* State: UT: Utah

Province:

* Country: USA: UNITED STATES

* Zip / Postal Code: 84720

* Telephone Number: 435 586 7824

Fax:

* Email: bulloch_s@suu.edu

Manifest for Grant Application # GRANT12325388

Grant Application XML file (total 1):

1. GrantApplication.xml. (size 18162 bytes)

Forms Included in Zip File(total 7):

1. Form GG LobbyingForm V1.1.pdf (size 23074 bytes)
2. Form ProjectNarrativeAttachments 1 2 V1.2.pdf (size 21275 bytes)
3. Form SF424 2 1 V2.1.pdf (size 30129 bytes)
4. Form BudgetNarrativeAttachments 1 2 V1.2.pdf (size 22491 bytes)
5. Form SF424A V1.0.pdf (size 28753 bytes)
6. Form Key Contacts V1.0.pdf (size 24898 bytes)
7. Form SF424B V1.1.pdf (size 28084 bytes)

Attachments Included in Zip File (total 5):

1. SF424 2 1 SF424 2 1 1235 Additional List of Program.pdf application/pdf (size 87922 bytes)
2. ProjectNarrativeAttachments 1 2 ProjectNarrativeAttachments 1 2 Attachments 1237 ATTACHMENT A JP7.pdf application/pdf (size 374495 bytes)
3. SF424 2 1 SF424 2 1 1234 Areas Affected by Project.pdf application/pdf (size 88554 bytes)
4. BudgetNarrativeAttachments 1 2 BudgetNarrativeAttachments 1 2 Attachments 1236 Attachment B.pdf application/pdf (size 341980 bytes)
5. SF424 2 1 SF424 2 1 AdditionalProjectTitle 1238 FAletter72013.pdf application/pdf (size 222772 bytes)

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="01/31/2017"/>	4. Applicant Identifier: <input type="text"/>	
5a. Federal Entity Identifier: <input type="text"/>	5b. Federal Award Identifier: <input type="text"/>	
State Use Only:		
6. Date Received by State: <input type="text"/>	7. State Application Identifier: <input type="text"/>	
8. APPLICANT INFORMATION:		
* a. Legal Name: <input type="text" value="PENNSYLVANIA STATE UNIVERSITY UNIV PARK"/>		
* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="246000376"/>	* c. Organizational DUNS: <input type="text" value="003403953"/>	
d. Address:		
* Street1:	<input type="text" value="Office of Sponsored Programs"/>	
Street2:	<input type="text" value="110 Technology Center Building"/>	
* City:	<input type="text" value="University Park"/>	
County/Parish:	<input type="text" value="Centre"/>	
* State:	<input type="text" value="PA: Pennsylvania"/>	
Province:	<input type="text"/>	
* Country:	<input type="text" value="USA: UNITED STATES"/>	
* Zip / Postal Code:	<input type="text" value="16802 7000"/>	
e. Organizational Unit:		
Department Name: <input type="text" value="Assoc Dean Research HHD"/>	Division Name: <input type="text" value="Health & Human Development"/>	
f. Name and contact information of person to be contacted on matters involving this application:		
Prefix: <input type="text" value="Mrs."/>	* First Name: <input type="text" value="Julie"/>	
Middle Name: <input type="text" value="D"/>		
* Last Name: <input type="text" value="Mitchell"/>		
Suffix: <input type="text"/>		
Title: <input type="text" value="Sr. Associate Coordinator Grants & Contracts"/>		
Organizational Affiliation: <input type="text" value="PENNSYLVANIA STATE UNIVERSITY UNIV PARK"/>		
* Telephone Number: <input type="text" value="814 865 3829"/>	Fax Number: <input type="text" value="814 863 8698"/>	
* Email: <input type="text" value="jdm46@psu.edu"/>		

Application for Federal Assistance SF-424			
* 9. Type of Applicant 1: Select Applicant Type:			
<input type="text" value="X: Other (specify)"/>			
Type of Applicant 2: Select Applicant Type:			
<input type="text"/>			
Type of Applicant 3: Select Applicant Type:			
<input type="text"/>			
* Other (specify):			
<input type="text" value="State Rel Inst Higher Ed"/>			
* 10. Name of Federal Agency:			
<input type="text" value="Bureau of Land Management"/>			
11. Catalog of Federal Domestic Assistance Number:			
<input type="text" value="15.231"/>			
CFDA Title:			
<input type="text" value="Fish, Wildlife and Plant Conservation Resource Management"/>			
* 12. Funding Opportunity Number:			
<input type="text" value="L17AS00001"/>			
* Title:			
<input type="text" value="BLM FY2017 Bureau wide National Conservation Lands Scientific Studies Support Program"/>			
13. Competition Identification Number:			
<input type="text"/>			
Title:			
<input type="text"/>			
14. Areas Affected by Project (Cities, Counties, States, etc.):			
<input type="text"/>	<input type="button" value="Add Attachment"/>	<input type="button" value="Delete Attachment"/>	<input type="button" value="View Attachment"/>
* 15. Descriptive Title of Applicant's Project:			
<input type="text" value="Inventory and Monitoring Research for Ecological and Social Conditions in BLM's GSENM WSA's"/>			
Attach supporting documents as specified in agency instructions.			
<input type="button" value="Add Attachments"/>	<input type="button" value="Delete Attachments"/>	<input type="button" value="View Attachments"/>	

Application for Federal Assistance SF-424	
16. Congressional Districts Of:	
* a. Applicant <input type="text" value="PA 005"/>	* b. Program/Project <input type="text" value="UT all"/>
Attach an additional list of Program/Project Congressional Districts if needed.	
<input type="text"/>	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
17. Proposed Project:	
* a. Start Date: <input type="text" value="04/01/2017"/>	* b. End Date: <input type="text" value="12/31/2018"/>
18. Estimated Funding (\$):	
* a. Federal	<input type="text" value="25,000.00"/>
* b. Applicant	<input type="text" value="0.00"/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value="25,000.00"/>
* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?	
<input type="checkbox"/> a. This application was made available to the State under the Executive Order 12372 Process for review on <input type="text"/> .	
<input type="checkbox"/> b. Program is subject to E.O. 12372 but has not been selected by the State for review.	
<input checked="" type="checkbox"/> c. Program is not covered by E.O. 12372.	
* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If "Yes", provide explanation and attach	
<input type="text"/>	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="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)	
<input checked="" type="checkbox"/> ** 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: <input type="text" value="Dr."/>	* First Name: <input type="text" value="John"/>
Middle Name: <input type="text" value="W."/>	
* Last Name: <input type="text" value="Hanold"/>	
Suffix: <input type="text"/>	
* Title: <input type="text" value="Associate VP for Research"/>	
* Telephone Number: <input type="text" value="814 865 1372"/>	Fax Number: <input type="text" value="814 865 3377"/>
* Email: <input type="text" value="osp@psu.edu"/>	
* Signature of Authorized Representative: <input type="text" value="John Hanold"/>	* Date Signed: <input type="text" value="01/31/2017"/>

Project Narrative File(s)

* Mandatory Project Narrative File Filename:

[Add Mandatory Project Narrative File](#)

[Delete Mandatory Project Narrative File](#)

[View Mandatory Project Narrative File](#)

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

[Add Optional Project Narrative File](#)

[Delete Optional Project Narrative File](#)

[View Optional Project Narrative File](#)

Budget Narrative File(s)

* **Mandatory Budget Narrative Filename:**

[Add Mandatory Budget Narrative](#)

[Delete Mandatory Budget Narrative](#)

[View Mandatory Budget Narrative](#)

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

[Add Optional Budget Narrative](#)

[Delete Optional Budget Narrative](#)

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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.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE
WILLIAM ERNEST	Sponsored Proj Grant & Contrac
APPLICANT ORGANIZATION	DATE SUBMITTED
University of Utah	02/02/2017

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

Manifest for Grant Application # GRANT12328827

Grant Application XML file (total 1):

1. GrantApplication.xml. (size 25671 bytes)

Forms Included in Zip File(total 7):

1. Form GG_LobbyingForm-V1.1.pdf (size 23171 bytes)
2. Form ProjectNarrativeAttachments_1_2-V1.2.pdf (size 21402 bytes)
3. Form SF424_2_1-V2.1.pdf (size 30123 bytes)
4. Form BudgetNarrativeAttachments_1_2-V1.2.pdf (size 22364 bytes)
5. Form SF424A-V1.0.pdf (size 29774 bytes)
6. Form Key_Contacts-V1.0.pdf (size 26972 bytes)
7. Form SF424B-V1.1.pdf (size 28484 bytes)

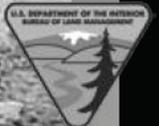
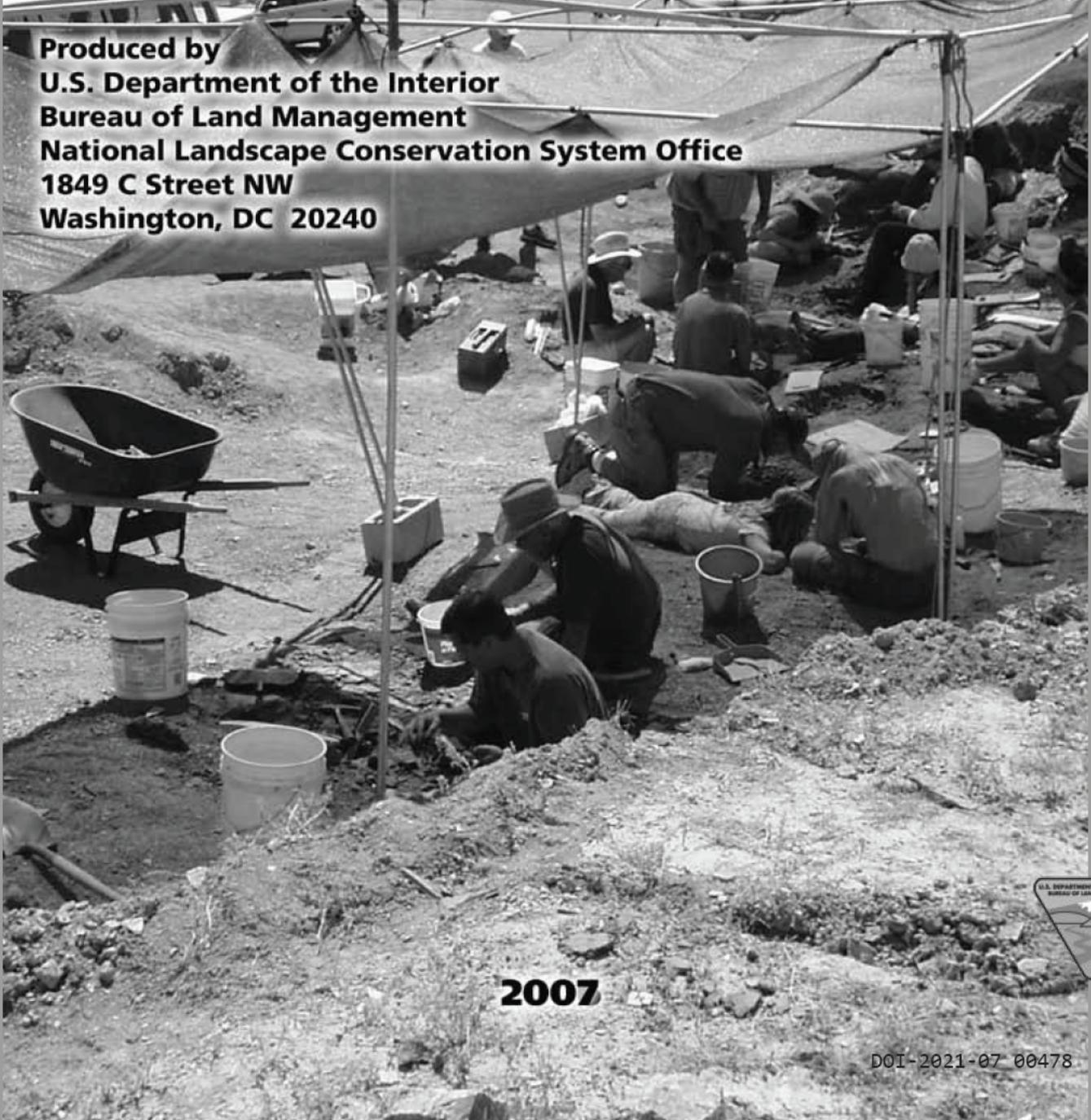
Attachments Included in Zip File (total 2):

1. ProjectNarrativeAttachments_1_2
ProjectNarrativeAttachments_1_2-Attachments-1235-L17AS00001 #1 WSA App Development
Proposal Narrative.pdf application/pdf (size 224212 bytes)
2. BudgetNarrativeAttachments_1_2
BudgetNarrativeAttachments_1_2-Attachments-1234-L17AS00001 #1 WSA App Development Budget
and 424s.pdf application/pdf (size 1372097 bytes)

Bureau of Land Management

National Landscape Conservation System Science Strategy

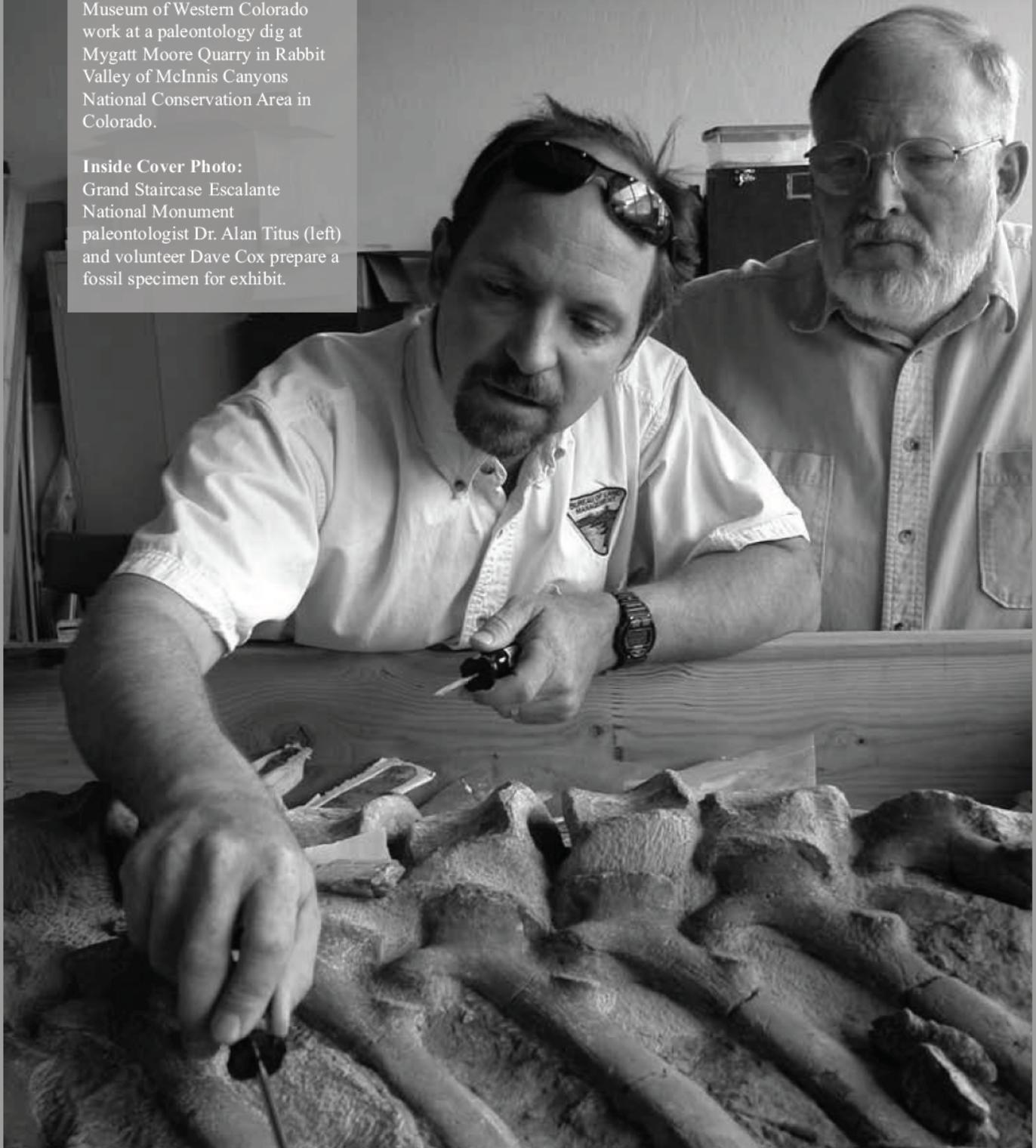
**Produced by
U.S. Department of the Interior
Bureau of Land Management
National Landscape Conservation System Office
1849 C Street NW
Washington, DC 20240**



2007

Cover Photo: Scientists from the Museum of Western Colorado work at a paleontology dig at Mygatt Moore Quarry in Rabbit Valley of McInnis Canyons National Conservation Area in Colorado.

Inside Cover Photo: Grand Staircase Escalante National Monument paleontologist Dr. Alan Titus (left) and volunteer Dave Cox prepare a fossil specimen for exhibit.



National Landscape Conservation System

Our mission is to conserve, protect, and restore nationally significant landscapes of outstanding cultural, ecological, and scientific values for present and future generations of Americans.

Dear Reader

The Bureau of Land Management (BLM) is pleased to present the *National Landscape Conservation System Science Strategy*. This strategy will guide the science program for the National Landscape Conservation System (NLCS) over the next 10 years. The strategy presents goals for science within the NLCS, followed by a series of objectives and actions to achieve those goals. The strategy is based on authorities in the Federal Land Policy and Management Act, Antiquities Act, Wilderness Act, National Trails System Act, Wild and Scenic Rivers Act, and enabling legislation and Presidential proclamations for individual units of the NLCS. It is tiered to the BLM's broader science strategy, while recognizing the unique values of NLCS units.

The NLCS consists of more than 26 million acres that include National Monuments, National Conservation Areas, Wilderness, Wilderness Study Areas, Wild and Scenic Rivers, National Scenic and Historic Trails, and other congressionally designated public lands; all designations are herein referred to as NLCS "units." The NLCS mission is to conserve, protect, and restore these nationally significant landscapes of exceptional cultural, ecological, and scientific values for the benefit of current and future generations. This science strategy focuses on achieving a greater understanding



A BLM biologist weighs a golden eagle chick within the Snake River Birds of Prey National Conservation Area along the Snake River Canyon in Idaho.

of these values by emphasizing scientific study within NLCS units. The strategy outlines actions to promote science within NLCS units, implement a standard process for permitting and reporting scientific research within the NLCS, integrate scientific findings into management decisions, and use knowledge gained from scientific inquiry for internal and external communication.

The natural resource and social issues within NLCS units are representative of those occurring throughout the BLM. Thus, understanding gained from science conducted on NLCS units can be applied to other public lands, allowing the NLCS to function as an outdoor laboratory for science and best management practices across the BLM. Communicating findings from scientific investigations conducted within NLCS units to both a wider BLM audience and outside the agency will, therefore, maximize the overall utility of these findings across landscapes.

It is our hope that this document will encourage science within the NLCS, effect positive change in managing at the landscape level, and promote communication about science and cooperative conservation throughout the BLM and with the public.

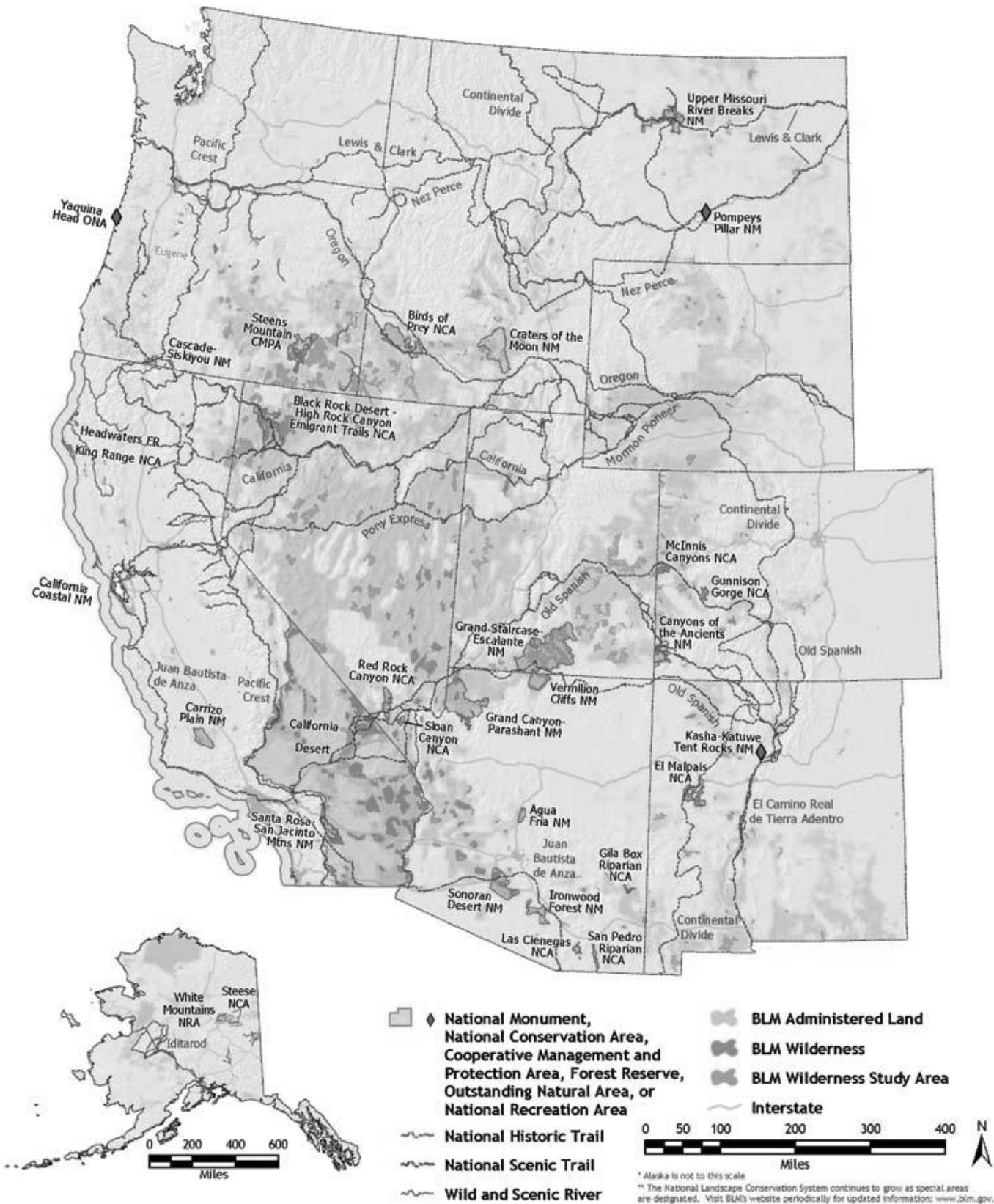
Recommended by:

Elena C. Daly, Director
National Landscape Conservation System
Bureau of Land Management

Approved by:

James M. Hughes, Acting Director
Bureau of Land Management

National Landscape Conservation System



Introduction

The BLM's National Landscape Conservation System comprises BLM-administered public lands that have received special recognition and protection through congressional and Presidential conservation designations. The NLCS science strategy responds to the legal mandate in the enabling legislation and proclamations to promote and foster both basic and applied science by presenting a plan to facilitate scientific understanding of the BLM's NLCS units.

In both the national BLM science strategy (2000) and the NLCS science strategy, the term "science" is defined broadly, including basic and applied research in both natural and social science, as well as inventory and monitoring initiatives. The national science strategy primarily describes an approach for identifying science needed to address management issues, communicating those needs to science providers, and incorporating the results into the decisionmaking process. That framework applies to the NLCS as well.

In addition to the BLM's broad mandate to conserve scientific resources under the Federal Land Policy and Management Act, the NLCS has specific

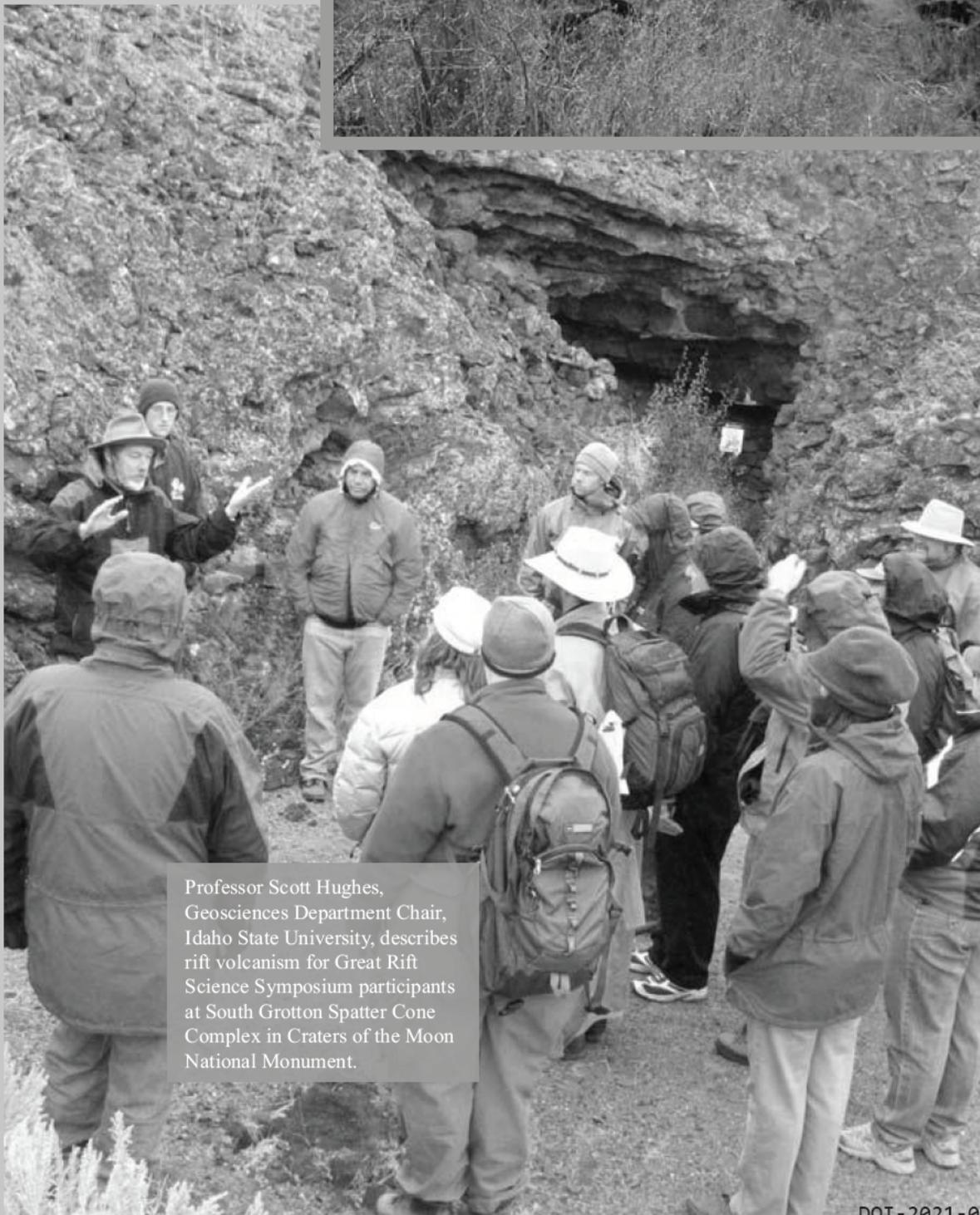
congressional and Presidential direction to protect scientific values. The NLCS must protect the scientific and other natural and cultural resources for which its units were designated, which requires an understanding of what and where these values are, what condition they are in, and how best to manage them. Also, because of the increased public interest in these specially designated lands, NLCS units provide significant outreach and education opportunities for which scientific knowledge is integral. These circumstances are addressed by this NLCS science strategy.

To date, many scientific endeavors on NLCS units have been and are being performed without consistent procedures for authorizing, obtaining, or disseminating project results. A systematic method to manage and promote science within NLCS units will increase the efficiency and value of scientific investigation for the NLCS unit, science providers, and the public at large. This strategy establishes a framework for facilitating science within the NLCS, the results of which can be applied across landscapes, promoting cooperative conservation.



Because of its remoteness, in 1996 Vermillion Cliffs National Monument became a long term release site for the California condor reintroduction program in northern Arizona.

A volunteer from the Arizona Archaeological Society examines rock art near the edge of Silver Creek Canyon in the Agua Fria National Monument. Volunteers have devoted thousands of hours to recording and analyzing prehistoric petroglyphs in the monument.



Professor Scott Hughes, Geosciences Department Chair, Idaho State University, describes rift volcanism for Great Rift Science Symposium participants at South Grotton Spatter Cone Complex in Craters of the Moon National Monument.

NLCS Science Goals and Objectives

The goals of science within the NLCS are to:

- Gain scientific understanding of NLCS resources and landscapes and the benefits they provide the American public
- Apply scientific understanding to management, education, and outreach

The objectives and actions that follow provide the framework for how the NLCS will achieve these goals.

Objective 1: Promote scientific study within NLCS units.

Rationale: NLCS units have been designated by Congress or the President in part for their extraordinary scientific resources. Generating knowledge about natural and social resources of the NLCS is the first step toward achieving an understanding of these treasures. Therefore, projects in the natural and social sciences that take advantage of these resources should be encouraged. Science plans and designated science coordinators/contacts for NLCS units will serve as the basis for acquiring a scientifically defensible assessment of NLCS resources through a wide range of activities.

Actions

1.1 Develop science plans for individual NLCS units.

Each NLCS national monument (NM) and national conservation area (NCA) will develop a science plan (Appendix A). Plans will be based on four areas of emphasis: 1) scientific investigation of natural, social, and cultural resources referred to in each unit's enabling language, 2) studies that directly provide information to be used in Bureau management decisions, 3) multidisciplinary syntheses of science

results for planning and implementation processes, and 4) efforts to communicate scientific findings to the public. All units' science plans will include sections on baseline inventory and monitoring as part of identifying their science needs. NLCS areas other than NM/NCAs may also develop science plans.

1.2 Designate a science contact for each NLCS unit.

Each NLCS unit will designate a contact for science providers who will be responsible for responding to research requests submitted through the new BLM Research Permit and Reporting System (RPRS) (Appendix B). Science coordination responsibilities could range from full-time to collateral duties, depending on need.

1.3 Conduct outreach to science providers.

NLCS science coordinators/contacts, unit managers, and state NLCS program leads will conduct outreach to outside researchers about NLCS science needs. Individual NLCS units will conduct outreach through the BLM RPRS, the Cooperative Ecosystem Studies Units program, and grassroots networking with potential researchers. Outreach can also be conducted through unit-specific or NLCS-wide science symposia, professional and departmental meetings, and the Internet.

Objective 2: Implement a standard process for permitting and reporting scientific research within NLCS units.

Rationale: A consistent process for science providers to learn about science needs, obtain research permits, and report the progress and results of science conducted on public lands will enable the BLM to more effectively and efficiently

interact with our science partners and more accurately report the magnitude and value of scientific activities within the NLCS. A system that streamlines the permitting and reporting process decreases the workload for both science providers and Bureau staff and managers.

Actions

2.1 Provide a central location to access information regarding scientific research on public lands.

The BLM RPRS will provide a venue for science providers to learn about NLCS scientific needs, resources, and contacts. The initial BLM RPRS is being piloted on a subset of NLCS units in fiscal year 2008. The pilot sites will be evaluated and, if successful, the system will be implemented throughout the NLCS and optionally may be deployed Bureauwide. Appropriate Bureau websites (e.g., NLCS units and the BLM science center) will provide a link to the BLM RPRS.

2.2 Monitor research activities to ensure compliance with BLM requirements and help facilitate research project logistics.

Scientists will use the BLM RPRS to apply for permits and report the progress and results of scientific activities within NLCS units. The NLCS science coordinators/contacts will ensure that the researcher has obtained the necessary permits prior to beginning work (e.g., sensitive plant/animal species, cultural resource, and paleontology permits), as well as verify compliance with applicable laws, regulations, Department and Bureau policies, and Executive orders. For example, some NLCS units have specific policies designed to protect the areas' specific values (Appendix C). NLCS staff will then work with the researchers to locate appropriate study sites and will maintain communication with the researcher regarding logistics of

the project (e.g., when field workers will be on site, what their plot markers look like, etc.).

2.3 Track scientific activities within NLCS units.

The BLM RPRS will allow scientists to submit the required Investigator Annual Reports online. Report guidelines will be a part of the BLM RPRS. These reports will be part of the database of the objectives and general findings of scientific study conducted within NLCS units.

Objective 3: Communicate the results of scientific study internally and integrate this knowledge into management decisions.

Rationale: Scientific information must be communicated internally to reach our goal of using scientific understanding of NLCS resources to inform management decisions. Scientific understanding gained from science conducted within the NLCS can be applied to other public lands, allowing the NLCS to function as an outdoor laboratory for science and best management practices across BLM landscapes.

Actions

3.1 Facilitate the transfer of scientific information from researchers to the NLCS.

NLCS unit managers will access Investigator Annual Reports for scientific studies performed on public lands through the BLM RPRS. In addition, researchers will provide final reports (including project objectives, methods, data, conclusions, and whether or not the results were peer-reviewed/published) and other peer-reviewed publications to the hosting NLCS unit through the science coordinator/contact and the BLM science center in electronic form. The NLCS offices will also request that all scientists incorporate a technology transfer product. This

can take the form of a short briefing document on the project summarizing how the findings could impact various management issues. Researchers can also participate in informal presentations with BLM staff to discuss their research in the context of current management issues.

3.2 Facilitate periodic syntheses of scientific topics of interest.

NLCS units will help facilitate synthesis of current knowledge about especially relevant scientific issues. For example, state NLCS leads, unit managers, and unit science coordinators/contacts will organize opportunities for meetings, workshops, and/or science symposia. Units will work in close coordination with adjacent BLM field offices and state, regional, and national science coordinators to plan and leverage support for such opportunities.

3.3 Issue guidelines for interpreting and integrating scientific information into decisionmaking.

Policy will be created using BLM examples, to help managers and staff complete the cycle of integrating science into their decisionmaking process. These recommendations will tier from the BLM's broader science strategy.

Objective 4: Communicate scientific findings externally.

Rationale: Informing the general public, local communities, researchers and institutions, and other land managers about the results of scientific activities within NLCS units will foster appreciation for and enjoyment of the landscape in which they live and work and promote cooperative conservation.

Actions

4.1 Use knowledge gained from science within NLCS units in interpretive activities.

Science highlights will be incorporated

into interpretive activities (e.g., visitor center displays, road- and trailside kiosks, guided hikes, brochures, and websites) to enhance explanations of NLCS units' special features. As projects are completed, new information will become available and incorporated into interpretive activities. Some science projects may even allow for visitors to work side by side with researchers, helping visitors better understand and appreciate the scientific process.

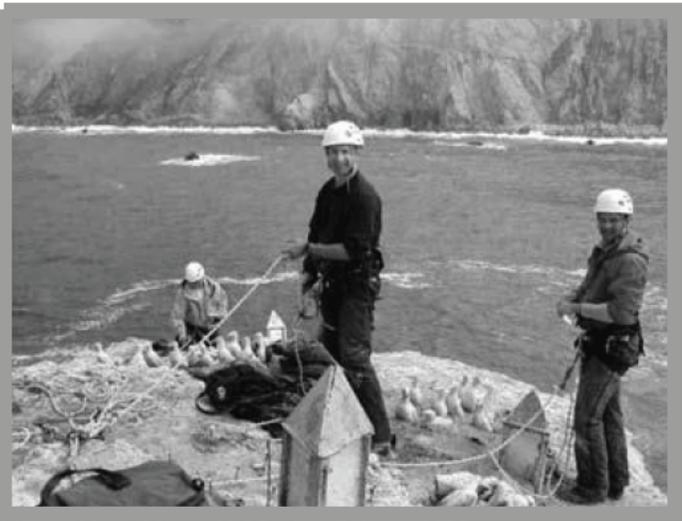
4.2 Provide scientific information and opportunities to educational institutions.

NLCS units will provide such services as outdoor classrooms (e.g., www.handsontheland.org), field trip and volunteer opportunities, hands-on demonstrations of how to collect and interpret various types of data, and research prospects (for graduate and undergraduate students, such as GeoCorps). Web-accessible lesson plans and classroom satellite broadcasts that focus on science from NLCS units, such as Share the Adventure!, will help make NLCS science available to students across the country.

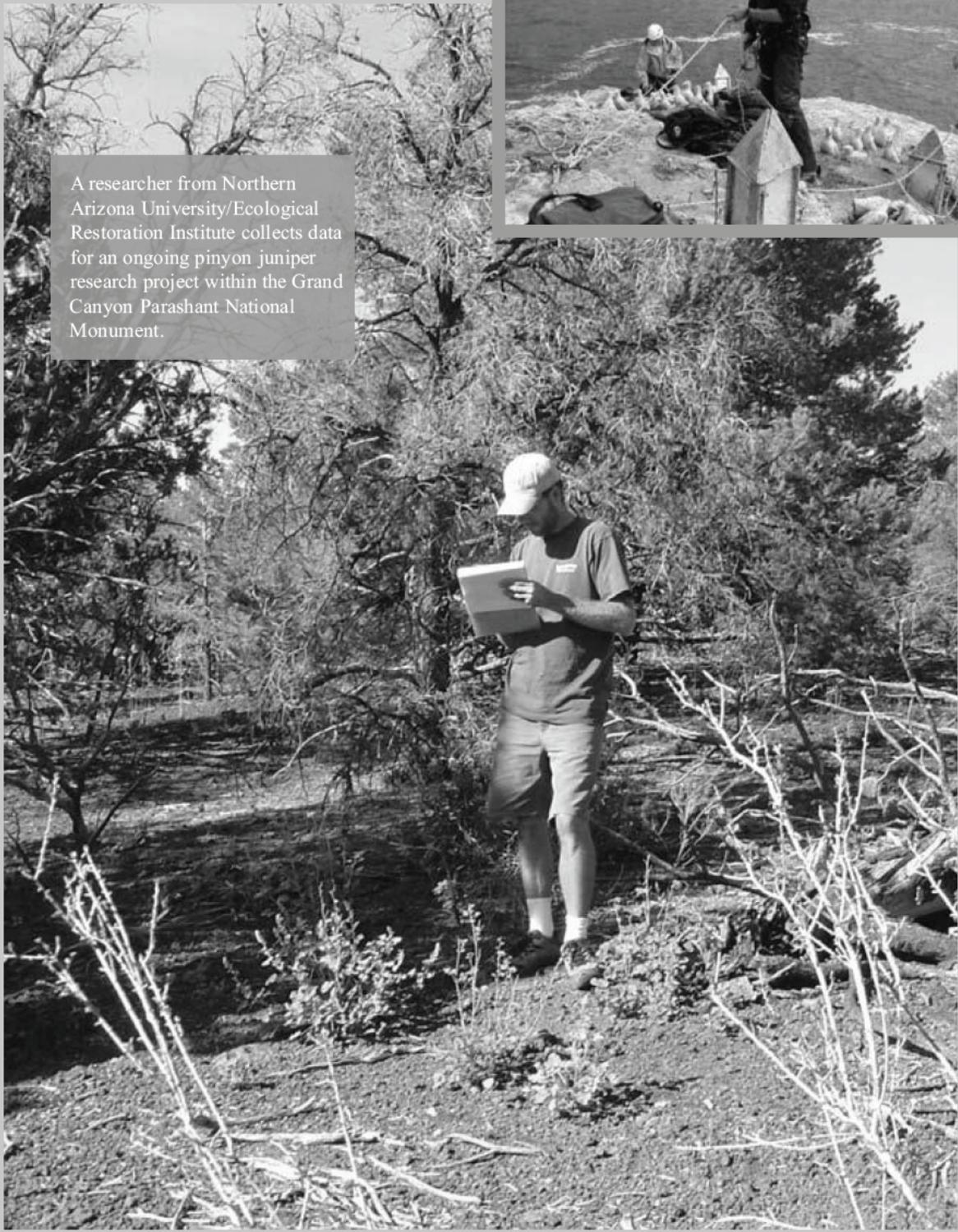
4.3 Share scientific information with local communities and the general public.

Forums will be provided in which residents of local/gateway communities can learn about NLCS science. Forums could include lecture series, field tours, opportunities to volunteer with researchers, and newsletters. Presenting information to communities will help facilitate transitions associated with rapid change throughout the West. Scientific findings of broader significance will be posted on BLM websites.

Fish and Wildlife Service biologists use common murre decoys to lure the highly social birds back to the rocks within the California Coastal National Monument. These rocks were important predecline locations for murre breeding colonies.



A researcher from Northern Arizona University/Ecological Restoration Institute collects data for an ongoing pinyon juniper research project within the Grand Canyon Parashant National Monument.



Appendix A:

NLCS Unit Science Plan Outline

Purpose

Outline how the particular NLCS unit will help to achieve the overall NLCS science goals to: 1) gain scientific understanding of NLCS resources and landscapes, and 2) apply scientific understanding to management, education, and outreach.

Standard NLCS Unit Science Plan Components

1. Identify the unit's scientific mission

- List the science values identified in the unit's designation
- Summarize the baseline condition of natural and/or cultural resources
- Enumerate the unit's resource management plan connections, drivers, and requirements

2. Identify science needs

- Prioritize internal science needs including baseline inventory and monitoring (e.g., natural and cultural resources, demographic and economic information)
- Describe opportunities and needs for scientific research

3. Outline the strategy to meet science needs

- Identify the unit science coordinator/contact
- Identify current and potential science providers, partners, and collaborators
- Outline a plan for completing baseline inventories
- Develop a long-term monitoring strategy

- Detail the plan to promote science within the unit
- Link unit science projects to local, regional, and national efforts
- Arrange for the use of the new BLM RPRS

4. Specify a strategy for integrating scientific understanding into management decisions

- Develop a strategy for transferring information from researcher to staff
- Identify opportunities to share especially relevant scientific information among scientists, managers, and staff
- Arrange for the next stage of the resource management plan (development, implementation, or evaluation)
- Ensure compliance with legislative, statutory, and regulatory factors (e.g., National Environmental Policy Act)

5. Describe how scientific findings will be delivered to the public

- Identify interpretive activities related to science
- Specify and post/advertise opportunities for educational institutions
- Develop plans for sharing information with other agencies/land managers
- Propose specific outreach to local communities and broader audiences

6. Describe existing scientific projects

- List project title, contributors, a brief description, and status (planned, in progress, completed, etc.) for current science activities

Appendix B:

The BLM Research Permit and Reporting System

The NLCS is working in partnership with the National Park Service (NPS) to adapt their Research Permit and Reporting System (RPRS) for the BLM and ensure the two systems are compatible.

Major Features Found on the BLM RPRS

- Information about BLM research permit application requirements and field work restrictions
- Web link and science coordinator contact information for each NLCS unit
- Searchable database of NLCS units' science needs and opportunities
- Online application for a permit to conduct research within the NLCS
- Online submission of Investigator Annual Reports for scientific studies conducted on public lands
- Searchable database of the objectives and findings (as reported in the Investigator Annual Reports) of science previously conducted within the NLCS
- Provides managers, planners, and interdisciplinary teams easy access to science reports that will be used in decisionmaking
- Allows the BLM to monitor research activities, ensuring projects are in compliance with laws, regulations, land use plan decisions, and National Environmental Policy Act requirements
- Decreases workloads for field staff through task automation and a reduction in the number of direct inquiries regarding science needs and opportunities
- Enhances the BLM's profile within the science community, thereby increasing the BLM's capacity to leverage funding through partnerships with researchers
- Provides useful information for BLM education, community outreach, and interpretation efforts
- Facilitates the BLM's ability to gather information, imposing fewer data calls on field offices
- Promotes consistency within the Department of the Interior

Benefits for the BLM

- Supports the President's electronic government (e-gov) initiative
- Creates a user-friendly, centralized forum to communicate BLM research needs to science providers

Benefits for the Research Community

- Provides a centralized access point to learn about science needs and opportunities across BLM jurisdictions

- Increases researchers' abilities to interact with BLM staff, locate study areas in the most appropriate locations, and develop projects most useful to the BLM
- Provides quick access to previous and ongoing projects, fostering collaboration between researchers and reducing duplication of studies
- Streamlines permitting and reporting for projects undertaken at multiple sites, across multiple years, or across jurisdictions

Conservation Area, Snake River Birds of Prey National Conservation Area, Upper Missouri Breaks National Monument, Steens Mountain Cooperative Management and Protection Area, and Grand Staircase-Escalante National Monument.

- Fiscal Year 2008 – Test the BLM RPRS in a live environment (1-year pilot)
- Fiscal Year 2009 – Evaluate tests and prepare to expand to all remaining NLCS units
- Fiscal Year 2010 – Evaluate the BLM RPRS for implementation Bureauwide

Current Plans for the BLM RPRS

The BLM RPRS is being piloted on a subset of 10 NLCS units. Pilots include: Agua Fria National Monument, San Pedro Riparian National Conservation Area, Aravaipa Wilderness, Headwaters Forest Reserve, California Coastal National Monument, Gunnison Gorge National



Scientists conduct vegetation transects as part of a project examining the response of butterfly diversity to grazing in the Cascade Siskiyou National Monument in Oregon. One hundred fifteen butterfly species have been catalogued in the monument.

A BLM range technician counts cottonwood saplings near Pablo Rapids in Montana as part of the cooperative cottonwood study between BLM and the U.S. Geological Survey in the Upper Missouri River Breaks National Monument.

Appendix C:

Conducting Research in BLM-Managed Wilderness, Wilderness Study Areas, and Wild Rivers

The BLM encourages natural and social scientific research on all NLCS lands. Certain units such as Wilderness, Wilderness Study Areas (WSAs), and Wild Rivers have special requirements that set them apart from other types of public land.

In general, a researcher may remove or disturb natural resources in BLM Wilderness, WSAs, and Wild Rivers if project impacts preserve wilderness character. Ordinarily, this means research must be accomplished using nonmotorized hand tools and cause only minimal surface disturbance.

Wilderness and Wild Rivers

Researchers are encouraged to conduct scientific investigations that are dependent on the natural setting of Wilderness and Wild Rivers. The BLM may consider exceptions to some of the following prohibitions on a case-by-case basis.

Researchers are generally prohibited from:

- Building temporary roads, aircraft landing strips, heliports, or helispots
- Using motorized equipment; or motor vehicles, motorboats, or other forms of mechanical transport
- Landing aircraft or dropping or picking up any material, supplies, or people
- Building structures or installations
- Cutting trees

Wilderness Study Areas

Researchers are generally prohibited from:

- Driving off designated routes of travel
- Creating surface disturbance that requires reclamation (recontouring topography, replacing topsoil, or restoring native plant species and cover)
- Building temporary roads, aircraft landing strips, heliports, or helispots
- Landing aircraft or dropping or picking up any material, supplies, or people
- Building structures or installations
- Cutting trees



Scientists collect fairy brine shrimp on the Carrizo Plain National Monument in California as part of the vernal pool monitoring projects.

BLM staff take global positioning system readings at Kasha Katuwe Tent Rocks National Monument.



Oregon Archaeological Society volunteers pick bone, stone, and fire hearth charcoal from screens at the Mortar Riddle Site in the Steens Mountain Cooperative Management and Protection Area.

Paleontologists from the Smithsonian Institution examine specimens in the Fossil Forest Research Natural Area in New Mexico.



Editing, design, and layout provided by the BLM National Science and Technology Center's Publishing Staff, Denver, Colorado.

Archaeological resources are documented at Lowry Pueblo, a National Historic Landmark, located in the Canyon of the Ancients National Monument in Colorado.

Key Contacts Form

*** Applicant Organization Name:**

Natural History Museum of Utah, University of Utah

Enter the individual's role on the project (e.g., project manager, fiscal contact).

*** Contact 1 Project Role:** Principal Investigator

Prefix:

* First Name: RANDALL

Middle Name: B

* Last Name: IRMIS

Suffix:

Title: Curator and Associate Professor

Organizational Affiliation:

Natural History Museum of Utah, University of Utah

* Street1: 301 Wakara Way

Street2:

* City: SALT LAKE CITY

County: SALT LAKE

* State: UT: Utah

Province:

* Country: USA: UNITED STATES

* Zip / Postal Code: 84108 1214

* Telephone Number: 8015850561

Fax:

* Email: irmis@umnh.utah.edu

Key Contacts Form

*** Applicant Organization Name:**

Natural History Museum of Utah, University of Utah

Enter the individual's role on the project (e.g., project manager, fiscal contact).

*** Contact 2 Project Role:** Financial contact

Prefix: MR

* First Name: ANTHONY

Middle Name: DAVID

* Last Name: MILLET

Suffix:

Title: Administrative Manager

Organizational Affiliation:

University of Utah

* Street1: 301 WAKARA

Street2:

* City: SALT LAKE CITY

County: SALT LAKE

* State: UT: Utah

Province:

* Country: USA: UNITED STATES

* Zip / Postal Code: 84108 1214

* Telephone Number: 801/581 6927

Fax:

* Email: tmillet@umnh.utah.edu

ATTACHMENT A: PROJECT PROPOSAL

Instructions: A Project Proposal must be submitted with the Standard Form (SF) 424 Application for Federal Assistance for all BLM Assistance Agreements. Complete each section below. Use additional sheets as needed.

Person Submitting Proposal: James Pollard Date: 1/30/17

Organization Name: Southern Utah University

**Agreement or Announcement No.: L17AS00001

** Agreement or Announcement Title: A Survey of Aquatic Invertebrates of Spring Systems in Bears Ears National Monument, UT

Estimated Period of Performance: 6/17-6/18

BLM POC: Bears Ears National Monument
Proposed Project Location: _____

This work will occur on: Public Lands Both Public & Private Lands

MISSION:

To identify and document existing populations of aquatic organisms associated with perennial spring systems in the lower elevations of the Bears Ears National Monument. This first year's funding is being requested to provide the resources for SUU faculty and students to perform a paper survey and initial pilot reconnaissance of invertebrates associated with spring systems in the Bears Ears National Monument.

OBJECTIVE:

The objective of this proposal is to provide BLM with an initial description of spring systems that could be sampled for invertebrate populations in the Bears Ears National Monument. One reconnaissance trip to visit springs and collect invertebrates for later identification is planned. This project would support the following Research Themes: Effectiveness Research, Standardized Inventory and Monitoring, and Research Synthesis by providing descriptions of existing populations of aquatic invertebrates for which limited or no documentation currently exists. Aquatic invertebrates have been used for many years as indicators of water quality and environmental pollution.

RESEARCH THEME

- Research Identified in Unit Science Plans (for National Monuments, National Conservation Areas, and Similar Designations)*
- Effectiveness Research*
- Standardized Inventory and Monitoring*
- Research Syntheses*
- Citizen Science*
- Other Management-Driven Research*
- All themes and goals apply*

TECHNICAL APPROACH (Proposal Requirement Number in Parenthesis*)

Office Based Survey (1)

The approach for this project would be to perform an office-based survey of the Bears Ears National Monument targeting potential perennial spring systems likely to harbor aquatic invertebrate populations. The office-based survey would be followed by a field reconnaissance/invertebrate collection trip to as many of the identified springs as practicable. Agency personnel will be consulted to obtain their preference for spring visitation.

Students will be employed to perform an extensive literature review and map evaluations of the monument. In addition, canvassing of agency personnel and other academic sources for information associated with perennial springs in the monument will be performed. Results of map surveying and canvassing will be collated in a first interim report.

Field Reconnaissance and Collections (1, 2)

A standardized unit effort will be expended on each collection site (e.g. unit area or unit time for a given type of habitat). Invertebrates collected from springs will be identified to as unique a taxonomic identity as practicable and the number of different taxa collected enumerated for each spring collection. Specimens will be preserved on site and returned to the SUU Museum for storage and processing. Samples will be available for future more in-depth taxonomic treatment and/or as reference material. Extensive field notes will be collected at each site to document the condition of the spring system. Pre-prepared forms will be used for note taking along with photographs and GPS marking of the site.

Management Decisions Based on Data Interpretation (6, 9)

Lower elevation springs are proposed for this project because of their potential to harbor unique and potentially endemic invertebrates as well as the potential to improve these aquatic habitats by management processes. Invertebrate populations inhabiting a spring system can be indicative of water quality based on their documented tolerances (e.g. Merritt, Cummins, and Berg 2008 and many other sources). Therefore resource evaluation, grazing effects, and recreation management surrounding a spring can be interpreted based, in part, on the assemblage of invertebrates inhabiting the spring. Changes in management can be evaluated again, in part, based on changes in the invertebrates inhabiting the spring. To aid in interpretation of invertebrate taxonomic data photo documentation and extensive notes of the condition of each spring sampled will be prepared during the collection visit. A report will be prepared summarizing the existing condition of each spring system as well as the invertebrate taxa inhabiting the spring. Interpretation of the populations inhabiting each spring in relation to known indicator taxa will be provided in a final report.

Merritt, R. W., K. W. Cummins, and M. B. Berg. 2008. Chapter 1: Introduction. [pp. 1-6]. In: R. W. Merritt, K. W. Cummins and M. B. Berg (editors), An introduction to the aquatic insects of North America, fourth edition, xvi + 1158 pp. + 39 color plates. Kendall/Hunt Publishing Company, Dubuque, Iowa.

Relevance of this Project (6, 7, 8)

This project would provide foundational knowledge and fill data gaps for the Bears Ears National Monument. Spring systems in the desert southwest provide unique opportunities to develop indicator data which can be used for effective resource management in the monument. Invertebrate populations are used in many aquatic ecosystems to provide indicators of the health and resiliency of the aquatic environment. Baseline data for this faunal group will provide the foundation for management decisions regarding health and management success of this scarce resource of the monument. Tolerance of this

group of fauna to environmental conditions has been well documented but under-studied in the desert southwest. This project would provide a pilot for data collection related to management decisions applicable not only to the Bears Ears Monument but many other National Conservation Land sites across the desert southwest.

Period of Performance, Milestones, and Deliverables (3, 4)

The period of performance for this project would be 1 year. Student hiring would be initiated immediately upon award of the proposal. 1-3 students would be targeted for this effort which would involve them in all stages of the project. Co-Pi's, as well as other SUU faculty, as available, would provide mentorship and taxonomic expertise, training and support for field collections, invertebrate identifications, sample processing, storage procedures, and report writing.

The primary milestones and associated deliverables for this project would be:

1. Completion of office based survey with a list of identified springs proposed for sampling (interim report within 3 months of award).
2. Completion of Field reconnaissance and invertebrate sample collection. Field data sheets and short field report describing each spring sampled and list of samples collected (within 6 months of award assuming an award during the early spring).
3. Completion of taxonomic identifications from all springs sampled. Report listing all taxa for each spring (within 9 months of the award).
4. Final Report including interpretation of taxonomic findings associated with sampled springs (before the award expires).

PUBLIC BENEFIT

This project would develop information currently unavailable to BLM which could be used to manage water resources in the monument. Documentation of unique taxonomic resources will allow the public to understand the unique resource these small water resources provide in the arid landscape of the Bears Ears area. A baseline foundation of this type of data would allow BLM to have a more comprehensive foundation with which to base management decisions.

*Number #5 in the requirements is not applicable since no partners are proposed.

QUALIFICATIONS AND PAST PERFORMANCE

Principal Investigator(s) Qualifications/Experience

See Curriculum Vitae for the PI and Co-Pi's for documentation of examples of grant experience and publication records.

James E. Pollard - PI

Mr. Pollard has extensive experience working with invertebrate populations in the southwest, including the San Juan River and its tributaries, which border the Bears Ears National Monument. He has worked with a number of federal and state agencies in contractual arrangements and cooperative type agreements. His award success for grants and agreements total in excess of 16 million dollars in extramural funding over the last 10 years at two universities.

Fred R. Govedich – CoPI

Dr. Govedich is deeply involved in various aspects of aquatic ecology, animal behavior, and invertebrate evolution, including the evolution of parental care strategies in leeches, leech population genetics, leech systematics, and the reconstruction of the evolutionary relationships (phylogeny) of invertebrate groups, predator-prey interactions, feeding behavior, and migration within and between systems (migration, dispersal, etc.). Aquatic leeches are found in many desert spring systems and can be endemic to common in nature. This taxon may well represent a pivotal group of invertebrates for use in spring management considerations.

Jacqueline Grant - CoPI

Dr. Grant is director of the Garth and Jerri Frehner Museum of Natural History at SUU. She has experience with a broad base of aquatic biological investigations as well as access to museum resources. She is well versed in grant acquisition and management and reporting requirements for grant studies.

Curriculum Vitae of PI and Co-PI's

James E. Pollard Principal Investigator Research Fellow/Program Director

PROFILE

Mr. Pollard has over 35 years of experience with environmental monitoring and evaluation. In his current role as a Research Fellow at SUU and Program Director at UNLV, Mr. Pollard develops and directs projects in environmental sciences, fisheries, forest sciences, water quality investigations, and quality assurance in biological investigations. He has managed projects for the USDA Forest Service, National Park Service, U.S. Environmental Protection Agency, Bureau of Reclamation, Nevada Division of Environmental Protection, Nevada Division of Wildlife, Clark County Parks and Recreation, and various private organizations. He has published numerous peer reviewed articles as well as major project reports and presentations.

EDUCATION

1983-1985 **Post-Graduate Coursework, Computer Science**, *University of Nevada, Las Vegas*

1976 **M.A., Freshwater Ecology**, *Humboldt State University*

1973 **B.S., Marine Biology**, *California State Polytechnic University*

PROFESSIONAL EXPERIENCE

2015 – Present Research Fellow
Outdoor Engagement Center
Southern Utah University

Principal Investigator, Forest Inventory Analysis (FIA) Program

Funded by the U.S. Forest Service, the purpose of this \$470,000/year cost-share agreement is to develop national information management systems and develop an educational outreach program with the Forest Service. Mr. Pollard currently serves as the principal investigator on this project.

1996 – Present Program Director Emeritus
Geoscience Department
University of Nevada, Las Vegas (NV)

Principal Investigator, Forest Inventory Analysis (FIA) Program

Funded by the U.S. Forest Service, the purpose of this \$1.2 million/Joint Research Venture to develop national information management systems. Mr. Pollard currently serves as the principal investigator on this project.

Nellis Dunes: Human Risk Assessment Project

Funded by the Bureau of Land Management, this research focuses on assessing the potential risk to human health from exposure to dust particles at the Nellis Dunes OHV Recreation Area. Mr. Pollard serves as the Quality Assurance Supervisor for the project – completed..

Spring Mountains Butterfly Metapopulation, Life History, and Autecology Project

Funded by the U.S. Forest Service, the focus of this research is to describe the current population status, life history, and autecology of rare and/or endemic Spring Mountains butterfly species. Mr. Pollard provided quality assurance assistance for the project.

- 1987 – 1996 **Site Characterization Department Manager, Lockheed Environmental Systems and Technologies**
As Department Manager, Mr. Pollard directed over 20 scientists and technicians involved in the characterization of hazardous waste sites and ecological evaluations under contract with the U.S. Environmental Protection Agency (EPA).
- 1976 – 1987 **Research Biologist, Environmental Research Center, Biological Sciences Department, University of Nevada, Las Vegas**
Responsibilities included managing and directing laboratory and field operations under a long-term cooperative agreement with the EPA. Mr. Pollard designed, implemented, and reported on a variety of environmental monitoring programs. He oversaw field biological methods development, chemical and biological monitoring projects, fate and transport model validation experiments, and development of quality assurance protocols for chemical and biological samples.
- 1967 – 1971 **Intercommunications Electrician, U.S. Navy**
Mr. Pollard served in the military as an Intercommunications Electrician for the U.S. Navy. He was awarded a Vietnam Service Medal with One Bronze Star, and received an Honorable Discharge.

SELECTED PEER-REVIEWED PUBLICATIONS

- Leetham, M., DeWitt, J., Buck, B., Goossens, D., Teng, Y., Pollard, J., McLaurin, B., Gerads, R., and Keil, D.E. 2016. Oxidative stress and lung pathology following geogenic dust exposure. *Journal of Applied Toxicology*, 36(10):1276-83. doi: 10.1002/jat.3297. PMID: 26922875
- Pollard, J.E., Cizdziel J, Stave K, Reid M. 2007. Selenium concentrations in water and plant tissues of a newly formed arid wetland in Las Vegas, Nevada. *J Environ Mon Assess* 135:447-457.
- Cizdziel JV, Hinners TA, Cross CL, Pollard JE. 2003. Distribution of mercury in the tissues of five species of freshwater fish from Lake Mead, USA. *J Environ.* 5:802-807.
- Pollard JE, Heggem DT. 1991. Quality assurance sample design for large and small environmental water quality surveys: a look at the past and future. *Account Res* 1:155-167.
- Melancon, S.M., J.E. Pollard, and S. C. Hern. 1986. Evaluation of SESOIL, PRZM, and PESTAN in a Laboratory Column Leaching Experiment, *Environ. Tox.Chem.* 5(10):865-878.
- Pollard, J. E. and S. M. Melancon. 1984. Field Washing Efficiency in Removal of Invertebrates from Aquatic Vegetation Mats. *Journal of Freshwater Ecology* 2(4):383-391.
- Pollard, J. E., S. M. Melancon and L. S. Blakey. 1983. Importance of Bottomland Hardwoods to Crawfish and Fish in the Henderson Lake Area. *Atchafalaya Basin, LA, Wetlands* 3:1-25.
- Pollard, J. E. 1981. Investigator Differences Associated with a Kicking Method for Sampling Macroinvertebrates. *Journal of Freshwater Ecology*, 1(2) 215-224.

SELECTED MAJOR PROJECT REPORTS

- Pollard JE, Andrew GM. 2008. Evaluation of selenium in the aquatic food web within the Clark County Wetlands Park Nature Preserve: 2000-2007. Final Project Report. University of Nevada Las Vegas. 33pp.
- Pollard JE, Westfall JA, Patterson PA, Gartner DL, Hansen M, Kuegler O. 2006. Forest Inventory and Analysis national data quality assessment report for 2000 to 2003. Technical Report #RMRS-GTR-181. Fort Collins (CO): U.S. Dept. of Agriculture, Forest Service, Rocky Mountain Research Station. 43pp.
- Reclamation. 2004. Final environmental assessment for the Ducks Unlimited Construction at Clark County Wetlands Park. Boulder City (NV): U.S. Bureau of Reclamation, Lower Colorado Region. Principal Investigator J.E. Pollard.

Pollard JE, Stave K, Reid M, Brazao R, Perry A. 2004. Water quality monitoring and public outreach at the Nature Preserve in the Clark County Wetlands Park, Final Project Report 2001-2003. Las Vegas (NV): University of Nevada Las Vegas. 31pp. plus appendices.

Pollard, J. E. and P. E. Persons. 1996. Effects of Launch Noise from the First Lockheed Launch Vehicle on Brown Pelicans and Snowy Plovers. Final Report to U.S. Fish and Wildlife Service. Feb 14, 1996.

Cougan, K. A., D. W. Sutton, D. V. Peck, V. J. Miller, and J. E. Pollard. 1988. National Stream Survey Phase-I: Quality Assurance Report. U.S. Environmental Protection Agency; Las Vegas, Nevada. EPA-600/4-88/018

Peck, S. K., W. L. Pratt, J. E. Pollard, L. J. Paulson, and D. H. Baeppler. 1987. Benthic Invertebrates and Crayfish of Lake Mead. Lake Mead Limnological Research Center, UNLV, Las Vegas. Final Report to NOAA for Grant #NA-86-ABD-0002

Pollard, J. E. and W. L. Kinney. 1979. Assessment of Macroinvertebrate Monitoring Techniques in an Energy Development Area: A Comparison of the Efficiency of Three Macrobenthic Sampling Methods. EPA-600/7-79-163. U. S. Environmental Protection Agency, Las Vegas, Nevada.

A full list of publications and reports is available upon request.

Co Principal Investigator

Fredric Robert Govedich, PhD

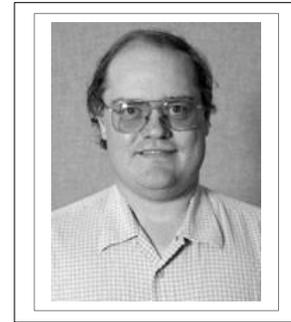
Associate Professor of Biology, Department Chair

EDUCATION:

Bachelor of Science in Biology (Summa Cum Laude, with research) from Northern Arizona University, 1994

Master of Science in Biology from Northern Arizona University, 1996

Ph.D. in Biology from Monash University (Australia), 2001



AWARDS:

Intergovernmental internship Cooperative (IIC) Outstanding Mentor Award (2014)

College of Science Outstanding Faculty Member. 2009-2010. Biology Department.

SERVICE ACTIVITIES:

I participate in service activities including the Southern Utah Science Fair Advisory Committee, as a journal editor, journal peer-reviewer, undergraduate research mentor, and when asked I will gladly share my knowledge with the public in any forum that presents itself.

RESEARCH ACTIVITIES:

I am interested in various aspects of aquatic ecology, animal behavior, and invertebrate evolution, including the evolution of parental care strategies, population genetics, systematics, and the reconstruction of the evolutionary relationships (phylogeny) of invertebrate groups, predator-prey interactions, feeding behavior, and migration within (including the hyporheic) and between systems (migration, dispersal, etc.). Currently I am working on several aspects of population biology, evolutionary biology and animal behavior, including the evolution of reproductive strategies, parental care, sex allocation, paternity and the ecology of freshwater leeches and I am also involved with iUTAH an interdisciplinary research and training program aimed at strengthening science for Utah's water future.

SELECTED PROFESSIONAL PRESENTATIONS:

Govedich, Fredric R. and Bonnie A. Bain. 2015. Leeches of North America. Society for Freshwater Science, 2015 Annual Meeting. Milwaukee. May 17-21, 2015.

Fredric R. Govedich and Bonnie A. Bain. 2008. Parental Care and Sibling Rivalry in Glossiphoniid Leeches: A Perspective on the Evolution of Animal Behavior. International Leech Conference, Washington D.C., Nov. 14th 2008.

Fredric R. Govedich. 2004. Parental care in leeches. Australia New Zealand Association for the Advancement of Science talk, April 2004.

Fredric R. Govedich, Bonnie A. Bain and M. Burd. 2002. The Evolution of Parental Care in Glossiphoniid Leeches: a Phylogenetic Perspective on the Evolution of Animal Behaviour. Australasian Society for the Study of Animal Behaviour, 29th annual conference, pg. 12.

SELECTED PROFESSIONAL PRESENTATIONS WITH UNDERGRADUATES

Fredric R. Govedich, and Bonnie A. Bain. 2016. Leeches of North America. Society for Freshwater Science, 2016 Annual Meeting, Sacramento, CA. May 21-26, 2016.

Fredric R. Govedich, Bonnie A. Bain and Nayla Rhein. 2016. Examination of temporary rock pools in southern Utah. Society for Freshwater Science, 2016 Annual Meeting, Sacramento, CA. May 21-26, 2016.

- Matz Indergard Paul Spruell Fred Govedich, Paul Spruell. 2015. Dispersal of Fairy Shrimp Eggs Through Wind and Runoff. NCUR, held at Eastern Washington University, Cheney WA. April 16, 2015.
- Travis Wood, Fredric R. Govedich and Paul Spruell. 2013. Strength in Numbers: Behavioral Response of Speckled Dace and Virgin Spinedace to Invasive Crayfish. UCUR 2013, University of Utah. February 22, 2013.
- Heather Shumway, Fredric R. Govedich and Bonnie A. Bain. 2013. Feeding Strategies and Prey Preferences in Predacious Leeches. UCUR 2013, University of Utah.
- Heather Shumway, Fredric R. Govedich and Bonnie A. Bain. 2013. Feeding Strategies and Prey Preferences in Predacious Leeches. Festival of Excellence, Southern Utah University
- Heather Shumway, Bonnie A. Bain and Fredric R. Govedich. 2013. Pycnogonids of Izmir Bay, Turkey. Festival of Excellence, Southern Utah University
- Heather Shumway, Fredric R. Govedich, Bonnie A. Bain. 2012. Feeding strategies and prey preferences in predacious leeches. Poster presented at Southern Utah University College of Science and Engineering fourth annual Undergraduate Research Symposium, November 12, 2012.

SELECTED REFEREED PUBLICATIONS AND/OR BOOKS

- William E. Moser, Fredric R. Govedich, Alejandro Oceguera-Figueroa, Dennis J. Richardson and Anna J. Phillips. 2016. Subclass Hirudinida. In: Thorp and Covich's Freshwater Invertebrates Volume 2: Keys to Nearctic Fauna. Thorp, J.H. and D.C. Rogers eds. Academic Press. 244-259.
- Govedich, Fredric R., William E. Moser. 2014. Clitellata: Hirudinida and Acenthobdellida In: Thorp and Covich's Freshwater Invertebrates Volume 1: Ecology and General Biology. Thorp, J.H. and D.C. Rogers eds. Academic Press. 565-588.
- Terri J. Hildebrand, Fredric R. Govedich, and Bonnie A. Bain, 2014. Hands-On Laboratory Simulation of Evolution: An Investigation of Mutation, Natural Selection, and Speciation. *The American Biology Teacher* 76(2):132-136.
- Moser, William E., Dennis J. Richardson, Charlotte I. Hammond, Fredric R. Govedich and Eric A. Lazo-Wasem. 2012. Resurrection and Redescription of *Placobdella rugosa* (Verrill, 1874) (Hirudinida: Glossiphoniidae). *Bulletin of the Peabody Museum of Natural History* 53(2):375-381.
- Govedich, Fredric R., William E. Moser, Stuart Gelder, Bonnie A. Bain, Roy Brinkhurst and Ronald W. Davies. 2010 Freshwater Annelida. In: *Ecology and Classification of North American Freshwater Invertebrates*. 3rd Edition. Thorp, J.H. and A.P. Covich eds. Academic Press.
- Davies, Ronald W., Fredric R. Govedich and William E. Moser. 2009. Leech parasites of birds. In: *Parasitic diseases of wild birds*, C. Atkinson (ed). Iowa State Press.
- Moser, William E., Fredric R. Govedich and Donald J. Klemm. 2009. Annelida, Hirudinea (Leeches). In: *The Encyclopedia of Inland Waters*. Elsevier.

SELECTED REFEREED PUBLICATIONS WRITTEN WITH UNDERGRADUATE INVOLVEMENT:

- Burd, Martin, Fredric R. Govedich and Laura Bateson. 2006. Sibling competition in a brood-tending leech. *Proceedings of the Royal Society B: Biological Sciences*, 237(1600):2461-2466
- David Paez, Fredric R. Govedich, Bonnie A. Bain, Mark Kellett and Martin Burd. 2004. Costs of parental care on hunting behaviour of *Helobdella papillornata* (Euhirudinea: Glossiphoniidae). *Hydrobiologia*, 519:185-188.

Tan, Gene N., Fredric R. Govedich and Martin Burd. 2004. Social group size, potential sperm competition, and reproductive investment in a hermaphroditic leech, *Helobdella papillornata* (Euhirudinea: Glossiphoniidae). *Journal of Evolutionary Biology* 17:574-580.

PROFESSIONAL INVOLVEMENT

Professionally I serve as a both an editor and peer reviewer for scientific journals, and participate on graduate committees. I have served as a SUU faculty Senator and on the biology and college curriculum committees, assessment committee, the University Press committee and as a Undergraduate Research and Scholarship reviewer, liaison, mentor, judge and advisory board member. As part of my community service I serve as a judge coordinator and judge for the Southern Utah Science and Engineering Fair and as a member of the advisory board.

PROFESSIONAL BIOGRAPHY

Fredric R. Govedich received a PhD in Biology in 2001 from Monash University, Melbourne, Australia. He is interested in various aspects of aquatic ecology, animal behavior, and invertebrate evolution, including the evolution of parental care strategies in leeches, leech population genetics, leech systematics, and the reconstruction of the evolutionary relationships (phylogeny) of invertebrate groups, predator-prey interactions, feeding behavior, and migration within and between systems (migration, dispersal, etc.). Currently he is working on several aspects of population biology, evolutionary biology and animal behavior, including the evolution of reproductive strategies, parental care, sex allocation, and paternity in freshwater glossiphoniid leeches. In addition he is on the management team for iUTAH an interdisciplinary research and training program aimed at strengthening science for Utah's water future.

Co Principal Investigator

Jacqueline Grant, Ph.D.

Assistant Professor of Biology

Director, Garth and Jerri Frehner
Museum of Natural History

Jacqueline Grant

Southern Utah University
351 W. University Blvd.
Cedar City, UT 84720
435-865-8549
jacquelinegrant@suu.edu

A. Education

Cornell University / Ph.D.

AUGUST 1997 - JANUARY 2004, ITHACA, NY 14850
Neurobiology and Behavior (Chemical Ecology, Population Genetics, Behavior)

Cornell University / M.S.

AUGUST 1995 - AUGUST 1997, ITHACA, NY 14850
Animal Science (Nutritional Toxicology)

Texas A&M University / B.S.

AUGUST 1986 - AUGUST 1990, COLLEGE STATION, TX 77840
Biochemistry

B. Professional Experience

Southern Utah University / Assistant Professor of Biology,
Department of Biology
351 W. University Blvd.

AUGUST 2012 - PRESENT, CEDAR CITY, UT 84720

Southern Utah University / Director, Garth and Jerri Frehner Museum of Natural History, College of Science and Engineering

JANUARY 2012 - PRESENT, CEDAR CITY, UT

Southern Utah University / Adjunct Professor of Biology, Department of Biology

AUGUST 2011 - MAY 2012, CEDAR CITY, UT

The Pennsylvania State University / Senior Lecturer of Wildlife and Fisheries Science, School of Forest Resources (now Department of Ecosystem Science and Management)

AUGUST 2008 - AUGUST 2011, STATE COLLEGE, PA

The Pennsylvania State University / Graduate Faculty

AUGUST 2008 - AUGUST 2011, STATE COLLEGE, PA

Michigan Technological University / Assistant Professor, School of Forest Resources and Environmental Science

AUGUST 2006 - AUGUST 2008, HOUGHTON, MI

Michigan Technological University / Graduate Faculty

AUGUST 2006 - AUGUST 2010, HOUGHTON, MI

Colorado State University / David H. Smith Conservation Research Fellow, Natural Resource Ecology Laboratory

AUGUST 2004 - AUGUST 2006, FORT COLLINS, CO

C. Pertinent

Teaching Experience

Courses taught at Southern Utah University:

BIOL 2500 Environmental Biology / Southern Utah University

FALL 2014, General Education

BIOL 2500 Environmental Biology: Semester in the Parks /

Southern Utah University

FALL 2016, General Education

BIOL 3060 Genetics / Southern Utah University

SPRING 2015, FALL 2015 & 2016, Service Learning Integration

BIOL 3065 Genetics Laboratory / Southern Utah University

SPRING 2015, FALL 2015 & 2016

BIOL 3390 Mammalogy / Southern Utah University

FALL 2013 & 2015, Service Learning Integration

BIOL 3395 Mammalogy Laboratory / Southern Utah University

FALL 2013 & 2015, Service Learning Integration

BIOL 3450 Comparative Vertebrate Studies / Southern Utah University

SPRING 2015

BIOL 3455 Comparative Vertebrate Studies Laboratory / Southern Utah University

SPRING 2015

BIOL 4650 Capstone: Conservation Biology / Southern Utah University

SPRING 2013 & 2016, Service Learning Designated Course

—

D. Teaching Awards

2016 - Southern Utah University Influencer Certificate in recognition of dedicated service and leadership for the benefit and influence of the lives of SUU students

2016 - Southern Utah University Achievement in Experiential Learning Award

2015 - Utah Campus Compact Service Learning Award

2012 - Southern Utah University Service Learning Award

2011 - Penn State University, School of Forest Resources, Outstanding Wildlife and Fisheries Science Professor Award

—

E. Selected Publications

**Indicates graduate student coauthor

Grant, JB and D Patterson*. **2016** . Innovative arts programs require innovative partnerships: A case study of STEAM partnering between an art gallery and a natural history museum. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas. Special Issue, Drawing from Within*. 89: 144-152.

doi.org/10.1080/00098655.2016.1170453

Weeg, MS and **JB Grant** . **2016** . A reliable, non-invasive technique for measuring growth in tadpoles exposed to salt. *Environmental Toxicology and Pharmacology*. 45:95-97.

doi.org/10.1016/j.etap.2016.05.018

RL Hale, A Armstrong, MA Baker, S Bedingfield, D Betts, C Buahin, M Buchert, T Crowl, RR Dupont, JR Ehleringer, J Endter-Wada, C Flint, **J Grant** , S Hinners, JS Horsburgh, D Jackson-Smith, AS Jones, C Licon, SE Null, A Odame, DE Pataki, D Rosenberg, M Runburg, P Stoker and C Strong. **2015** . iSAW: Integrating Structure, Actors, and Water to Study Socio-Hydro-Ecological Systems. *Earth's Future*. 3:111-132.

DOI: 10.1002/2014EF000295.

Hoverman, JT, Z Olson, S LaGrange, **J Grant**, and RN Williams. **2014** . A guide to larval amphibian identification in the field and laboratory. Purdue University Cooperative Extension Service, West Lafayette, IN. FNR-496-W.

H. Funding -**External Awards**

Grants awarded for research and educational outreach programs

2016 NSF iUTAH EPSCoR Research Catalyst Grant Faculty Release Program. \$5,000 plus \$1,000 travel

Coverage of award: http://iutahepsco.org/news_article.php?aid=245

2016 Utah Division of Arts and Museums Technical Collections Assistance Grant. \$4,000

2015 NSF iUTAH EPSCoR Research Catalyst Grant: Enhancing biodiversity, water conservation, and urban agriculture through green roof infrastructure. \$15,807

2014 NSF iUTAH EPSCoR EOD Catalyst Grant: Green roof agriculture exhibit and outreach at the Frehner Museum. \$8,223.51 2014 Society for the Study of Evolution \$500

2013 NSF iUTAH EPSCoR EOD Catalyst Grant: Water cycle dynamics at the SUU green roof. \$12,344

2010 - Wild Resource Conservation Program, The Department of Conservation and Natural Resources, Pennsylvania: Identification of amphibian species most at risk from climate change. \$30,000

2007 - USDA McIntire-Stennis: How connected are forest landscapes? Measurement of functional connectivity with a novel combination of GIS-based models and genetic data from boreal chorus frogs.

\$7,000

DOI-2021-07 00507

2004 - The Nature Conservancy/Cedar Tree Foundation: Functional landscape connectivity. \$119,385.

Total external funding awarded in last 12 years: \$203,259

SUU News coverage of research:

Green is the new black

<http://www.suunews.com/news/2016/sep/15/green-new-black/>

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.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE
Karen Wilson	Director of Sponsored Projects
APPLICANT ORGANIZATION	DATE SUBMITTED
Southern Utah University	01/31/2017

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

[Attachment A]

BUREAU OF LAND MANAGEMENT
Utah State Office
Grants & Cooperative Agreements



PROJECT PROPOSAL

Instructions: A Project Proposal must be submitted with the Standard Form (SF) 424 Application for Federal Assistance for all BLM Assistance Agreements. Complete each section below. Use additional sheets as needed.
**If this is a continuation of existing BLM cooperative agreement, identify the current BLM agreement number and project title below.

Person Submitting Proposal: B. Derrick Taff Date: 1/31/2017

Organization Name: The Pennsylvania State University

**Agreement or Announcement No.: L17AS00001

** Agreement or Announcement Title: BLM FY2017 Bureau-wide National Conservation Lands Scientific Studies Support Program (Formerly known as National Landscape Conservation System Research Support Program)

Estimated Period of Performance: April 1, 2017 – December 31, 2018

BLM POC: Jabe Beal and Allison Ginn
Proposed Project Location: Grand Staircase-Escalante National Monument

This work will occur on: Public Lands Both Public & Private Lands

MISSION:

Our mission is to execute rigorous scientific examinations, that aid in informing strategies to properly inventory, monitor, and adaptively manage ecological and experiential resources and conditions in parks and protected areas.

Project Title: Inventory and Monitoring Research for Ecological and Social Conditions in BLM's GSENM WSA's.

Protected areas within the National Conservation Lands System (NCLS), such as Grand Staircase-Escalante National Monument (GSENM), and specifically the Monument's Wilderness Study Areas (WSAs), are under mandate to apply scientific examinations of the resources therein, to inform appropriate inventorying, monitoring, and adaptive management that ensures conservation of these special places for future generations. This proposed research will address this need.

OBJECTIVE:

In accordance with the mandates requiring that the Bureau of Land Management (BLM) properly maintain and enhance the conservation values on properties within the NCLS, this proposed research facilitates this policy, meeting suggested research within national and state-wide plans and strategies, specifically improving and standardizing inventorying and monitoring, gaining understanding of experiential factors from visitors, and synthesizing findings in a manner that informs adaptive management of these special places. The proposed research would occur in Utah National Conservation Lands (NCLs), within GSENM, specifically examining three WSA's, and adjacent zones within the Monument, that are experiencing high volumes of visitor use and associated resource and experiential impacts.

Specifically, the objectives of this research are to monitor and record backcountry recreational use impacts in the high-use WSAs in GSENM including the North Escalante Canyon Gulch, Phipps Death Hollow, and Scorpion, and utilize the data collected to identify critical issues and adapt monitoring protocols to aid the Bureau of Land Management (BLM) and GSENM in future planning and management decisions. Specifically, we intend to develop data collection techniques that utilize electronic

[Attachment A]

forms and GPS-based data dictionaries for streamlined and transferable collection, analysis and data entry protocols. Additionally, we intend to interview $n \sim 25$ diverse user-groups including backcountry overnight, and day-users regarding the WSAs and surrounding zones, to examine how current social and resource conditions are aligning, or misaligning with visitor expectations. Finally, we will synthesize these data to develop proposed indicators that can be replicated, re-measured and monitored over time; direct and indirect management strategies stemming from these findings will also be developed, to aid with adaptive management strategies of these NLCS WSAs and adjacent lands in the future.

Methods will utilize robust strategies including ratio scale continuous metric measures, which will allow statistical comparisons over time, through repeatable, digital data collection measures. Aligning visitor interviews will feature semi-structured questions regarding experiential conditions, which will be recorded, and analyzed so that themes, and potential indicators of quality can be created and assessed in the future. Collaboration between the expert team, including recreation ecologists, social scientists, and BLM Memorandum of Understanding (MOU) partners at the Leave No Trace Center for Outdoor Ethics (with an established and ongoing BLM MOU with the Center for >20 years), and staff at GSENM and BLM state offices will ensure that this project and associated outreach from these results, informs state and national management of WSAs.

RESEARCH THEME AND TECHNICAL APPROACH:

- Research Identified in Unit Science Plans (for National Monuments, National Conservation Areas, and Similar Designations)***
- Effectiveness Research***
- Standardized Inventory and Monitoring***
- Research Syntheses***
- Citizen Science***
- Other Management-Driven Research***
- All themes and goals apply***

Background

GSENM is a NLCS that contains ~1.9 million acres managed by the BLM – the largest national monument in the contiguous U.S., the first managed by the BLM, and the last place in the continental U.S to be mapped. The area contains stunning landscapes, unique topography and ecosystems containing natural, cultural, and paleontological resources, which facilitate varied recreational and commercial opportunities. GSENM is situated within an area surrounded by protected areas, managed by other federal entities such as the U.S. Forest Service and National Park Service. The area contains numerous designated wilderness areas, and within GSENM specifically, the BLM manages sixteen WSAs which require that management retain the wilderness character of the areas, such as maintaining naturalness and outstanding opportunities for recreation (GSENM Management Plan, 2000; Section 202 FLPMA). Recreational opportunities in GSENM include activities such as camping and backpacking, climbing and canyoneering, off-highway vehicle (OHV) use, hunting, fishing, and stock use, as education and interpretation. Commercial entities are also allowed under permit, including livestock grazing and outfitter and guide operations.

Need

As in many protected areas where managing recreation opportunities while trying to conserve the unique ecosystems sought by recreationists, the managers at GSENM must strike a balance between use and preservation of the resources (Grumbine, 1994). This is particularly challenging in an area like GSENM and southern Utah generally, where visitors may be local, or international, participating in a variety of activities, and possibly recreating in numerous types of protected areas with varying levels of direct and indirect management. This challenge is confounded by increased use within the state of Utah, thought to be contributed to recent marketing strategies by the state (e.g., “The Mighty Five”, “Utah – Life Elevated”). Inevitably, recreational use, (and in particular increases in use and types of uses), leads to resource impacts (Hammit, Cole, & Monz, 2015). Specific to the Monument, the limited social science that has been conducted, suggests that visitors to GSENM seek naturalness and tranquility in the remote

[Attachment A]

and rugged landscape, which promotes self-reliance and discovery (Casey, 2014). However, these characteristics are in jeopardy due to the increased use of the area, and the associated impacts to the resources such as vandalism, trash, human waste, and crowding (Casey, 2014).

Mandates and Planning Strategies

At a national and state level, the BLM has developed strategic plans to inform management approaches that mitigate ecological and social impacts on NCLs such as GSENM (The BLM NLCS Science Strategy, 2007; (NLCS 15-year Strategy (2010-2025): The Geography of Hope, 2011; NCL BLM Utah 5-Year Strategy for 2014-2019). Thus, GSENM is charged with providing “sustainable recreation” opportunities, or those that “provide for environmental sustainability while fulfilling the social and economic needs of present and future generations” (NLCS 15-year Strategy (2010-2025): The Geography of Hope, 2011). The 15-year strategy, as prescribed in the BLM’s “Geography of Hope” suggests that the agency must use science to aid in managing conservation that provides for compatible uses that protect the resources and values of GSENM; manage the area collaboratively, considering other agencies, and land owners that influence the larger ecosystem in which the Monument is situated; and increase the public’s awareness and understanding in a manner that promotes current and long-term stewardship (2011). Specifically, the plan suggests that GSENM “develop measures and conduct management reviews” (Theme 1; Goal 1a) to evaluate effectiveness, by generating and maintaining “baseline inventory and geo-referenced data of NLCS values” (Theme 1; Goal 1b). Furthermore, GSENM must “identify research needs and incorporate physical, biological, and social science” to inform adaptive management, interpretation and outreach (Theme 1; Goal 1c). This strategy specifically suggests that the agency “conduct periodic visitor surveys” to examine the experiential qualities of their needs (Theme 2; Goal 2d), and through the application of science to inform interpretive strategies, continue to support programs such as “Leave No Trace to foster outdoor ethics and stewardship” (Theme 3; Goal 3d).

GSENM contains 16 WSAs, requiring special management, which has also been outlined in strategies such as the NCL BLM Utah 5-Year Strategy for 2014-2019. Specifically, WSAs contain wilderness characteristics, that include: “roadless areas of at least 5,000 acres” or “of manageable size;” appears to contain “naturalness” “affected primarily by the forces of nature;” and “provides for outstanding opportunities for solitude or primitive and unconfined types of recreation” (NCL BLM Utah 5-Year Strategy for 2014-2019). The North Escalante Canyon Gulch, Phipps Death Hollow, and Scorpion WSAs are situated in the areas of GSENM that receive the most visitation. Furthermore, the types of high visitation occurring within these WSAs – both day-use and overnight – have the potential to cause resource and experiential impacts. Furthermore, the NCL BLM Utah 5-Year Strategy for 2014-2019 suggests that state and field-level staff must prioritize WSAs, and specifically develop monitoring strategies for these unique places (Theme 1; Goal 1b). Specific to GSENM, the NCL BLM Utah 5-Year Strategy for 2014-2019 indicates that the Monument must implement plans for developing a comprehensive digital data and management structure based on scientifically-sound strategies (Theme 1; Goal 1c). Finally, the NCL BLM Utah 5-Year Strategy suggests that GSENM must expand public engagement and stewardship efforts, through indirect management such as education and interpretation (Theme 3; Goal 3d).

Leave No Trace-based strategies are the most prominent form of indirect management in protected areas (Marion, 2014). The program has its origins in wilderness settings, such as the WSAs of focus in this proposed research. However, there is currently limited adoption of Leave No Trace communication and education strategies in GSENM. Yet, the BLM has an existing MOU with the Leave No Trace Center, and the collaborative researchers proposing this research, have extensive experience researching Leave No Trace from both ecological and social aspects (see Lawhon et al., 2013; Marion 2014; Taff et al., 2014). Furthermore, the proposed research will not only provide applicable information for adaptive management and planning, these studies will also expand the science behind Leave No Trace-based research, and incorporate the Center for Outdoor Ethics in these efforts through the development of outreach tools.

Research Addressing Mandates, Needs, and Strategies

This proposed research meets all of these needs, strategies, and mandates discussed above, thus

[Attachment A]

improving the management of this NCL, in a manner that could also be informative for other protected areas. First, this research will develop a digital data dictionary that can be used to monitor and record ecological impacts associated with recreation in high-use in GSENM's North Escalante Canyon Gulch, Phipps Death Hollow, and Scorpion WSAs. Second, the collaborative team of researchers and practitioners will employ the digital dictionary to geo-spatially reference and monitor these areas, evaluating impacts. This research will identify critical issues that can be monitored over time, and inform adaptive management strategies that can mitigate impacts. Third, this research would employ semi-structured qualitative interviews with approximately 25 user-groups – both day-users and overnight – regarding these high-use WSAs, to further understand experiential components of the visitor experience as it relates to ecological and social conditions in these areas. Forth, our collaborative team of researchers will synthesize these data to develop proposed indicators that can be replicated, re-measured and monitored over time. Finally, based on these robust methods and resulting findings, our research team will suggest direct and indirect management strategies, to aid with adaptive management approaches for these NLC WSAs and adjacent lands in the future.

Therefore, applying inventorying and monitoring strategies of both ecological and social data, will provide foundational knowledge, filling gaps and understanding for this NCL while adhering to policies and strategies prescribed by the national and state level of the BLM. Furthermore, this paired ecological and social approach, and the results stemming from this methodology, will inform management strategies for the surrounding protected areas managed by the BLM and other agencies, thus further meeting strategic partnership plans outlined through themes within the state-level NCL BLM Utah 5-Year Strategy and national BLM documents such as the “Geography of Hope” and the BLM NLCS Science Strategy.

METHODOLOGICAL/TECHNICAL APPROACHES:

As researchers we have complementary, but diverse skillsets that marry the recreational ecology and social science approaches. Dr. Marion has extensive experience researching visitor impacts and informing sustainable recreation management, while Dr. Wimpey's expertise focuses on geospatial information analysis, and Dr. Taff's area of expertise is in human dimensions of natural resources, focused on influencing protected areas visitor behaviors (based within Leave No Trace approaches) to align with management objectives. All three researchers have vast experience applying rigorous and defensible research to inform visitor use management in remote backcountry settings of parks and protected areas such as GSENM. Together, these researchers will collaboratively apply the following technical approach to this project:

- Convert existing paper-based data collection to spatially explicit digital data collection linked to digital imagery that permits a range of statistical and GIS analyses and summarization;
- Provide quantitative, spatially explicit (i.e., all data will be recorded with GPS coordinates), data collection of existing visitor (day and overnight-users) impacts within GSENM's North Escalante Canyon Gulch, Phipps Death Hollow, and Scorpion WSAs through a digital data dictionary
 - Characterize the type, extent, and severity of visitation-related resource impacts to vegetation and soils;
 - Obtain Monument research permit;
- Conduct semi-structured qualitative interviews with approximately 25 user-groups – both day-users and overnight – regarding these high-use WSAs, to further understand experiential components of the visitor experience as it relates to ecological and social conditions in these areas
 - Interviews will be recorded and transcribed for analysis;
 - In addition to the Monument research permit, also obtain Office of Management and Budget approval for social science examination on federal lands, as well as Institutional Review Board approval through Penn State University;
- Analyze and synthesize these data (both ecological and social described in above as 2 and 3) to develop proposed indicators that can be replicated, re-measured and monitored over time
 - Specifically suggest and inform direct and indirect management strategies, to aid with adaptive management approaches for these NLC WSAs and adjacent lands in the future (findings could also apply to other WSAs with similar ecosystems and visitor uses)

[Attachment A]

- Identify critical issues with the ecological impact results, that can be monitored over time, to inform adaptive management strategies that can mitigate impacts;
- Facilitate incorporation of monitoring data into interagency Visitor Use Management (VUM) planning frameworks and to integrate monitoring data into ongoing adaptive management decision-making;
- Consult with GSENM staff in applying monitoring data and recreation ecology knowledge to resolve visitor impact management problems through improved site management and visitor management regulations;
- Partner with the Leave No Trace Center for Outdoor Ethics, to pair ecological findings with the qualitative experiential themes (i.e., possible experiential indicators that can be monitored over time) to established indirect management approaches through applying Leave No Trace-based messaging/outreach specific to GSENM's WSA environment and visitor demographic.

Goals, Milestones, and Measurements

1. Project Initiation
 - a. E-Meeting held to initiate project
 - b. Further refine methodologies
 - c. Identify key personnel, existing data and schedule/logistics
 - d. Obtain GSENM research permit
2. Develop Data Dictionary and Inventory Protocol
 - a. Work within team and with BLM key staff to draft and refine digital forms and tools for WSA-based data collection
 - b. Finalization through field testing with team and BLM staff during September/October field work in GSENM
3. Develop semi-structured interview script for qualitative interviews with a range of user-groups focused upon the key WSAs
 - a. Obtain Office of Management and Budget approval of interview instrument
4. 2017 Field Data Collection September/October
 - a. Recreation ecology data collection
 - b. Qualitative interview data collection
 - c. Wrap up meeting with BLM staff at conclusion of field work
5. Data analysis, synthesis and reporting
 - a. Draft and review of a report for GSENM including:
 - i. Documentation of method(s) development
 - ii. Methodological manuals for field data collection
 - iii. Summary of results of ecological and social/experiential inventory
 - iv. Overview of recommendations for management practices including specific recommendations/outreach tools developed collaboratively with the Leave No Trace Center for Outdoor Ethics

Summary Project Schedule

Milestone / Task / Activity	Start Date	Completion Date
Project initiation	April 2017	April 2017
Develop data dictionary and inventory protocol	May 2017	May 2017
Develop semi-structured interview script and submit for OMB approval	May 2017	June 2017
2017 Field data collection	September 2017	October 2017
Data analysis, synthesis and draft reporting	October 2017	May 2018
Revised final report draft to GSENM, state offices and national BLM NCL officials	June 2018	September 2018
Work with GSENM, state offices and national BLM NCL and the Leave No Trace Center to	October 2018	December 2018

implement synthesized results/outreach tools		
--	--	--

PUBLIC BENEFIT:

There are numerous benefits to the public associated with this proposed research. The ecological and experiential conditions (i.e., sustained health of resources and conditions) of GSENM, and specifically its WSAs, are vital to sustain the mission and ensure continued quality recreation opportunities. This research will continue the development of indicators and monitoring associated with recreation-related impacts and experiential conditions, in a time when use and demands on the resource are increasing. The analyses generated from this project will be applied to improve the sustainability of the resources, by informing direct and indirect management strategies that can influence visitor behaviors in a manner that aligns with GSENM WSA management objectives. Thus, this project will provide the vital information needed to ensure monitoring that can inform and enable management to sustain ecological health, which is fundamental for quality recreational experiences.

QUALIFICATIONS, PAST PERFORMANCE, ACTIVE BLM COOPERATIVE AGREEMENT:

Drs. Taff, Wimpey, and Marion, described below, currently have an ongoing project with the BLM, titled “*Collaborative research to monitor and record backcountry use impacts at Grand Staircase Escalante National Monument, 2016-2021*” – Agreement # L16AS00032), which aligns with this proposed research, but does not specifically represent WSAs, nor contain a social science, experiential component or outreach element with the Leave No Trace Center. The proposed research would benefit from the existing project, because the researchers will be able to reduce costs as a result of already being onsite and working with GSENM.

Principle Investigator

Derrick Taff, Ph.D.

Assistant Professor, Recreation, Park and Tourism Management, Pennsylvania State University

Bdt3@psu.edu

814-867-1756

Dr. Taff’s responsibilities will include overseeing administration of the project and facilitating the development of all associated products. Dr. Taff will facilitate consultation with GSENM staff regarding visitor management, assisting with all protocol development, training of field staff, data analysis and synthesis, and implications that will result in outreach materials.

Dr. Taff holds a Ph.D. in Human Dimensions of Natural Resources, and he has conducted social science research in numerous protected areas, including BLM’s GSENM, to help inform management efforts based on rigorous scientific approaches. His research focuses upon communication as it pertains to visitor-use management, visitor behaviors, and social and ecological wellbeing in parks and protected areas. Much of his research takes place in wilderness backcountry settings, consisting of resources similar to those found in GSENM. He has conducted federally funded social science research across a span of protected areas including Grand Teton National Park, Sequoia National Park, Rocky Mountain National Park, Mount Rainier National Park, Bandelier National Monument and Denali National Park and Preserve. He has also conducted research in City of Boulder Colorado Open Space and Mountain Parks, Wyoming State Parks, and Pennsylvania State Forests. He has published over 30 research reports, journal articles, and book chapters, aimed at aiding protected areas managers’ influence of visitor behaviors to align with management objectives. A full list of these publications can be found at:

<http://www.hhdev.psu.edu/rptm/directory/Bio.aspx?id=www.hhdev.psu.edu/rptm>. Dr. Taff is an avid

hiker and backpacker, a Leave No Trace Master Educator, a board member for the Society for Wilderness Stewardship, and a Wilderness Mentor for the Eppley Institute for Parks and Public Lands.

Pennsylvania State University’s Recreation, Park and Tourism Management Department, which will oversee and facilitate this research, has the expertise, facilities, and equipment to administer ongoing support for the duration of this project.

Professional Services

[Attachment A]

Jeremy Wimpey, Ph.D.
Applied Trails Research and Adjunct Faculty, Recreation, Park and Tourism Management, Pennsylvania State University
Jeremyw@appliedtrailsresearch.com
443-629-2630

Dr. Wimpey's responsibilities include logistical and administrative support to the project and development of geo-spatially bound and digitally referenced protocols with Drs. Marion and Taff. Dr. Wimpey will provide GIS and GPS technology support for integration of digital field data collection methods to the team and will collect field data with the team for the duration of the project. Jeremy Wimpey, PhD. is the sole proprietor of Applied Trails Research, LLC. Dr. Wimpey is one of the country's leading recreation ecology practitioners. His applied field investigations help public lands managers understand the phenomena and mechanisms associated with visitor-use-related-impacts to wildlife, water, vegetation, and soils as and impacts to other recreationists (degradation or enhancement of users' experience) in outdoor settings. His experience focuses on estimation of recreation demand, wildland recreation classification/resource inventory, public involvement methodologies, social impact analysis, state comprehensive planning, site design, land acquisition, use measurement, impact assessment, and facility operation/maintenance. His unique background—academic, outdoor enthusiast, entrepreneur—help bring an innovative and holistic approach to providing solutions for recreation management challenges. Dr. Wimpey has collaborated with the National Park Service and US Forest Service, supported the work of research institutions, and published numerous trail impact and trail management works in academic journals and popular sources.

Jeff Marion, Ph.D.
Field Station Leader/Adjunct Professor
Virginia Tech University
jmarion@vt.edu
540-231-6603

Dr. Marion will work with Drs. Taff and Wimpey and the Leave No Trace Center as well as GSENM staff to develop recreation ecology protocols, train and assist field staff, and consult with Monument staff on visitor impact management problems.

Dr. Marion is an avid canyoneering enthusiast who has visited Grand Staircase-Escalante National Monument three times for canyoneering in the last five years. He is enthusiastic about returning to meet and work with Monument staff in developing visitor impact inventory and monitoring protocols and consulting on alternative visitor impact management strategies and actions.

Dr. Marion conducts research on visitor impacts and sustainable recreation management for the National Park Service and other protected natural areas. He has expertise in carrying capacity planning, decision-making, and management, including LAC, VERP and the new Visitor Use Management (VUM) framework (see attached paper). He has authored more than 150 scientific publications and routinely consults with park and recreation managers to develop campsite and trail monitoring protocols and to improve the sustainability of recreation visitation to avoid or minimize resource and social impacts. A founding member of the national Leave No Trace program's board of directors, he chaired its Educational Review Committee for a decade, helping to develop and refine a diverse array of low impact principles and practices. In 2014 he authored the official comprehensive book of Leave No Trace practices for the U.S. Leave No Trace program.

Dr. Marion has developed extensive expertise from his research involving the development and application of campsite and/or trail inventory and monitoring programs at the following protected natural areas:

Delaware Water Gap National Recreation Area, New River Gorge National River, Upper Delaware Scenic & Recreational River, Shenandoah National Park, Great Smoky Mountains National Park, Big Bend National Park, Everglades National Park, Acadia National Park, C&O Canal National Historical Park, Big Cypress National Preserve, George Washington Memorial Parkway, Isle Royale National Park, Zion National Park, Haleakala National Park, Appalachian National Scenic Trail, Huascarán National Park (Peru), Torres del Paine National Park (Chile), Big South Fork National River and Recreational

[Attachment A]

Area, Denali National Park, Arctic National Wildlife Refuge, Boundary Waters Canoe Area Wilderness, Daniel Boone National Forest, and 11 Wilderness areas of the Jefferson National Forest.

Dr. Jeff Marion has conducted numerous research projects and published associated guidance on the development of campsite and trail impact monitoring and management practices. For a complete listing visit: https://profile.usgs.gov/jeff_marion

Ben Lawhon
Education Director,
Leave No Trace Center for Outdoor Ethics
Ben@LNT.org
303-442-8222

Ben and the Leave No Trace Center will aid the lead researchers in developing outreach materials for implementation at GSENM and similar NLCs, based on the synthesized results of this project. Ben holds an MS in Human Dimensions of Natural Resources, and has been working with the Leave No Trace Center for Outdoor Ethics for more than 15 years. As their Education Director, he oversees the development of outreach materials for parks and protected areas globally. He has extensive experience developing education and communication strategies through the Center, based on rigorous ecological and social science.

REFERENCES:

- Bureau of Land Management National Landscape Conservation System Science Strategy (2007). BLM/WO/GI-06/027+6100.
- Casey, T. (2014). Recreation experience baseline study report for Grand Staircase-Escalante National Monument Executive Summary. Report published by The Natural Resource Center at Colorado Mesa University.
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- The National Landscape Conservation System 15-year Strategy (2010-2025). The Geography of Hope. (2011). Bureau of Land Management/WO/GI-11/013+6100. (www.blm.gov/wo/st/en/info/newsroom/2011/September/NR_09_30_2011.html).

BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 01/31/2019

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Cultural Resource Management: Supporting Scientific Studies of Archaeological Collections from Cedar Mesa Canyons	15.224	\$	\$	\$ 11,793.00	\$ 0.00	\$ 11,793.00
2.						
3.						
4.						
5. Totals		\$	\$	\$ 11,793.00	\$	\$ 11,793.00

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Tracking Number: GRANT12327304

Funding Opportunity Number: L17AS00001 Received Date: Feb 01, 2017 06:27:49 PM EST

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	Cultural Resource Management: Supporting Scientific Studies of Archaeological Collections from Cedar Mesa Canyons				
a. Personnel	\$ 7,452.00	\$	\$	\$	\$ 7,452.00
b. Fringe Benefits	2,410.00				2,410.00
c. Travel					
d. Equipment					
e. Supplies	175.00				175.00
f. Contractual					
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)	10,037.00				\$ 10,037.00
j. Indirect Charges	1,756.00				\$ 1,756.00
k. TOTALS (sum of 6i and 6j)	\$ 11,793.00	\$	\$	\$	\$ 11,793.00
7. Program Income	\$ 0.00	\$	\$	\$	\$

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SECTION C - NON-FEDERAL RESOURCES					
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS	
8. Cultural Resource Management: Supporting Scientific Studies of Archaeological Collections from Cedar Mesa Canyons	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	
9. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
10. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
11. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
12. TOTAL (sum of lines 8-11)	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	
SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ <input type="text" value="11,793.00"/>	\$ <input type="text" value="11,793.00"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
14. Non-Federal	\$ <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
15. TOTAL (sum of lines 13 and 14)	\$ <input type="text" value="11,793.00"/>	\$ <input type="text" value="11,793.00"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>
SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT					
(a) Grant Program	FUTURE FUNDING PERIODS (YEARS)				
	(b)First	(c) Second	(d) Third	(e) Fourth	
16. Cultural Resource Management: Supporting Scientific Studies of Archaeological Collections from Cedar Mesa Canyons	\$ <input type="text" value="11,793.00"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	
17. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
18. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
19. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
20. TOTAL (sum of lines 16 - 19)	\$ <input type="text" value="11,793.00"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	
SECTION F - OTHER BUDGET INFORMATION					
21. Direct Charges: <input type="text" value="\$10,037.00"/>		22. Indirect Charges: <input type="text" value="\$1,756.00"/>			
23. Remarks: <input type="text" value="Indirect cost rate determined by PNW CESU agreement (17.5%)."/>					

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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="02/02/2017"/>	4. Applicant Identifier: <input type="text"/>	
5a. Federal Entity Identifier: <input type="text"/>	5b. Federal Award Identifier: <input type="text"/>	
State Use Only:		
6. Date Received by State: <input type="text"/>	7. State Application Identifier: <input type="text"/>	
8. APPLICANT INFORMATION:		
* a. Legal Name: <input type="text" value="University of Utah"/>		
* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="876000525"/>	* c. Organizational DUNS: <input type="text" value="009095365"/>	
d. Address:		
* Street1: <input type="text" value="75 South 2000 East"/>	Street2: <input type="text"/>	
* City: <input type="text" value="Salt Lake City"/>	County/Parish: <input type="text" value="Salt Lake"/>	
* State: <input type="text" value="UT: Utah"/>	Province: <input type="text"/>	
* Country: <input type="text" value="USA: UNITED STATES"/>	* Zip / Postal Code: <input type="text" value="84112 8930"/>	
e. Organizational Unit:		
Department Name: <input type="text" value="ANTHROPOLOGY DEPARTMENT"/>	Division Name: <input type="text" value="COLL OF SOCIAL & BEHAV SCIENCE"/>	
f. Name and contact information of person to be contacted on matters involving this application:		
Prefix: <input type="text"/>	* First Name: <input type="text" value="LISBETH"/>	
Middle Name: <input type="text"/>	* Last Name: <input type="text" value="LOUDERBACK"/>	
Suffix: <input type="text"/>	Title: <input type="text" value="Assistant Professor"/>	
Organizational Affiliation: <input type="text" value="University of Utah"/>		
* Telephone Number: <input type="text" value="8015852634"/>	Fax Number: <input type="text"/>	
* Email: <input type="text" value="llouderback@anthro.utah.edu"/>		

DOI-2021-07 00522

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: <input type="text"/>		
Type of Applicant 3: Select Applicant Type: <input type="text"/>		
* Other (specify): <input type="text"/>		
* 10. Name of Federal Agency: Bureau of Land Management		
11. Catalog of Federal Domestic Assistance Number: 15.231		
CFDA Title: Fish, Wildlife and Plant Conservation Resource Management		
* 12. Funding Opportunity Number: L17AS00001		
* Title: BLM FY2017 Bureau wide National Conservation Lands Scientific Studies Support Program		
13. Competition Identification Number: <input type="text"/>		
Title: <input type="text"/>		
14. Areas Affected by Project (Cities, Counties, States, etc.): <input type="text"/> <input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>		
* 15. Descriptive Title of Applicant's Project: Ecosystems and Plant Resources of Archaeological Sites in the Four Corners Region, USA		
Attach supporting documents as specified in agency instructions. <input type="button" value="Add Attachments"/> <input type="button" value="Delete Attachments"/> <input type="button" value="View Attachments"/>		

Application for Federal Assistance SF-424	
16. Congressional Districts Of:	
* a. Applicant	UT 002
* b. Program/Project	UT 002
Attach an additional list of Program/Project Congressional Districts if needed.	
	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
17. Proposed Project:	
* a. Start Date:	05/01/2017
* b. End Date:	04/30/2022
18. Estimated Funding (\$):	
* a. Federal	24,874.00
* b. Applicant	0.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	24,874.00
* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?	
<input type="checkbox"/> a. This application was made available to the State under the Executive Order 12372 Process for review on	
<input type="checkbox"/> b. Program is subject to E.O. 12372 but has not been selected by the State for review.	
<input checked="" type="checkbox"/> c. Program is not covered by E.O. 12372.	
* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If "Yes", provide explanation and attach	
	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="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)	
<input checked="" type="checkbox"/> ** 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: WILLIAM
Middle Name:	
* Last Name:	ERNEST
Suffix:	
* Title:	Sponsored Proj Grant & Contrac
* Telephone Number:	801/581 4714
Fax Number:	801/581 3007
* Email:	william.ernest@osp.utah.edu
* Signature of Authorized Representative:	WILLIAM ERNEST
* Date Signed:	02/02/2017

DOI-2021-07 00524

Budget Narrative File(s)

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[Attachment B]

BUREAU OF LAND MANAGEMENT
Financial Assistance (Cooperative Agreements)



PROJECT PROPOSAL

(Suggested Format)

Instructions: A Project Proposal must be submitted with the Standard Form (SF) 424 Application for Federal Assistance for all BLM Assistance Agreements. Complete each section below. Use additional sheets as needed. **If this is a continuation of existing BLM cooperative agreement identify the current BLM agreement number and project title below.

Person Submitting Proposal: Randall Irmis, PhD Date: 01/23/2017

Organization Name: Natural History Museum of Utah, University of Utah

**Agreement or Announcement No.: L17AS00001 / L12AC20378

** Agreement or Announcement BLM FY2017 Bureau-wide National Conservation Lands
Title: Scientific Studies Support Program

Estimated Period of Performance: 05/01/2017 to 04/30/2018

BLM POC: _____
Proposed Project Location: Grand Staircase-Escalante National Monument

This work will occur on: Public Lands Both Public & Private Lands

MISSION AND OBJECTIVE:

The founding presidential proclamation for Grand Staircase-Escalante National Monument (GSENM) highlighted this area as a scientific frontier for geology and paleontology, emphasizing that its establishment preserved “...one of the best and most continuous records of Late Cretaceous terrestrial life in the world (Clinton, 1996).” These words could not have been more prophetic; the decade and a half of paleontological survey and scientific research on the Kaiparowits Plateau in GSENM have elucidated spectacular ancient ecosystems from 95-75 million years ago that teemed with a vast array previously un-recognized species of amphibians, turtles, lizards, crocodylians, dinosaurs, early mammals, birds, and many other organisms. These discoveries are a direct result of a fifteen-year-long collaborative inventory, collection, and research effort between the Natural History Museum of Utah (NHMU) and GSENM that is just now beginning to paint a much more lucid picture of the significance of the Kaiparowits Plateau’s fossil resources.

This GSENM-NHMU collaboration is guided by Monument Management Plan Decisions SCI-1, SCI-2, and PAL-1, which directs that critical fossil resources deserve inventory and protection (collection). Not only has this project revealed the presence of giant dinosaur-eating alligators, unique new species of horned, duck-billed, and tyrant dinosaurs, as well as fossil dinosaur skeletons covered in skin impressions, but it has surveyed nearly 100,000 acres of fossiliferous Late Cretaceous bedrock exposures, discovering over a thousand significant paleontological sites, and saving thousands of rare fossils from destruction by erosion and/or human impact.

The paleontological survey and research also provides a positive public face for natural science at GSENM and on BLM-managed lands in general, as it is a gateway towards a better public understanding of scientific resources on federal lands. Results from the GSENM-NHMU collaboration reach *millions* of people statewide, nationally, and internationally, through BLM

visitor centers, NHMU museum visitation, statewide NHMU education and outreach, and national and international media coverage of GSENM-NHMU scientific research.

By conducting paleontological inventory of the nearly one million acres of Late Cretaceous bedrock exposures at GSENM, this collaborative project not only identifies and protects the fossil resources for which the monument was founded, but also opens a critical window onto the unique ancient ecosystems that are preserved nowhere else on earth. Our work over the past 14 years has discovered nearly three thousand fossil specimens of species of dinosaurs, crocodylians, turtles, lizards, mammals, and other organisms that are only found in the 95-75 million-year-old rocks at GSENM; at least twenty of the dinosaur species alone are completely new to science. These ecosystems represent the height of dinosaur diversity, just 10 million years before they went extinct.

Even more important than the discovery of numerous new species is that these data demonstrate that each local region of western North America during the Late Cretaceous greenhouse world had its own unique ecosystems. We thus look to test the hypothesis that latitudinal differences in climate controlled the evolution of life on land during this time. Furthermore, can we determine if these regional differences were controlled by repeated rise and fall of sea level through the Late Cretaceous? Such research questions are directly relevant for understanding the biotic effects of *current anthropogenically-forced global climate change, which is leading to a warming high-CO₂ world not unlike the Late Cretaceous.*

RESEARCH THEME AND TECHNICAL APPROACH:

Please identify which themes apply to your projects (please check boxes that apply by placing cursor in front of the box and clicking twice):

- Research Identified in Unit Science Plans (for National Monuments, National Conservation Areas, and Similar Designations)***
- Effectiveness Research*
- Standardized Inventory and Monitoring***
- Research Syntheses*
- Citizen Science*
- Other Management-Driven Research* All themes and goals apply

Fieldwork - We propose to continue the inventory, monitoring, and scientific collection of Late Cretaceous bedrock exposures in GSENM, starting with Wahweap Headwaters area and east towards the Blue Wash headwaters area (Kaiparowits Fm) that was not previously accessible (SE portion of Canaan Peak Quad), areas north and east of Nipple Spring (Wahweap and Straight Cliffs fms), the area between Wahweap Wash and Blue Wash in the northeast portion of the Butler Valley Quad, northern Horse Mountain area (NW quadrant), the Four Mile Bench Flats, and north of Death Ridge (all Kaiparowits Formation), for a joint BLM-NHMU total of 3,000 acres. In particular, a very rare associated tyrannosaurid skeleton requires excavation in the NE Butler Valley Quad, and this area requires extensive inventory. Nearby exposures to the north and west have not been systematically surveyed and inventoried in ten years. The paleontological resources of the Straight Cliffs and Wahweap formations are poorly known; we will also focus on surveying these formations given our success in discovering significant sites the past five years, including an extremely rare 80-million-year old proto-duck-billed dinosaur, an 80 million-year-old giant crocodylian, and the first diagnostic carnivorous dinosaur and turtle remains from these formations.

During inventory the crews will walk in teams of two to three abreast over exposed bedrock,

recording in detail via GPS, notebooks, standardized forms, and photographs the location of any significant fossil resource encountered. Late summer would be spent conducting additional inventory, and collection/stabilization of significant specimens that can be collected on surface authority or have prior authorization. Collection techniques consist of photo documenting the site and re-acquiring GPS data prior to collection, along with the recording of the rock context and associated fossils. Sites yielding more than one element are mapped using meter grids. Site maps are subsequently digitized for archival purposes.

Research - In addition to initiating investigation of any important new fossil specimens collected during the 2017 inventory, we will focus our scientific research and publication efforts on a number of already-collected specimens. In particular, a manuscript on a new species of ankylosaurid (armored) dinosaur from the Kaiparowits Formation, which was part of a recent M.S. thesis by Jelle Wiersma under the direction of PI Randall Irmis, is currently in revision for the open access journal *PeerJ*, and we expect that a paper on a second new ankylosaur from the same thesis will be submitted to *Journal of Vertebrate Paleontology* during the first half of 2017. Irmis is about to submit a manuscript with Dr. Alan Titus (GSENM) on the giant alligator *Deinosuchus*. Irmis also has in preparation two manuscripts with Dr. Joseph Sertich (Denver Museum of Nature & Science) that will be submitted for publication in 2017: one on a new species that is the oldest caiman-relative yet discovered, and a second on important new material of a large crocodylian called *Denazinosuchus*. NHMU preparator Tylor Birthisel continues to work on his M.S. thesis on skull growth and variation of the crested duck-billed dinosaur *Parasaurolophus* (started in Fall 2016), based on nearly a dozen skulls collected by NHMU & BLM crews from GSENM during this partnership. *By placing these new discoveries in an evolutionary and geologic context, we can start testing our research questions about latitudinal zonation and effects of sea level change.* Finally, undergraduate student Nathan Ong is using bone histology to study ontogenetic change in soft-shelled turtles (trionychoids) from the Kaiparowits Formation; he presented this work at the 2016 Society of Vertebrate Paleontology Annual Meeting, and is currently writing it up for publication in a peer-reviewed journal.

Data Management - All information related to the survey will be archived digitally. Specimen and site records will be input into NHMU's new collections database that uses the EMu software platform. This system also allows us to archive associated records (field notes, photos, accession records, preparation and conservation records, publications, etc) through its digital asset management system. We can also generate custom reports at the BLM's request. Site and specimen information will be provided to the BLM in multiple formats, including as spreadsheets (Excel or CSV) and GIS-compatible files.

Public Dissemination, Education, and Outreach - New fossil discoveries and research findings are integrated into all aspects of NHMU's public and school programs. Fossil casts and new research will be added to our on-site programs such as *Scientist in the Spotlight*, *Junior Science Academy*, and teacher workshops, as well as off-site programs such as *Museum on the Move* and *Teaching Toolboxes*. Work on new fossil specimens from GSENM is publically visible daily, as our fossil preparation lab has large windows through which students and visitors can observe fossils being extracted from their rocky matrix. Collections work is also featured annually in NHMU's 2-day *Behind the Scenes* event, an open house for the public to see specimens in the collections that are not otherwise on display. In 2017, two new skeletal mounts of GSENM fossils will go on display; in early 2017 the new armored dinosaur species mentioned above will be exhibited coincident with publication, and later in the year it will be joined by a juvenile of the horned dinosaur species *Utahceratops*. Coinciding with the paper's publication, we also plan to put on display the original fossil of the new caiman-relative mentioned above. Our new digital database EMu has a web-based public portal so that the public can search our collections and see photos of specimens not on display (all sensitive information such as site coordinates are redacted). Finally, we publish scientific results published in a variety of technical

Project Proposal

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journals (with Open Access options where possible), and we will issue press releases and related material that publicize an accessible summary of the exciting new discoveries and research coming from the GSENM-NHMU partnership.

Mitigation of Resource Degradation - To prevent the degradation or destruction of newly discovered fossil resources, we will prioritize the collection of significant fossil specimens deemed to be at risk. This work will be done in consultation with GSENM paleontologist Alan Titus. All newly located paleontological sites will be evaluated for risk to resources, and these management recommendations will be forwarded to GSENM as part of our annual report. We will specifically note any sites that appear to be at risk to vandalism or degradation from visitor traffic. Finally, we continually re-visit previously-located sites to monitor the condition of existing paleontological resources.

Project Evaluation - The project will be fully successful if NHMU & GSENM jointly monitor 50 sites and inventory 3,000 acres. Also, fieldwork at the four to six sites estimated to need collection will be finished by November 2017. In addition, the submittal of the two manuscripts and final report with GIS data must be made by March of 2018 and the skeletal mounts will also be installed by that time. A moderately successful outcome would be if only 75-80% of the targets for monitoring, collection, and inventory were met and only one exhibit and one paper finished, however this is at full funding levels (\$20K). Not successful would see 60% or less of each target accomplished and neither a paper nor exhibit submitted.

NHMU work will be monitored by the GSENM paleontologist. This person will monitor our fieldwork progress and ensure that we are meeting our goals with respect to the timeline and objectives outlined above. In the past, we have been in contact with the GSENM paleontologist on a weekly to monthly basis.

Milestone / Task / Activity	Start Date	Completion Date
Background research, planning, and coordination with BLM field office and GSENM	March 2017	May 2017
Fieldwork in GSENM to inventory fossil resources. Tasks include systematic prospecting to identify new fossil sites, evaluation of these sites, and excavation of those sites under risk. This will be undertaken by crews of trained staff and volunteers from the NHMU	May 2017	October 2017
Preparation and curation begun at the NHMU of specimens collected in 2017	August 2017	December 2017
Preparation and submission of final report to BLM	November 2017	March 2018

PUBLIC BENEFIT:

By collaborating with GSENM staff to survey, inventory, collect, and research Cretaceous paleontological resources within the monument, we are providing strong value to the general public in a number of ways. At a fundamental level, this work provides a baseline understanding for the fossil resources within the monument, so that these resources can be effectively managed and preserved – one of the main goals of designating a particular area of federal land as a national monument. Thus, this helps keep these fossils in the public trust, enriches the visitor experience, and deepens the public's understanding of science and natural history. In the specific case of GSENM, our discoveries have shown that not only is this a fossil-rich monument, but the Late Cretaceous ecosystems preserved within its boundaries are unique among those known worldwide, with species of plants and animals (including dinosaurs) not found anywhere else on earth. As these discoveries are disseminated to the public through

exhibits, public (interpretive) programs, educational programs, and the news media, it fosters a greater appreciation and respect for GSENM and public lands in general, particularly for non-renewable scientific resources such as fossils that can be easily damaged.

As outlined in the 'Past Performance' section below, the results of our collaborative project with GSENM are broadly disseminated to the public in many different ways. Statewide, our education programs reach over 100,000 K-12 students each year, and exhibits at GSENM and NHMU reach well over 300,000 nationwide and international visitors per year. We also reach a worldwide audience, with over 100,000 people reading our open-access publication of scientific journal articles, and *millions* of people reading about these discoveries in the news media. This ability to interface with the public on a local, statewide, national, and international levels makes our GSENM-NHMU partnership a singular project in educating the public about the value of paleontology, science, and public lands. Paleontology provides an intuitive and accessible gateway to natural science and conservation for all ages, and increases the wonder and excitement that visitors feel when visiting a national monument. Our work at GSENM brings to the forefront these long-vanished environments and organisms from millions of years ago and provides to the public a tangible connection to understand change through time, the history of life on earth, and the value of science on public lands.

QUALIFICATIONS, PAST PERFORMANCE, ACTIVE BLM COOPERATIVE AGREEMENTS:

Our previous collaborative GSENM-NHMU paleontological survey, inventory, monitoring, and research work in Grand Staircase-Escalante National Monument has been conducted under a succession of assistance agreements: JSA015003, JSA071004, and L12AC20378. A summary of the accomplishments and work done under these agreement is presented below.

Resource & Scientific Significance - NHMU teams have logged a total of 950 days of fieldwork, amounting to 6,255 person days, for a grand total of about 56,875 person hours of fieldwork alone. During this time, the area surveyed in both the Wahweap and Kaiparowits formations has totaled ~48,340 acres. Over 964 vertebrate localities have been discovered, and over 3,200 vertebrate fossils saved from erosion, including over 95 partial to complete skeletons. Scientific discoveries include four new species of giant herbivorous horned dinosaurs (Kirkland & DeBlieux, 2010; Sampson et al., 2010, 2013; Lund et al. 2016a,b), a new species of giant duck-billed dinosaur (Gates & Sampson, 2007), two new species of giant carnivorous tyrannosaurs (Carr et al., 2011; Loewen et al., 2013), a sickle-clawed "raptor" dinosaur (Zanno et al., 2011), six different species of crocodylians including the giant dinosaur-eating alligator *Deinosuchus* (Irmis et al., 2013), and over a dozen species of turtles, including a new pig-nosed species (Lively, 2015, 2016; Hutchison et al., 2013).

Public Value - The results of this collaborative GSENM-NHMU project have literally reached millions of people statewide, nationwide, and internationally. Research products include over twenty peer-reviewed scientific articles, dozens of presentations at scientific meetings, two internationally-attended symposia, a 634 page multi-authored scientific volume (Titus & Loewen, 2013), and four professional society field trips. We have committed to publishing this work in open-access venues so that all U.S. citizens can read the results; the last six open-access papers (Sampson et al., 2010, 2013; Zanno et al., 2011; Boyd et al., 2013; Loewen et al., 2013; Lund et al., 2016b) have been read by a combined total of over 136,000 people, and shared via social media by over 20,000 people, a remarkable feat given these are technical scientific articles. These discoveries have been broadcast by thousands of media outlets nationally and internationally. For example, the recent announcement of the new pig-nosed turtle species *Arvinachelys* caught public imagination and was covered by 613 media outlets; the recent new

tyrannosaur *Lythronax* was covered by nearly 1100 outlets. The *Arvinachelys* press release (October 2015) resulted in positive media exposure for the BLM and GSENM equivalent to \$7.74 million in advertising. More recently, in May 2016, the announcement of the new horned dinosaur *Machairoceratops* was covered by nearly 100 media outlets worldwide. We expect that our early 2017 publication of a new species of armored dinosaur, which is also set to be in an open-access journal (*PeerJ*), will garner similar positive coverage for GSENM. Additionally, the cooperative GSENM-NHMU project was the focus of a feature article in the May 2014 issue of *National Geographic Magazine*, and was promoted in a July 2015 *New York Times* feature article (<http://tinyurl.com/oj5bdg9>). Finally, research, specimens, and scientists from the GSENM-NHMU partnership have been featured in a new richly-illustrated popular science book by Christa Sadler entitled '*Where Dinosaurs Roamed: Lost Worlds of Utah's Grand Staircase*', published by Glen Canyon Natural History Association in November 2016.

Even more important is how these scientific discoveries can directly reach the public and transform their understanding of the history of life on earth, and the importance of scientific resources from federally-managed lands. These discoveries, including hundreds of original fossils from GSENM, are featured in the 90,000 square-foot *Utah's Past Worlds* Gallery at the Natural History Museum of Utah. Since opening the new building at NHMU in late 2011, the exhibits have been visited by over 1.53 million people, with 266,316 visitors in calendar year 2016 alone. In early November 2013 we opened a special exhibit focusing on the new GSENM tyrannosaur *Lythronax*, and have had over 950,000 visitors to date. GSENM fossils were also featured in our *Behind the Scenes* event in November 2016, which allows visitors to see collections not normally on display; we received over 3,000 visitors in this two-day event. *Lythronax* and GSENM fossils in our exhibits and preparation lab were part of the 2016 NHMU legislative evening, attended by over 670 Utah state and county legislators and their families; we expect similar attendance at this year's event. GSENM fossils are also featured in a 3-year exhibit at the Utah State Capitol entitled 'A Paleontologist's Paradise', **where they are seen by state legislators, staffers, and over 150,000 members of the public each year.**

Educational benefits from this work are equally critical. In addition to the many University of Utah students that visit NHMU exhibits (including 150-200 per semester from the World of Dinosaurs course), we have made it a priority to integrate K-12 education with our work. During the 2015-2016 school year, 57,000 K-12 students and teachers visited NHMU on class field trips. We also strive to reach classrooms statewide by bringing programs to schools themselves. Our outreach programs such as *Museum on the Move* focus on core curriculum objectives, and feature replicas (casts) of GSENM fossils; these programs reached over 25,700 elementary students and teachers in the 2015-16 school year. Finally, we loan teaching toolkits that also feature GSENM fossil casts to K-12 teachers throughout the state, and this program reached an additional 41,700 students and teachers this past school year.

A separate project awarded through funding opportunity L16AS00092 in FY2016 was a collaborative project between NHMU and the BLM Utah Moab Field Office to produce a series of short web videos about dinosaur tracksites in and around Moab that A) encouraged the public to visit the sites while also promoting the new **Respect and Protect** initiative; and B) give an informative introduction to the paleontology of each site. Planning for this project occurred in Spring and early Summer 2016, and filming occurred over a one-week period in late August 2016. Editing and post-production occurred during Fall 2016, and preliminary versions of the videos were presented at the 76th Society of Vertebrate Paleontology Annual Meeting in Salt Lake City, UT (Hunt-Foster et al., 2016). The videos have now been finalized, and we are working to develop contextual web content to go along with them; all content should be publically available by March 2017, and promoted through both NHMU and BLM social media.

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[Attachment B]

BUREAU OF LAND MANAGEMENT
 Financial Assistance (Cooperative Agreements)



ATTACHEMENT B: BUDGET DETAIL (SUGGESTED FORMAT)

Instructions: Using the estimated amounts listed on your SF 424A Budget Information form, use this worksheet to provide details of those estimated costs. In the Narrative Boxes, explain the purpose of each cost and provide sufficient detail so costs may be analyzed for reasonableness.

Agreement or Funding Opportunity No.: L17AS00001 Date: Jan. 31, 2017
 Organization Name: Washington State University
 Project Title: Supporting Scientific Studies of Archaeological Collections from Cedar Mesa Canyons

A) PERSONNEL COSTS (SF-424A Object Class Category 6a.)					
Estimated costs of salaries/wages, <u>not</u> including fringe benefits, paid to Recipient employees working directly on this agreement. Indicate Key Personnel with an asterisk (*), provide more detail in the Narrative Box if needed.					
Name & Title or Position Title	Salary or Wage	Months or Hours	Matching Funds (if applicable)	BLM Funds	Personnel Justification
Diane Curewitz, Mus & Preserv Spec	\$3004.00	120			
Cassady Williams, Prof'l Worker	\$4448.00	320			
<i>Example: James Smith, Executive Director</i>	<i>\$20,000.00/Mo.</i>	<i>3 Mos.</i>	<i>\$15,000.00</i>	<i>\$45,000.00</i>	
A) TOTAL PERSONNEL COSTS: (SF 424A Object Class Category 6a. Personnel)			\$	\$ 7,452.00	
Budget justification of costs: Salary and wages listed about are based on the employees base monthly salary and/or wage; Curewitz salary base on 3 weeks of work, Williams salary based on 320 hours of work.					

B) FRINGE BENEFIT COSTS (SF-424A Object Class Category 6b.)				
Estimated costs of fringe benefits (e.g. health insurance, vacation, FICA, etc.) paid to Recipient employees working on this agreement. List employees/positions below, and their fringe benefit rates as a percentage (%) of their salaries. List what are considered fringe benefits in the Narrative Box.				
Name & Title/Position	Salary/Wage Base (BLM Amounts budgeted in Section A above)	Fringe Benefit Rate (%)	Matching Funds (if applicable)	BLM Funds
Diane Curewitz, Mus & Preserv Spec	\$1,449.00	48.3%		
Cassady Williams, Prof'l Worker	\$ 961.00	21.6%		
<i>Example: James Smith, Executive Director</i>	\$20,000.00	30%	\$0.00	\$6,000.00
B) TOTAL FRINGE BENEFIT COSTS: (SF 424A Object Class Category 6b. Fringe Benefits)			\$	\$ 2,410.00
<u>Budget Justification of Costs:</u> Fringe benefit costs directly relate to the amount of salary/wage costs at the approximate current fringebenefit rate.				

C) TRAVEL COSTS (SF-424A Object Class Category 6c.)						
SUB TOTAL, LODGING & PER DIEM The cost of lodging & meals while traveling for agreement activities. Give details and purpose of the travel in the Narrative Box. Current Federal rates may be found online at: http://www.gsa.gov/portal/category/21287 .						
Proposed Travel (Lodging & Per Diem)		No. of People	No. of Days	Cost Per Person Per Day	Matching Funds (if applicable)	BLM Funds
To:						
From:						
To:						
From:						
To:						
From:						
To:	<i>Example: Portland, OR</i>	1	2	\$150.00/ Day	\$100.00	\$200.00
From:	<i>Eugene, OR</i>					
SUB TOTAL, MILEAGE REIMBURSEMENT The cost of reimbursement for estimated mileage traveled in recipient vehicles for agreement activities. Give details and the purpose of the travel in the Narrative Box. Current Federal mileage reimbursement rates may be found online at: www.GSA.gov . NOTE: Mileage reimbursement rates include all vehicle costs, i.e. fuel, insurance, maintenance, etc.						
Proposed Travel (Mileage Reimbursement)		No. of Miles	No. of Trips	Cost Per Mile	Matching Funds (if applicable)	BLM Funds
To:						
From:						
To:						
From:						
To:						
From:						
To:	<i>Example: Portland, OR</i>	110 Miles	2	\$0.10/ Mile	\$0.00	\$22.00
From:	<i>Eugene, OR</i>					
SUB TOTAL, OTHER TRAVEL COSTS The costs of airfare, bus fare, car rental, etc., required for agreement activities. Explain the details and the purpose of the costs in the Narrative Box.						
Proposed Other (Travel Reimbursement)		Type	Cost	No.	Matching Funds (if applicable)	BLM Funds
To:						
From:						
To:						
From:						
To:						
From:						
C) TOTAL TRAVEL COSTS: (SF 424A Object Class Category 6c. Travel)					\$	\$ 0.00
<i>Budget justification of costs:</i>						

D) EQUIPMENT COSTS (SF-424A Object Class Category 6d. Equipment)				
The cost of equipment purchased for use on this agreement. Equipment is defined as items with a useful life of more than one (1) year and a cost of \$5,000+ per unit. If your organization has a written policy for purchasing equipment, please submit a copy with your application. Explain the need and purpose of the equipment in the Narrative Box below.				
Equipment	Quantity	Cost per Unit	Matching Funds (if applicable)	BLM Funds
<i>Example: John Deere Compact Tractor</i>	1	\$17,500.00	\$7,500.00	\$10,000.00
D) TOTAL EQUIPMENT COSTS: (SF 424A Object Class Category 6d. Equipment)			\$	\$ 0.00
<u>Budget justification of costs:</u>				

E) SUPPLY COSTS (SF-424A Object Class Category 6e. Supplies)				
Estimated costs of materials and supplies used directly on this agreement, e.g. safety glasses, work gloves, office supplies, etc. If your organization has a written policy for purchasing supplies, please submit a copy with your application. Explain the purpose of the costs in the Narrative Box below.				
Item	Quantity	Cost per Unit	Matching Funds (if applicable)	BLM Funds
Supplies (labels, storage boxes, sample bags)	1 lot	\$175.00		
<i>Example: Work Gloves, Leather</i>	6	\$10.00/Pair	\$50.00	\$10.00
E) SUPPLY COST TOTAL: (SF 424A Object Class Category 6e. Supplies)			\$	\$ 175.00
<u>Budget justification of costs:</u>				
Supply costs are to replace/create any labels, boxes, or bags as needed for proper care of artifacts.				

F) CONTRACTUAL COSTS (SF-424A Object Class Category 6f. Contractual)			
Estimated costs of contracted/sub contracted services and sub grant/recipient awards. If your organization has a written contracting policy, please submit a copy with your application. Provide contractor names, if available, and explain the details and purposes of the costs in the Narrative Box below. NOTE: Calculation of your Indirect Costs may be affected by contracted and/or pass through expenses. See Section J) INDIRECT COSTS, for more information.			
Contractor Name, Type, etc.	Cost	Matching Funds (if applicable)	BLM Funds
<i>Example: Ace Delivery Service (Yearly Contract)</i>	\$2,500.00	\$0.00	\$2,500.00
F) CONTRACTUAL COST TOTAL: (SF 424A Object Class Category 6f. Contractual)		\$	\$ 0.00
<u>Budget justification of costs:</u>			

G) CONSTRUCTION COSTS (SF-424A Object Class Category 6g. Construction)			
The estimated costs of construction. "Construction" is the intent to construct, alter, or repair (including dredging, excavating, and painting) buildings, structures, or other real property FAR Part 2 Definitions. Explain the details and purpose of the costs in the Narrative Box below.			
Contractor: Name/Type/Organization/Etc.	Cost	Matching Funds (if applicable)	BLM Funds
G) CONSTRUCTION COST TOTAL: (SF 424A Object Class Category 6g. Construction)		\$	\$ 0.00
<u>Budget justification of costs:</u>			

H) OTHER COSTS (SF-424A Object Class Category 6h. Other)			
Estimated costs which don't fit any other Object Class Category, e.g. duplicating and printing costs, postage and freight, rental of equipment, etc. Explain the details and purpose of the costs in the Narrative Box below.			
Item	Cost	Matching Funds (if applicable)	BLM Funds
<i>Example: Ace Equipment Rental (Post-Hole Digger, 4 Days)</i>	\$25/Day	\$0.00	\$100.00
H) OTHER COSTS TOTAL: (SF 424A Object Class Category 6h. Other)		\$	\$ 0.00
<u>Budget justification of costs:</u> Budget covers Project Supervisor to supervise the Project Assistant, as well as update the Turkey Pen midden inventory; prepare report on past loans/analyses of specimens from the Turkey Pen midden; Assistant to scan slides, prepare captions for digital images, and relabel and re bag, as necessary the existing bags of Turkey Pen midden specimens.			

I) TOTAL DIRECT COSTS (SF-424A Object Class Category 6i. Sum of 6a.-6h.)		
The total of all direct costs applicable to this project.		
Total Direct Costs	Matching Funds (if applicable)	BLM Funds
I) TOTAL DIRECT COSTS: (SF 424A Object Class Category 6i. Total, Sum of 6a. 6h.)	\$	\$ 10,037.00

<p>J) INDIRECT COSTS (SF-424A Object Class Category 6j. Indirect Charges)</p> <p>Indirect costs are expenses which cannot be readily identified and charged to a particular project or agreement, e.g. building rent, utilities, office supplies, etc. Such costs are charged to the project as a percentage of the Direct Costs (items A through H above) and this percentage is called the Indirect Cost Rate. If your organization has a Negotiated Indirect Cost Rate Agreement (NICRA) please submit a copy of the agreement with your application. If your organization has no NICRA, the BLM may allow a "de minimis" indirect cost rate of up to 10% of your Modified Total Direct Costs (MTDC), which are your Direct Costs excluding sub grant and sub contract costs in excess of \$25,000. See 2 CFR 200.68 Modified Total Direct Cost (MTDC) and 2 CFR 200.414(f) Indirect (F&A) Costs for more information.</p> <p>If your organization is a Cooperative Ecosystems Studies Unit (CESU) partner, your indirect cost rate will be 17.5% of your NICRA determined indirect cost base.</p> <p>Use the Narrative Box below to explain how you calculated your indirect cost base and resulting indirect costs.</p>		
Indirect Cost Rate to be used on this Grant (%):	17.5%	
Indirect Cost Base for this Grant: \$	1,756.00	
Total Indirect Costs	Matching Funds (if applicable)	BLM Funds
J) TOTAL INDIRECT COSTS: (SF 424A Object Class Category 6j. Indirect Charges)	\$	\$ 1,756.00
<p><u>Budget justification of costs:</u></p> <p>Modified total indirect costs figured at 17.5%, per CESU agreement.</p>		

<p>K) TOTALS (SF-424A Object Class Category 6k. TOTALS)</p> <p>The sum total of all Direct and Indirect Costs (Sum of 6i. & 6j.) applicable to this agreement.</p>		
Total Project Costs	Matching Funds (if applicable)	BLM Funds
K) TOTAL COSTS: (SF 424A Object Class Category 6k. TOTALS)	\$	\$ 11,793.00

I certify that to the best of my knowledge the costs detailed above are correct and complete and for the purposes set forth in the associated application for Federal Assistance.

Annette Bednar, Fin/Bdgt Manager

Name & Title of Person Completing Budget

Project Narrative File(s)

* Mandatory Project Narrative File Filename:

[Add Mandatory Project Narrative File](#)

[Delete Mandatory Project Narrative File](#)

[View Mandatory Project Narrative File](#)

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

[Add Optional Project Narrative File](#)

[Delete Optional Project Narrative File](#)

[View Optional Project Narrative File](#)

Manifest for Grant Application # GRANT12327304

Grant Application XML file (total 1):

1. GrantApplication.xml. (size 19133 bytes)

Forms Included in Zip File(total 7):

1. Form GG_LobbyingForm-V1.1.pdf (size 23128 bytes)
2. Form ProjectNarrativeAttachments_1_2-V1.2.pdf (size 21319 bytes)
3. Form SF424_2_1-V2.1.pdf (size 31289 bytes)
4. Form BudgetNarrativeAttachments_1_2-V1.2.pdf (size 22306 bytes)
5. Form SF424A-V1.0.pdf (size 29227 bytes)
6. Form Key_Contacts-V1.0.pdf (size 26877 bytes)
7. Form SF424B-V1.1.pdf (size 28145 bytes)

Attachments Included in Zip File (total 2):

1. ProjectNarrativeAttachments_1_2
ProjectNarrativeAttachments_1_2-Attachments-1235-Project Narrative.pdf application/pdf
(size 182762 bytes)
2. BudgetNarrativeAttachments_1_2
BudgetNarrativeAttachments_1_2-Attachments-1234-Budget Narrative_ATTACHMENT B.pdf
application/pdf (size 159654 bytes)

BUREAU OF LAND MANAGEMENT
Financial Assistance (Cooperative Agreements)



ATTACHMENT A: PROJECT PROPOSAL (SUGGESTED FORMAP)

Instructions: A Project Proposal must be submitted with the Standard Form (SF) 424 Application for Federal Assistance for all BLM Assistance Agreements. Complete each section below. Use additional sheets as needed.
**If this is a continuation of existing BLM cooperative agreement, identify the current BLM agreement number and project title below.

Person Submitting Proposal: Annie Meltzer, Grants and Finance Manager Date: 2/2/2017

Organization Name: American Conservation Experience

**Agreement or Announcement No.: L17AS00001 – WSA App Development

** Agreement or Announcement BLM FY2017 Bureau-wide National Conservation Lands
Title: Scientific Studies Support Program

Estimated Period of Performance: April 1, 2017 - March 31, 2022

BLM POC: BLM Utah State Office
Proposed Project Location: _____

This work will occur on: Public Lands Both Public & Private Lands

YOUR MISSION: (Describe your mission. Describe why this support is being requested.)

American Conservation Experience (ACE) is a national 501 (c) (3) non-profit organization headquartered in Flagstaff, Arizona with regional chapters located in St. George, UT; Salt Lake City, UT; Santa Cruz, CA; South Lake Tahoe, CA; and Asheville, NC. ACE engages American & international youth by creating partnerships that promote conservation, protect natural & cultural resources, and uses innovative approaches in an effort to accomplish the shared mission with the Department of Interior.

The ACE Emerging Professional Internship Corps (EPIC) program provides individual placement opportunities where our participating members receive on-the-job skills training, professional development opportunities, hands on resource management experience, exposure to potential future careers through mentored interaction with land management professionals, and access to the many benefits of working with a 21st Century Service Corps program.

ACE EPIC program interns are expected to lead the way into the future of managing natural and cultural resources, but they are typically not offered the opportunity to work with the tools of the future. Tools that will allow for resource monitoring data collection, storage, interpretation, sharing and evaluation without duplicating work. The best tools save time, resources, and increasing accuracy.

Data collection for monitoring and research is a time intensive activity, and post processing of the data collection often forces agencies to limit the amount of data collected based on the challenge of inputting the data, organizing it, etc. We are proposing to create collection processes that allow for field data, photos, etc. to be collected, georeferenced, undergo rigorous review and quality control and assurance processes that allow continuity from year to year, point to point, linear feature to linear feature. ACE is proposing to enhance our development of field research and monitoring tools that will afford our interns, as well as current and future agency staff, integrity and accessibility to all data collected. The

methods for data collection and storage will be enhanced so that agency staff can reevaluate the data that they are interested in because data collection time, and therefore cost, will be decreased.

OBJECTIVE:

ACE's objective for this project is to continue to develop the WildSnap app to collect valuable data to monitor Utah WSAs to fulfill the BLM Manual 6330 Management of BLM Wilderness Study Areas requirements and/or any future guidance or changes to directives that BLM requires. The uniqueness of this project is that BLM staff, ACE interns and even citizen scientists can all gather the necessary data to fulfill BLM monitoring requirements. The distinguishing factor of working with ACE is that the WildSnap data is completely owned by the BLM, while still being able to be collected outside. The data is collected offline in the field, and then uploaded using Cloud technology that BLM can easily import and access in any form the BLM needs. This data is stored safely and securely, and remains the property of the BLM.

BLM's objective is that all WSAs will be monitored to ensure continued sustainability for designation as wilderness and to protect the wilderness characteristics of a WSA from impairment. In essence, monitoring is the first step in identifying potential adverse impacts to such characteristics and whether or not the areas are being managed so as not to impair the suitability of the WSA for preservation as wilderness.

All WSAs are required to be monitored to ensure continued suitability for designation as wilderness at a frequency that will establish compliance with the non-impairment standard. In order to achieve the minimum monitoring frequency of once per month during the months that the area is accessible to the public, BLM Field Offices should invest in wide reaching survey technology and a force of volunteers for implementation.

In conjunction with this monitoring, BLM Field Offices must maintain permanent records of each WSA including photo documentation of routes, range developments, mining sites, and boundaries that may impact the naturalness of the WSA. These records must also include information on each monitoring visit, including geospatial data. Having access to WildSnap ensures that thorough records are kept regarding all monitoring visits, compiling the information into easy to reference site-specific monitoring guides. These monitoring guides will be maintained as the property of the BLM.

Most WildSnap users will be monitoring to detect potential violations of WSA policy and identify any unauthorized uses in WSAs and their associated impacts. Each WSA within the WildSnap app has a corresponding site-specific monitoring guide that includes a map of the boundaries of the WSA, as well as detailed information regarding setting and terrain, access routes, water availability, services, communication, and vital WSA monitoring material and standards. The BLM has identified several key observation points (KOPs) for each WSA as suggested locations to visit and collect panoramic photos. KOPs may include: trailheads, overlooks, trail intersections, canyon entrances, gates, campsites, water sources, and other landscape features.

Monitoring information and photographs assist in recording the location and extent of impacts so that the area can be restored or reclaimed. Information collected by WildSnap users may also assist in identifying resource conditions or features that could constitute supplemental values. Even when no disturbances are encountered, submitting a record of a monitoring visit where no unauthorized conditions exist is still valuable in assessing the condition of an area over time.

RESEARCH THEME AND TECHNICAL APPROACH:

Please identify which themes apply to your projects:

- ✓ *Research Identified in Unit Science Plans (for National Monuments, National Conservation Areas, and Similar Designations)*
- ✓ *Standardized Inventory and Monitoring*
- ✓ *Citizen Science*
- ✓ *Other Management-Driven Research*

1. Describe the techniques, processes, methodologies to be used.

ACE has worked with the BLM, in the development of a WSA App, WildSnap, a landscape monitoring app for iOS which allows users to collect data in an offline environment. Data generated by the WildSnap user is synced to the encrypted Cloud servers managed by ACE following BLM data standards. This includes procedures issued and outlined by the WSA Management Manual 6330, while also collecting geo-referenced photos and ease of data transfer. These data points meet WSA monitoring standards in BLM Manual 6330 and dovetails with BLM Training Modules.

ACE works within open data standards, which allow the BLM ease of data acquisition and allows the BLM to access these reports/data at their convenience. ACE will ensure compliance with NCL data standards in the collection of all data and reports by working directly with the partners and providing them with the safe and secure collection methods.

2. Describe how data collection, analysis, and means of interpretation will be accomplished.

With the WildSnap App's ability to collect quantitative data offline, it provides the user with the ability to utilize its features while in the field. The data collected through this app uses geo-referenced images to catalog routes, trails, boundaries, cultural sites, and any other landscape feature for logging or tagging. ACE will use these methods/systems and work directly with the partners to work within their created/determined data collection standards to create solid empirical scientific data.

The use of this data is imperative in the collection of this field data in a clear and concise manner. This app, operated by interns, will collect quantitative and qualitative data offline, which will be ready for interpretation upon review. Upon collecting necessary reporting data, reports can be finalized in house and uploaded to a safe and secure, encrypted storage cloud.

3. Describe how the proposed objectives will be achieved within the proposed period of performance (POP)

ACE will recruit qualified, passionate and hard-working interns who will be the backbone of the data collection in the field and follow the framework established by our partners and ACE. Upon the hiring of these Interns, ACE will work with the designated field office/partners to ensure these Interns are properly trained in WSA data collection, management protocols, and any other necessary trainings provided by both ACE and/or BLM. Interns will use WildSnap to collect field data, develop their reports, and provide thorough analysis upon submission of reports. Interns, and ACE, will serve with the partners to develop a schedule that is best suited for the assigned areas.

4. Describe significant goals or milestones and how they will be measured.

Significant goals and milestones will be tracked by ACE and the BLM, as defined upon grant approval. What ACE foresees as achievable goals, through this award opportunity, includes having a complete platform that will be easily accessible, downloadable, and operated by partners/users to support in the mission of the BLM. WildSnap will have a completed, streamlined interface incorporating warehoused data from the BLM for interpretation and GIS analysis.

The app will provide an easy to use platform that allows for flexibly to add data, including new sites and content, as directed by the BLM remotely and/or through application updates. ACE also foresees the potential for delivery on the Apple iOS store, for use by the public, and delivery through the internal BLM iOS App Store, with additional tools only available to BLM staff or approved partners. The app will also ensure reports are tracked and monitored digitally, for ease of tracking, providing PDF reports delivered to BLM Field Offices, as well as a copy to the BLM State Office, with another copy going to the creator/end user with cultural and sensitive information redacted as determined by the BLM.

5. Describe tasks and relationships of partners, if applicable.

ACE has the ability and flexibility to work with a wide array of partners across various geographic areas. BLM partners may be asked to contribute feedback about the WildSnap platform, including:

- Field site priorities
- Key Observation Points (KOPs)
- Providing existing georeferenced data
- Providing trainings related to WSA monitoring
- Field testing results
- Reviewing initial data to assure data collected is on par with the NLCS data quality standards, meeting the expected quantity, and provides resource management value.

6. Describe how the proposed project improves management of the National Conservation Lands unit.

The development and implementation of the WildSnap app will provide a wide reaching, cost effective collection of quantifiable observations and geo-referenced images and video files. While the WSA App is proprietary to ACE, the data files generated by the app and collected by the users will be owned by the BLM and accessible to the BLM after the project term is completed, at request of the BLM. The collection and creation of these reports, as they will meet standardized protocol as defined in the Management of BLM Wilderness Study Areas, Manual 6330, as ammended, support a defined and consistent methodology, allowing ease of access for WSAs to be surveyed. With this ease of access and use of these technologies, it allows for interns and volunteers, as well as BLM staff, to more efficiently collect data in the field and compile reports, allowing more WSAs to be monitored than by traditional methodologies.

7. Explain whether the proposed projects are applicable to management beyond the relevant National Conservation Lands unit.

The WildSnap app has widely applicable technologies that can be used to collect and catalog routes, trails, boundaries, cultural sites, and any other landscape feature for logging and tagging. ACE also has versatile interpretation and analysis capabilities. ACE can provide interpretation internship opportunities, but raw data also stands alone, ready for independent agency interpretation on BLM's own terms. WildSnap has the potential to serve in Citizen Science capabilities to engage the public in education and management practices regarding our public lands. The WildSnap platform was recently monitored to implement Wilderness Inventory Monitoring in the BLM California Desert District and Central California.

WildSnap can also be adapted to monitoring specific sites, including cultural sites and sensitive landscapes on other public lands. ACE's extensive partnership agreements with Department of the Interior agencies, including a freshly awarded National Agreement with the Bureau of Reclamation (#R17AC00046) affords us the opportunity to adapt WildSnap to more uses and implement its utilization on public lands throughout the country.

8. Provides foundational knowledge or fills data gaps.

The WildSnap app is able to combine existing feature and overlay data with newly collected data to compile the most complete image of any landscape. With these technologies, ACE is able to provide support, during and beyond the life of the project, to allow for enhancements, updates, and any needed application adjustments. This ensures the data is adherent to current data quality standards and protocol, and widely implementable for making land use decisions.

9. Credible methods and success metrics.

The WildSnap app is continuing to be developed and has been tested in field offices and WSAs across Utah, including:

- Cedar City Field Office: Spring Creek Canyon, Wah Wah Mountains, White Rock Range
- Price Field Office: Crack Canyon, Mexican Mountain, Sids Mountain, San Rafael Reef
- Salt Lake City Field Office: North Stansbury WSA, Deep Creek WSA
- Moab Field Office: Mill Creek Canyon WSA
- Vernal Field Office: Daniel's Canyon WSA

Also, the platform has already been adapted for Wilderness Inventory work in the California Desert District of BLM, and will later be adapted for use in the Central & North Coast of California within the NCL system.

10. Realistic timetable & deliverables:

Planning, development, testing, and initial trials for WildSnap can all be accomplished in a 12-month timeframe. ACE is able to work closely with BLM Field Office staff to accelerate, or slow down (for the sake of efficiency) the process as our partners see fit.

In regards to deliverables, ACE will provide all applicable materials and files to BLM to continue the WSA work, and aim to partner with BLM to support professional development opportunities to implement the initial application development, accomplishing both support for our youth mission, but also increasing research and monitoring capacity. Along with these, all required annual progress reports, final reports, and manager's summaries will be furnished by the ACE Program Manager and Grants and Agreements Manager to ensure legal compliance.

Milestone / Task / Activity	Start Date	Completion Date
Program planning and data collection (BLM mapping data)	April 2017	May 2017
WildSnap Application Development & Contracting	June 2017	October 2017
Project Evaluation and Continuation	October 2017	March 2017

PUBLIC BENEFIT:

In summary, ACE believes that the complex multiple use mandate that guides BLM's Wilderness and Wilderness Study Area management efforts is an excellent place for developing dynamic technological processes and tools to allow for efficient collection, cataloging, and assessment of monitoring data. In order to achieve the minimum monitoring frequency of once per month during the months that the area is accessible to the public, investing in wide reaching survey technology and a force of volunteers for implementation will afford BLM Field Offices more efficiency in monitoring and reporting.

With the continued development and enhancement of this application, ACE will provide a baseline for engaging the public and connecting them directly with the public lands through citizen science. These efforts support the mission of the "National Conservation Lands to protect a myriad of endangered species, diverse habitats and ecosystems, historic properties, and cultural resources." This application

development also supports in the mission of this RFP as stated, to “help the BLM better understand the National Conservation Lands natural, scientific, and cultural resources, and the benefits they provide the American public by applying scientific understanding to management, education, and outreach.”

QUALIFICATIONS, PAST PERFORMANCE, ACTIVE BLM COOPERATIVE AGREEMENT:

To ensure safe and effective implementation of the full range of field activities represented in this project, ACE’s entire senior management staff, including trainers and coordinators for the southwest crew programs, will be readily available to lend assistance to the team leader and team members. The ACE senior level staff will be heavily involved in the planning, hiring and on-boarding stages of this project. We will work diligently to find the most qualified team leader and members to ensure the project’s success. We will be actively involved in getting the team settled in and brought up to speed on the objectives of this project, main points of contact, reporting requirements, etc. We work diligently and successfully to provide local housing at project site locations, realizing that comfortable living situations engender good attitudes and work ethic. ACE’s senior level staff will then serve as consultants to the project, the team, and the BLM. We will facilitate conversations when necessary, ensure compliance with the Project Management Plan, track expenses, and monitor progress.

Staff directly involved with ACE:

ACE has been fortunate to attract and retain a great number of devoted and talented staffers with many years of experience in trails, hydrology, fisheries, abandoned mine-land reclamation, vegetation management, fencing, and survey/monitoring with a wide range of land management agencies, conservation corps, and non-profit organizations across the country. ACE’s senior staff possesses extensive accumulated experience managing conservation projects as staff for the Coconino Rural Environment, the Nevada Conservation Corps, the National Park Service, the Bureau of Land Management, US Bureau of Reclamation, and the US Forest Service. Below are the profiles of selected ACE personnel who will contribute to this project.

Shane Barrow, ACE EPIC Program Director:

Email: sbarrow@usaconservation.org

Phone: (801) 946-5201

Shane has 20 years of management and leadership experience, much of which was either as a public servant and working as a federal partner. His professional path mirrors that of many conservation minded career focused young professionals. After volunteering with the BLM assisting with regional field geology courses, Shane secured his first GS position with BLM as a Realty Technician in the California desert. He later joined the Student Career Experience Program (SCEP) when he returned to graduate school, and was recruited into the agency after working for the CA State BLM office and Mother Load Field office in Recreation, Wilderness, Abandon Mine Lands, NEPA, invasive species management, and Riparian Restoration. His first Permanent position was in the Bakersfield Field Office as a Natural Resource Specialist, working in the Oil & Gas program. While there he acted in the capacity as the National Environmental Policy Act coordinator, the Soil, Water, Air Specialist, and performed recreational management, outreach, and environmental restoration duties throughout California. While there, he transitioned to managing a Central Valley Project (USBR) funded program to restore and manage upland and wetland vegetation in the Tulare Lake basis. While there he started one of the early Hands-on-the-Land programs for the Atwell Island Project in an effort to engage and educate the agricultural farm-worker families who make their living working on the land.

Shane received his Masters of Science from CSU Sacramento in Natural Resource Management, with an emphasis on environmental restoration. After 4 years managing restoration projects on the San Joaquin River in Central California and leading the Catalina Habitat Improvement & Restoration Program in the

Channel Islands, he founded the ACE Emerging Professionals Internship Corps (EPIC) program to build bridges between academia and career in the conservation field.

Tim England, ACE Director of Technology:

Email: tengland@usaconservation.org

Phone: (801) 243-0623

Tim grew up in central Iowa where he attended Drake University studying Journalism with an emphasis in Radio and Television Broadcast. After leaving Drake, he moved to Utah and began his career in Information Technology, working as a systems administrator for both small and large companies. In 1999, he moved to California where he worked for Apple, Cisco, and EFI, honing his technology skill set in areas such as interface development, web application development, and large-scale network deployment. In 2003, he decided to move back to Utah and work for one of the leading robotic research and development companies, SARCOS. After SARCOS was acquired by Raytheon in 2007, he continued to develop his technology skill set, working in systems administration, project management, system architecture, and system integration.

Kelly Barrett, National Program Manager for BLM and USFS:

Email: kbarrett@usaconservation.org

Phone: (385) 272-0472

Kelly will provide the necessary project support for the interns and the BLM. She will be responsible for assuring the program is managed in a professional, timely, and accurate manner, and that our interns receive the proper professional development support that they need to succeed in their careers. Kelly will be responsible for all partnership development, recruitment, and training of the individuals whom will participate on this project. Kelly recently joined ACE in March, with a background in youth development and previous experience serving in AmeriCorps NCCC, where she participated in various conservation projects as a Corps Member and a Team Leader, AmeriCorps VISTA, and serving on a conservation crew in Alaska. Kelly has received multiple awards for her service and commitment to AmeriCorps and National Service including Congressional Award, the President Service Award for completing 2,000 hrs. of service and the President's Lifetime Achievement Award for volunteering over 4,000 hours during his lifetime.

Annie Meltzer, ACE EPIC Federal Grants and Finance Manager:

Email: ameltzer@usaconservation.org

Phone: (385) 249-0823

Annie will provide the necessary oversight on agency agreements to assure that all reporting, invoicing, and compliance issues are professionally and promptly handled. Annie joined the ACE team in 2016 as the Federal Grants and Finance Manager. She draws upon her grants management experience from National Geographic Society Committee for Research and Exploration and grant writing experience from graduate school at the University of Tennessee. Her international fieldwork experience in environmental geography sparked a passion for conservation of National Parks and public lands.

Ben Pohl, ACE Technology Support Specialist

Email: bpohl@usaconservation.org

Phone: (801) 631-2605

Ben supports our Director of Technology by managing the company website, developing company databases, and assisting with various technology related tasks. Ben is proficient in HTML, CSS, WordPress, FileMaker Pro, and JavaScript. He is currently studying Ruby on Rails in order to assist the development of our online services. The goal is to provide our partners and members online account systems so they can have quick and easy access to ACE's online resources. He loves that he is supporting the advancement of conservation through technology. Before he was working on technology projects, Ben spent time managing corps members on various conservation projects. Some of his projects included: trail

building, fuel reduction, environmental restoration, and light construction work. As he continued through his career he transitioned out of the field and started leveraging his technology skills to members. Ben has received multiple awards for his service and commitment to National Service including the Heart and Soul Award for outstanding contribution to Michigan nonprofits; Excellence of Service Award from the AmeriCorps Pacific Region Leadership team for his leadership and commitment to service; and the President's Lifetime Achievement Award for volunteering over 4,000 hours during his lifetime.

Chris Baker, President and CEO:

Email: cbaker@usaconservation.org

Phone: (928) 699-1068

Chris guides the strategic growth of the organization, is the primary point of contact for new partnerships, reports to the Board of Directors, hires and supervises program directors, and is ultimately responsible for ensuring that ACE continues to serve as a safe, responsive, and productive partner to our nation's land stewards. Chris began his career in conservation as an AmeriCorps member on the inaugural crew of the Coconino Rural Environment Corps (CREC) in 1996. Chris served as Crew Supervisor and Operations Manager with CREC for 6 years, spent one year as the Director of the Nevada Conservation corps, and founded ACE in 2003. Overall Chris has 18 years of experience managing youth activities within the conservation corps and youth development models.

Current/Past Examples of ACE Projects/Partnerships:

ACE is widely recognized among the BLM, NPS, and other agency project partners as a vital resource for accomplishing conservation-related projects in a professional and effective manner. ACE strongly feels that the growing and substantial utilization of ACE interns and crews in the BLM, NPS, USFS and within other agencies is a direct result of the quality of work achieved, and the ability of ACE to recruit and train well supervised interns and team members capable of working relatively independently with general agency oversight.

Below is a partial list of example partnership programs that ACE has been working with BLM:

- **Assessment, Inventory, and Monitoring Programs**
 - Based out of the Utah State Office (various field offices) and Colorado.
- **Utah Wilderness Study Area Pilot Project Program**
 - Utah State Office
- **Aquatic & Riparian Effectiveness Monitoring Program**
 - Utah State Office
- **Direct Hire Authority**
 - National Recruitment and Retention program located in more than 30 offices throughout all of BLM - <http://www.usaconservation.org/programs/epic-internship/dha-home/>
- **NLCS Wilderness Inventory and Monitoring Team Programs**
 - California State Office, Various CA locations. Team is using a modified version of the WildSnap App to conduct inventories throughout various locations in CA, through 2017.
- **St. George Field Office Range/Recreation Programs**
 - Comprehensive program implementation
- **Utah State Office Natural & Cultural Resource Management Internship Program California Desert District**
 - West Mojave Management Planning CRM effort
- **Flat-Tailed Horned Lizard Monitoring Program**
 - El Centro Field Office (US Military Partnership)

List of all active agreements between BLM and ACE:**AZ**

GIDO	L14AC00196	District Youth Internships & PLC Opportunities for Youth
PHDO	L15AC00012	Recreation and Public Lands Restoration and Maintenance
TUFO	L16AC00235	GIDO PLC Border Restoration
TUFO	L16AC00336	Youth Natural Resource Conservation and Monitoring

CA

BAFO	L12AC20437	OHV Interpretation
BAFO	L16AC00083	Archaeology Internships
BAKO	L12AC20522	CRM – Archaeological Range Program
BAKO	L16AC00082	Recreation Wilderness Intern Program
CASO	L16AC00086	Wild and Scenic Rivers Interns
CASO	L16AC00174	Wilderness Inventory and Monitoring Youth Corps Team
CDD	L16AC00092	West Mojave Travel Arch Interns (Ridgecrest/Barstow)
CPNM	L15AC00163	Natural/Cultural Resource Program
ECFO	L15AC00013	Flat Tail Horned Lizard Plot Monitoring
ECFO	L15AC00113	CCS – Flat Tail Horned Lizard Plot Monitoring
RIFO	L16AC00085	Restoration Interns

EASO

EASO	L14AC00397	Jupiter Inlet Lighthouse ONA – Recreation Youth Opportunities on Public Lands
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OR/WA

AREMP	L14AC00027	Aquatic & Riparian Effectiveness Monitoring Program
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CODO	L14AC00331	Intern and Resource Assistant Program
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NM

LCFO	L15AC00275	Youth and Intern Opportunities to Work on New Mexico Public Lands
NMSO	L15AC00276	AIM – San Luis Valley Field Office

UT

CCFO	L14AC00248	Sensitive Species Recovery, Inventory and Monitoring Youth Project
CLDQ	L13AC00066	Interpretive Paleontologist
MOFO	L12AC20468	Range Technician
PRFO	L15AC00221	Youth Cultural Resources Program (Nine-Mile Canyon)
PRFO	L15AC00226	Threatened and Endangered Species Plant Survey Project
SGFO	L16AC00034	Range and Resource Management Internship
SGFO	L16AC00094	Recreation Resource Management
UTSO	L13AC00095	National History Trails Inventory
UTSO	L12AC20612	Wilderness Study Area Pilot Project
UTSO	L13AC00277	Paleo Database
UTSO	L14AC00365	Recreation Site Design
UTSO	L16AC00103	AIM Statewide Implementation

Project Narrative File(s)

* Mandatory Project Narrative File Filename:

[Add Mandatory Project Narrative File](#)

[Delete Mandatory Project Narrative File](#)

[View Mandatory Project Narrative File](#)

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

[Add Optional Project Narrative File](#)

[Delete Optional Project Narrative File](#)

[View Optional Project Narrative File](#)

Areas Affected by Project

Cedar City, Iron County, UT

Bears Ears National Monument, UT

San Juan County, UT

Budget Narrative File(s)

* **Mandatory Budget Narrative Filename:**

[Add Mandatory Budget Narrative](#)

[Delete Mandatory Budget Narrative](#)

[View Mandatory Budget Narrative](#)

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

[Add Optional Budget Narrative](#)

[Delete Optional Budget Narrative](#)

[View Optional Budget Narrative](#)

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="02/02/2017"/>	4. Applicant Identifier: <input type="text"/>	
5a. Federal Entity Identifier: <input type="text"/>	5b. Federal Award Identifier: <input type="text"/>	
State Use Only:		
6. Date Received by State: <input type="text"/>	7. State Application Identifier: <input type="text"/>	
8. APPLICANT INFORMATION:		
* a. Legal Name: <input type="text" value="University of Southern California"/>		
* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="951642394"/>	* c. Organizational DUNS: <input type="text" value="072933393"/>	
d. Address:		
* Street1: <input type="text" value="Department of Contracts and Grants"/>	Street2: <input type="text" value="2001 North Soto Street Suite 205"/>	
* City: <input type="text" value="Los Angeles"/>	County/Parish: <input type="text"/>	
* State: <input type="text" value="CA: California"/>	Province: <input type="text"/>	
* Country: <input type="text" value="USA: UNITED STATES"/>	* Zip / Postal Code: <input type="text" value="90089 9235"/>	
e. Organizational Unit:		
Department Name: <input type="text" value="Div of Contracts and Grants"/>	Division Name: <input type="text" value="Vice President For Research"/>	
f. Name and contact information of person to be contacted on matters involving this application:		
Prefix: <input type="text" value="Ms."/>	* First Name: <input type="text" value="Lillian"/>	
Middle Name: <input type="text" value="Ann"/>	* Last Name: <input type="text" value="Rivera"/>	
Suffix: <input type="text"/>	Title: <input type="text" value="Contract and Grant Officer"/>	
Organizational Affiliation: <input type="text" value="University of Southern California"/>		
* Telephone Number: <input type="text" value="+1 323 442 2400"/>	Fax Number: <input type="text" value="+1 323 442 2835"/>	
* Email: <input type="text" value="lrivera@usc.edu"/>		

DOI-2021-07 00557

Application for Federal Assistance SF-424		
* 9. Type of Applicant 1: Select Applicant Type: <input type="text" value="0: Private Institution of Higher Education"/>		
Type of Applicant 2: Select Applicant Type: <input type="text"/>		
Type of Applicant 3: Select Applicant Type: <input type="text"/>		
* Other (specify): <input type="text"/>		
* 10. Name of Federal Agency: <input type="text" value="Bureau of Land Management"/>		
11. Catalog of Federal Domestic Assistance Number: <input type="text" value="15.231"/>		
CFDA Title: <input type="text" value="Fish, Wildlife and Plant Conservation Resource Management"/>		
* 12. Funding Opportunity Number: <input type="text" value="L17AS00001"/>		
* Title: <input type="text" value="BLM FY2017 Bureau wide National Conservation Lands Scientific Studies Support Program"/>		
13. Competition Identification Number: <input type="text"/>		
Title: <input type="text"/>		
14. Areas Affected by Project (Cities, Counties, States, etc.): <input type="text"/> <input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>		
* 15. Descriptive Title of Applicant's Project: <input type="text" value="INVENTORY AND SALVAGE OF PRE DINOSAUR FOSSIL VERTEBRATES IN THE CARBONIFEROUS PERMIAN CUTLER GROUP, VALLEY OF THE GODS AND JOHNS CANYON, SE UTAH"/>		
Attach supporting documents as specified in agency instructions. <input type="button" value="Add Attachments"/> <input type="button" value="Delete Attachments"/> <input type="button" value="View Attachments"/>		

Application for Federal Assistance SF-424	
16. Congressional Districts Of:	
* a. Applicant	CA 034
* b. Program/Project	UT 003
Attach an additional list of Program/Project Congressional Districts if needed.	
<input type="text"/>	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
17. Proposed Project:	
* a. Start Date:	07/01/2017
* b. End Date:	06/30/2018
18. Estimated Funding (\$):	
* a. Federal	20,941.00
* b. Applicant	7,031.00
* c. State	0.00
* d. Local	0.00
* e. Other	500.00
* f. Program Income	0.00
* g. TOTAL	28,472.00
* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?	
<input type="checkbox"/> a. This application was made available to the State under the Executive Order 12372 Process for review on	<input type="text"/>
<input checked="" type="checkbox"/> b. Program is subject to E.O. 12372 but has not been selected by the State for review.	
<input type="checkbox"/> c. Program is not covered by E.O. 12372.	
* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If "Yes", provide explanation and attach	
<input type="text"/>	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="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)	
<input checked="" type="checkbox"/> ** 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:	Ms.
* First Name:	Lillian
Middle Name:	Ann
* Last Name:	Rivera
Suffix:	
* Title:	Contract and Grant Officer
* Telephone Number:	+1 323 442 2400
Fax Number:	+1 323 442 2835
* Email:	lriviera@usc.edu
* Signature of Authorized Representative:	Lillian Rivera
* Date Signed:	02/02/2017

DOI-2021-07 00559

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	
Natural History Museum of Utah, University of Utah	
* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Prefix: <input style="width: 80px;" type="text"/>	* First Name: <input style="width: 200px;" type="text" value="Brent"/> Middle Name: <input style="width: 150px;" type="text"/>
* Last Name: <input style="width: 350px;" type="text" value="Brown"/>	Suffix <input style="width: 80px;" type="text"/>
* Title: <input style="width: 250px;" type="text" value="Director"/>	
* SIGNATURE: <input style="width: 300px;" type="text" value="Brent Brown"/>	* DATE: <input style="width: 150px;" type="text" value="01/24/2017"/>

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="01/31/2017"/>	4. Applicant Identifier: <input type="text"/>	
5a. Federal Entity Identifier: <input type="text"/>	5b. Federal Award Identifier: <input type="text"/>	
State Use Only:		
6. Date Received by State: <input type="text"/>	7. State Application Identifier: <input type="text"/>	
8. APPLICANT INFORMATION:		
* a. Legal Name: <input type="text" value="Southern Utah University"/>		
* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="89 6000481"/>	* c. Organizational DUNS: <input type="text" value="0209176700000"/>	
d. Address:		
* Street1: <input type="text" value="351 W University Blvd"/>	Street2: <input type="text"/>	
* City: <input type="text" value="Cedar City"/>	County/Parish: <input type="text"/>	
* State: <input type="text" value="UT: Utah"/>	Province: <input type="text"/>	
* Country: <input type="text" value="USA: UNITED STATES"/>	* Zip / Postal Code: <input type="text" value="84720 2415"/>	
e. Organizational Unit:		
Department Name: <input type="text" value="Outdoor Engagement Center"/>	Division Name: <input type="text" value="University College"/>	
f. Name and contact information of person to be contacted on matters involving this application:		
Prefix: <input type="text"/>	* First Name: <input type="text" value="Jim"/>	
Middle Name: <input type="text"/>	* Last Name: <input type="text" value="Pollard"/>	
Suffix: <input type="text"/>	Title: <input type="text" value="Research Fellow"/>	
Organizational Affiliation: <input type="text" value="Southern Utah University"/>		
* Telephone Number: <input type="text" value="(435) 586 1983"/>	Fax Number: <input type="text"/>	
* Email: <input type="text" value="jamespollard1@suu.edu"/>		

Application for Federal Assistance SF-424			
* 9. Type of Applicant 1: Select Applicant Type:			
<input type="text" value="H: Public/State Controlled Institution of Higher Education"/>			
Type of Applicant 2: Select Applicant Type:			
<input type="text"/>			
Type of Applicant 3: Select Applicant Type:			
<input type="text"/>			
* Other (specify):			
<input type="text"/>			
* 10. Name of Federal Agency:			
<input type="text" value="Bureau of Land Management"/>			
11. Catalog of Federal Domestic Assistance Number:			
<input type="text" value="15.231"/>			
CFDA Title:			
<input type="text" value="Fish, Wildlife and Plant Conservation Resource Management"/>			
* 12. Funding Opportunity Number:			
<input type="text" value="L17AS00001"/>			
* Title:			
<input type="text" value="BLM FY2017 Bureau wide National Conservation Lands Scientific Studies Support Program"/>			
13. Competition Identification Number:			
<input type="text"/>			
Title:			
<input type="text"/>			
14. Areas Affected by Project (Cities, Counties, States, etc.):			
<input type="text" value="Areas Affected by Project.pdf"/>	<input type="button" value="Add Attachment"/>	<input type="button" value="Delete Attachment"/>	<input type="button" value="View Attachment"/>
* 15. Descriptive Title of Applicant's Project:			
<input type="text" value="A Survey of Aquatic Invertebrates of Spring Systems in Southern Utah"/>			
Attach supporting documents as specified in agency instructions.			
<input type="button" value="Add Attachments"/>	<input type="button" value="Delete Attachments"/>	<input type="button" value="View Attachments"/>	

Application for Federal Assistance SF-424	
16. Congressional Districts Of:	
* a. Applicant	UT 002
* b. Program/Project	UT 002
Attach an additional list of Program/Project Congressional Districts if needed.	
Additional List of Program.pdf	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
17. Proposed Project:	
* a. Start Date:	04/01/2017
* b. End Date:	03/31/2022
18. Estimated Funding (\$):	
* a. Federal	25,000.00
* b. Applicant	0.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	25,000.00
* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?	
<input type="checkbox"/> a. This application was made available to the State under the Executive Order 12372 Process for review on	
<input type="checkbox"/> b. Program is subject to E.O. 12372 but has not been selected by the State for review.	
<input checked="" type="checkbox"/> c. Program is not covered by E.O. 12372.	
* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If "Yes", provide explanation and attach	
	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="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)	
<input checked="" type="checkbox"/> ** 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: Julia
Middle Name:	
* Last Name:	Anderson
Suffix:	
* Title:	Director of Sponsored Projects
* Telephone Number:	435 865 8175
Fax Number:	
* Email:	juliaanderson@suu.edu
* Signature of Authorized Representative:	Karen Wilson
* Date Signed:	01/31/2017

DOI-2021-07 00563

Additional List of Program/Project Congressional Districts

UT-002

UT-003

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

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(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.

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* APPLICANT'S ORGANIZATION	
PENNSYLVANIA STATE UNIVERSITY UNIV PARK	
* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Prefix: Dr.	* First Name: John Middle Name: W
* Last Name: Hanold	Suffix
* Title: Associate VP for Research	
* SIGNATURE: John W. Hanold	* DATE: 01/31/2017

DOI-2021-07 00565

Budget Narrative File(s)

* **Mandatory Budget Narrative Filename:**

[Add Mandatory Budget Narrative](#)

[Delete Mandatory Budget Narrative](#)

[View Mandatory Budget Narrative](#)

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

[Add Optional Budget Narrative](#)

[Delete Optional Budget Narrative](#)

[View Optional Budget Narrative](#)

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

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* APPLICANT'S ORGANIZATION	
University of Southern California	
* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Prefix: Ms.	* First Name: Lillian
Middle Name: Ann	
* Last Name: Rivera	Suffix
* Title: Contract and Grant Officer	
* SIGNATURE: Lillian Ann Rivera	* DATE: 02/02/2017

Manifest for Grant Application # GRANT12328145

Grant Application XML file (total 1):

1. GrantApplication.xml. (size 17775 bytes)

Forms Included in Zip File(total 7):

1. Form GG_LobbyingForm-V1.1.pdf (size 23305 bytes)
2. Form ProjectNarrativeAttachments_1_2-V1.2.pdf (size 21479 bytes)
3. Form SF424_2_1-V2.1.pdf (size 30773 bytes)
4. Form BudgetNarrativeAttachments_1_2-V1.2.pdf (size 22451 bytes)
5. Form SF424A-V1.0.pdf (size 29011 bytes)
6. Form Key_Contacts-V1.0.pdf (size 25035 bytes)
7. Form SF424B-V1.1.pdf (size 28299 bytes)

Attachments Included in Zip File (total 2):

1. ProjectNarrativeAttachments_1_2
ProjectNarrativeAttachments_1_2-Attachments-ProjectNar1008612459.pdf
application/octet-stream (size 1145229 bytes)
2. BudgetNarrativeAttachments_1_2
BudgetNarrativeAttachments_1_2-Attachments-BudgetNarrative1008612458.pdf
application/octet-stream (size 13217224 bytes)

Project	Submitter/PI	Requested Amount	Grant #
Critical Dinosaur Fossil Resource Protection, Inventory, and Salvage: Late Cretaceous	Randall Irmis	20,739	12321940
A Survey of Aquatic Invertebrates of Spring Systems in Bears Ears National Monument, Utah	James Pollard	25,000*	12325388
Inventory and Monitoring Research for Ecological and Social Conditions in BLM's GSENM WSA's	Derrick Taff	25,000	12325434
Supporting Scientific Studies of Archaeological Collections from Cedar Mesa Canyons	Shannon Tushingam/Bill Lipe	11,793	12327304
Ecosystems and Plant Resources of Archaeological Sites in the Four Corners Region, USA	Lisbeth Louderback	24,874	12327822
Inventory and Salvage of Pre-Dinosaur Fossil Vertebrates in the Carboniferous-Permian Cutler Group, Valley of the Gods and John's Canyon, SE Utah	Adam Huttenlocker	20,941*	12328145
WSA Monitoring - WildSnap - Development	Shane Barrow	25,000*	12328827

Proponent	NLCS Unit/Type
Utah Natural History Museum	Grand Staircase- Escalante (NM)
Southern Utah University	Bears Ears (NM)
Penn State	Grand Staircase- Escalante (NM and WSA)
Washington State University	Bears Ears (NM)
University of Utah	Bears Ears (NM)
University of Southern California	Bears Ears (NM)
American Conservation Experience	WSAs Statewide

Notes

*** Duplicate projects accidentally submitted- waiting for removal of 1232148 from Sharepoint; also SUU must update their costs to reflect the CESU rate.*

USC must update their costs to reflect the CESU rate.

*** Project originally ranked as ineligible- will need to be clarified to account for research/scientific support versus youth portion.*

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.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL Brent Brown	TITLE Director
APPLICANT ORGANIZATION Natural History Museum of Utah, University of Utah	DATE SUBMITTED 01/24/2017

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BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 01/31/2019

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Fish, Wildlife and Plant Conservation Resource Management	15.231	\$ 25,000.00	\$	\$	\$	\$ 25,000.00
2.						
3.						
4.						
5. Totals		\$ 25,000.00	\$	\$	\$	\$ 25,000.00

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Tracking Number: GRANT12325388

Funding Opportunity Number: L17AS00001 Received Date: Jan 31, 2017 11:37:53 AM EST

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1)	(2)	(3)	(4)	
	Fish, Wildlife and Plant Conservation Resource Management				
a. Personnel	\$ 16,568.00	\$	\$	\$	\$ 16,568.00
b. Fringe Benefits	2,100.00				2,100.00
c. Travel	1,552.00				1,552.00
d. Equipment					
e. Supplies	1,513.00				1,513.00
f. Contractual					
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)	21,733.00				\$ 21,733.00
j. Indirect Charges	3,267.00				\$ 3,267.00
k. TOTALS (sum of 6i and 6j)	\$ 25,000.00	\$	\$	\$	\$ 25,000.00
7. Program Income	\$	\$	\$	\$	\$

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SECTION C - NON-FEDERAL RESOURCES					
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS	
8. Fish, Wildlife and Plant Conservation Resource Management	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	
9. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
10. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
11. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
12. TOTAL (sum of lines 8-11)	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	
SECTION D - FORECASTED CASH NEEDS					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ <input type="text" value="25,000.00"/>	\$ <input type="text" value="6,250.00"/>	\$ <input type="text" value="6,250.00"/>	\$ <input type="text" value="6,250.00"/>	\$ <input type="text" value="6,250.00"/>
14. Non-Federal	\$ <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
15. TOTAL (sum of lines 13 and 14)	\$ <input type="text" value="25,000.00"/>	\$ <input type="text" value="6,250.00"/>	\$ <input type="text" value="6,250.00"/>	\$ <input type="text" value="6,250.00"/>	\$ <input type="text" value="6,250.00"/>
SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT					
(a) Grant Program	FUTURE FUNDING PERIODS (YEARS)				
	(b) First	(c) Second	(d) Third	(e) Fourth	
16. Fish, Wildlife and Plant Conservation Resource Management	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	
17. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
18. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
19. <input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
20. TOTAL (sum of lines 16 - 19)	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	\$ <input type="text"/>	
SECTION F - OTHER BUDGET INFORMATION					
21. Direct Charges: <input type="text" value="\$21733"/>		22. Indirect Charges: <input type="text" value="\$3267"/>			
23. Remarks: <input type="text" value="Indirect charges based on our CPESU agreement of 17.5% of salaries, wages, and benefits."/>					

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CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

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

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

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

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

Statement for Loan Guarantees and Loan Insurance

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

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

* APPLICANT'S ORGANIZATION	
Washington State University	
* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE	
Prefix: <input type="text"/>	* First Name: <input type="text" value="Dan"/> Middle Name: <input type="text"/>
* Last Name: <input type="text" value="Nordquist"/>	Suffix <input type="text"/>
* Title: <input type="text" value="AV/Director & Authorized Sign"/>	
* SIGNATURE: <input type="text" value="Dan Nordquist"/>	* DATE: <input type="text" value="02/01/2017"/>

ATTACHMENT A: PROJECT PROPOSAL (SUGGESTED FORMAT)

Instructions: A Project Proposal must be submitted with the Standard Form (SF) 424 Application for Federal Assistance for all BLM Assistance Agreements. Complete each section below. Use additional sheets as needed. **If this is a continuation of existing BLM cooperative agreement, identify the current BLM agreement number and project title below.

Person Submitting Proposal: Shannon Tushingham Date: 1-31-2017

Organization Name: Washington State University Department of Anthropology

**Agreement or Announcement No.: FOA L17AS00001 CFDA 15.224-Cultural Resource Management

** Agreement or Announcement Title: BLM FY 2017 Bureau-wide National Conservation Lands Scientific Studies Support Program

Estimated Period of Performance: May, 2017 through April 2018

BLM POC: Museum of Anthropology, College Hall, Washington State University, Pullman, WA 99164-4910

This work will occur on: Public Lands (the museum collections are from public lands in Utah)
 Both Public & Private Lands

YOUR MISSION: (Describe your mission. Describe why this support is being requested.)

The mission of the archaeological component of the WSU Museum of Anthropology (MoA) is to curate archaeological collections and records from the Columbia Plateau and foster research on materials related to the research emphases of faculty and graduate students. The Museum adheres to professional standards, protects the curated materials indefinitely, and makes them available for well-justified research and educational studies. The MoA curates (currently at no charge to the BLM) the extensive collections resulting from the Cedar Mesa Project and related studies in SE Utah. The project proposed here will further the mission of the MoA by making a 2000 year-old collection of organic materials, as well as 1700 color images of canyon archaeological sites more accessible for future well-justified research studies by archaeologists, other scientists, and cultural resource managers.

OBJECTIVES AND RESEARCH THEMES:

Title:

Supporting Scientific Studies of Archaeological Collections from Cedar Mesa Canyons

Abstract:

The ledges and natural shelters of the Cedar Mesa canyons have protected and preserved the Bears Ears National Monument's (BENM) most frequently studied and visited cliff dwellings, rock art panels, and other archaeological sites. The Cedar Mesa Archaeological Project (CMP) conducted extensive surveys in 1971-75 (with smaller related studies both before and after). We propose several ways to support further research with these irreplaceable collections. 1) Digitize over 1500 color slides of canyon sites and document over 200 images already digitized. This will

greatly improve access to these images for various studies, and especially for assessing changes in canyon site conditions since the late 1960s. 2) Reorganize and relabel the large assemblage of well-preserved organic materials from a 2000 year old midden deposit at the Turkey Pen (TP) site. (This “time capsule” has supported studies on topics such as turkey domestication and evolution of maize.) 3) Document the history of research with TP midden specimens over the past 35 years.

Research Themes

Research Synthesis. The inventory of past research uses of the TP midden collection will serve as a synthesis of some of the most important research that has been conducted to date on the Basketmaker II period (BC 400—AD 500) in the Ancestral Pueblo occupation of the Four Corners area of the Southwest. Previous research that was based in part on specimens from this collection has been widely shared with both the scientific community and the general public. For example, research on turkey domestication has been disseminated in both technical reports (Speller et al. 2010) and in those written for the general public (Lipe 2014). The reorganization and relabeling of this collection will promote future research that can address overall NLCS Science Goals (BLM 2007) such as Objectives 1) Promoting scientific study within NLCS Units and 4) Communicating scientific findings externally. Information about the Cedar Mesa canyon sites overall has also been disseminated both to the archaeological community (Lipe et al. 2016) and to the general public (Lipe 2014; Rommes and Lipe 2013). Digitizing images of the canyon sites will promote further research on this resource that can be shared with both scholarly and general audiences, as per NLCS Science Goals 1 and 4 (BLM 2007).

Other Management-Driven Research In addition to being useful to researchers, digital images of canyon sites photographed between 50 and 30 years ago will make it easier for BLM cultural resource managers to assess both natural and human-induced changes that have taken place over these decades. The digital images can be taken into the field on tablet computers, so that managers can examine current conditions of site aspects photographed in the past. Although those photos were not intended to provide a full and systematic record of site conditions at the time, they generally depict cultural features such as structures or rock art, which are the site elements most in danger from intentional or unintentional disturbance by visitors. The BEEM cultural resource managers will need to decide if management interventions such as requiring permits, rerouting access trails, or increasing ranger patrols are needed at particular sites, and the Cedar Mesa canyon site images should be helpful in these assessments

PROJECT BACKGROUND AND TECHNICAL APPROACH:

Project Background

Although the general Cedar Mesa area has been the subject of both legitimate and illegal archaeological excavations since the 1890s (Blackburn and Williamson 1997), the major research activities of the past 50 years have been associated with William Lipe (now a Professor Emeritus of Anthropology at Washington State University). Lipe was a crew chief (1958-1960) on the University of Utah section of the Glen Canyon Archaeological Project, and used Glen Canyon data for his dissertation at Yale (Lipe 1966, 1970). In 1967, while on the faculty at State

University of New York, he conducted a reconnaissance survey of several prospective areas for future research, including Cedar Mesa. Some of the photos in the canyon sites digitization project are from that reconnaissance; some but not all can be correlated to sites that were included in later surveys and/or that have Smithsonian (42SA) numbers. In 1969 and 1970, with the aid of grants from the National Geographic Society and the State University of New York Research Foundation, Lipe conducted both survey and excavations on Cedar Mesa. Most of this work was on the mesa top (which is where most of the archaeological sites are) but some was in the canyons, so some of the canyon site images are from those years. There are handwritten photo logs for the 1967 and 1969-70 surveys, and some of this information has been entered into the MoA computer database for the CMP. There are some gaps in the database and questions about captions for some images; this will require examination of the original photo logs.

The major fieldwork effort on Cedar Mesa was in 1971 through 1975 and is what is generally termed the Cedar Mesa Project (CMP). This was co-directed by Lipe and R.G. Matson (in 1971 an Assistant Professor at Northern Arizona University, and now a Professor Emeritus at the University of British Columbia). Financial support was largely through grants from the National Science Foundation, and the institutional base for the project was the Museum of Northern Arizona in Flagstaff, where Lipe was serving as Assistant Director for Research. The CMP was largely based on survey and surface documentation of sites, although there was a testing component that involved limited subsurface investigations at a small percentage of the sites. The CMP included several sub-projects, with the principal one being the "Basic Quadrat Survey" which consisted of intensive survey of a stratified random sample of 75 quadrats (400 by 400 m in size) in five of the 25 "drainage units" defined for the 800 km² study area in the central part of Cedar Mesa. The sites in these quadrats were mapped in detail and surface artifacts were collected. The drainage units selected were named for their main canyons: Upper Grand, Bullet, West Johns, North Road, and Hardscrabble. Various publications have reported inferences made from the Quadrat survey (e.g., Matson et al. 1988; Matson 1991), and detailed data and results are in a long report (Matson, Lipe, and Haase 1990, revised 2015)

A related sub-project of the CMP was the Canyon Inventory. The entrenched canyons of the five selected drainage units were surveyed, with basic documentation of each site identified, but no artifact collection in this initial survey phase. Basic field forms were completed for the inventory of 326 sites. From this inventory, a stratified random sample of was selected, and these sites were revisited and subjected to the same level of detailed mapping and surface artifact collection as the sites in the Quadrat survey. Morton (2002) reports on the Pueblo II and III (AD 1050-1270) sites identified in the Canyon Inventory, and classified artifact totals for the sites are tabulated in Matson, Lipe, and Haase (1990, revised 2015). Color and B/W photos were taken at nearly all the sites indentified, and the sites that were revisited for detailed recording yielded additional numbers of images. Most of the B/W images are stored as negatives and in most cases, contact sheets, at the WSU MoA. This proposal deals only with digitizing and upgrading the documentation of the color slides from the canyon sites. Descriptive captions for most of the slides have been entered in the MoA database for the CMP, but there are gaps and questions that will require checking the original handwritten photo logs or site notes for some sites and images.

A third sub-project of the CMP was the Tree-Ring and Architecture Survey. This was designed to obtain tree-ring dates and detailed architectural data from canyon sites in a stretch of Grand

Gulch and also in a short segment of McLoyds Canyon on the eastern side of Cedar Mesa. An initial inventory survey was conducted, with 68 sites being identified. Basic information was recorded but no artifacts were collected. The sites that had the greatest potential for tree-ring and architectural data were revisited and recorded in detail. Surface artifacts were collected, in addition to cores from structural beams for tree-ring dating. Reports on this work include those by Bloomer (1989) and Bedell (2000). Bedell worked with the records obtained during the regular CMP. Bloomer also used these records, but in 1986, spent time in the field assembling further documentation at the Moon House complex and other sites in the McLoyds Canyon area (Bloomer 1989). He took a number of color slides and contributed digital images of these to the MoA. These are accompanied by handwritten photo logs, only some of which have been entered digitally into the MoA computer database for the CMP.

The MoA collection also includes a few post-1970s slides of canyon sites that had been originally identified on the Canyon Inventory or the Tree-Ring and Architecture sub-projects. Some additional work is needed on the accompanying documentation for this small set of slides. However, the locations of the great majority of the sites addressed by this proposal were recorded in the field on large-scale aerial photos. In 2013-2015, a student volunteer used the original aerial photos to georeference the precise locations of these sites. In sum, we propose to digitize and upgrade the documentation for approximately 1540 color slides and to upgrade the documentation for 230 already-digitized slides contributed by William Bloomer.

The CMP work in the 1970s also included limited test excavations at selected sites, most of which had been identified in the Quadrat Survey. A selected non-quadrat site was the Turkey Pen site, located in a large dry natural shelter in Grand Gulch. In 1972, R.G. Matson and several members of the CMP crew excavated a single test pit into a deep dry midden at Turkey Pen (Matson 1991, 2014, 2015). This was selected because it clearly had the potential to yield remains of dry organic refuse that would be useful in understanding prehistoric subsistence practices and possibly past environments as well. The midden was found to be stratified, and contained abundant refuse such as corn cobs, fragments of corn leaves and stalks, human and turkey coprolites, loose strands of human hair, bits of yucca fiber cordage, small fragments of deer or mountain sheep hide, and wild plant remains such as yucca leaves, pinyon nut hulls, grass stems, etc. No human burials were encountered. A 1.5 m wide face of the test pit was cleaned and the stratigraphy profiled, and then a 50 cm square was isolated by excavating a 50 cm column on each side of the central column. These side columns were excavated by following the layers identified in the profile, and the deposits were screened through ¼ inch mesh, with all materials collected in the screen being bagged up by level. The central column was then excavated, and each stratigraphic layer was bagged up in total. The bulky (and heavy) samples were packed out of Grand Gulch by horseback. Back at the lab at the Museum of Northern Arizona in Flagstaff, some of the deposits from the central column were put through graduated soil sieves to separate organic materials of various size classes from the sandy matrix. Only a limited portion of the central column was treated in this way before the sieving process was stopped because the research goals of the sieving had not been well-developed.

The samples obtained from this single 1972 test pit are uniquely valuable because in 1979, the TP midden was extensively churned by looters. Radiocarbon dating of samples from the 1972 test pit indicate that except for the thin very topmost level, the midden accumulated principally

between AD 1 and 200, in the Basketmaker II period. We now have over 32 dates, most of them done by the AMS method. The midden samples from the TP n test pit currently total 241 bags that are securely stored in 57 plastic museum storage boxes, each with an approximate 2/3 cubic foot capacity.

In the 1980s, a study of pollen from human coprolites from the TP midden indicated a high level of dietary dependence on maize (Aasen 1984) and Matson and some of his graduate students at UBC reached the same conclusion based on macrobotanical specimens from midden samples. This evidence, coupled with Basketmaker II settlement patterns revealed by the CMP Quadrat survey and the results of isotopic analyses of human remains that were beginning to be done at other sites (e.g., Decker and Tieszen 1989; Matson and Chisholm 1991) led to the conclusion that intensive farming had been established as early as late BC/early AD times (Matson 1991). This overturned the long-held view that the Basketmaker II period had been one where maize farming was secondary to foraging. More recent studies relying on Turkey Pen specimens have contributed additional important findings, for example, that the Basketmaker II people who left the midden deposits were keeping turkeys and feeding them maize (Lipe et al. 2016; Nott 2010). DNA from dried turkey droppings from the midden represents the oldest evidence so far discovered for a distinctive Southwestern variety of domestic turkey (Speller et al. 2010). Isotopic analysis of loose human hairs from the midden (Cooper et al. 2016) has also recently yielded evidence that the TP occupants may have engaged in short episodes of foraging, although maize strongly dominated their diet over most of the year.

The artifacts and specimens from the CMP and other related studies in SE Utah are curated in the MoA Museum Storage Building, constructed by WSU in the 1980s. This is a secure facility with adequate space and shelving to preserve materials from the archaeological collections for which the MoA is responsible. The paper and digital records for these projects (including the ones described here) are kept in several rooms in College Hall. This building on the central WSU campus houses the Department of Anthropology, including the exhibits and staff offices of the MoA

Technical Approach

Digitizing canyon site slides and upgrading their documentation. The existing MoA database indicates there are somewhat over 1500 slides with images of Cedar Mesa canyon sites. These slides are securely stored in slide trays in MoA file cabinets. Scanning the slides will be done by the hourly worker assigned this job. This person will be a WSU student or graduate who will have had some previous experience working with MoA collections and records. Lipe and Curewitz will introduce him/her to the CMP photos and photo records—those in the MoA database and the original field photo logs from which the database entries are derived. Playing an important role in this project will provide the hourly worker with valuable experience in working with research data and in learning good museum curation practices.

For most photos—especially those from the main CMP work in the 1970s, the site number will be clear and the caption will describe what the photographer was trying to record. Where this information is missing from the MoA database or is unclear, the original field photo logs can be consulted, and Lipe or Curewitz will attempt to resolve remaining questions. Most of the slides

were duplicated in the early 2000s, so we will also need to set some criteria for deciding whether the original slide retains enough color and detail to warrant digitizing or whether the 15-year-old duplicate should be used. Our general impression is that most of the original slides—at least those shot with Kodachrome—have retained much of their quality, but this impression needs to be evaluated. The actual digitizing will be done on a large-bed scanner owned by the MoA. Slide frames allow 20 slides to be scanned at a time, with each frame taking several minutes. Ideally, each digital image can be provided with documentation (date of photo, film roll number, image number, name of photographer, site number, descriptive caption) copied from the appropriate entry in the MoA photo database. (Digitizing will of course halt the deterioration of the original or duplicate emulsion-based images.) For the slides about which questions exist, original field records or field notes will need to be consulted. Most of the work can be expected to go rapidly, but the “problem slides” will increase the time spent per slide averaged over the whole collection.

Upgrading documentation of digitized images received from William Bloomer. Bloomer took more than 200 images with his personal camera in the 1980s while he was doing the field studies for his MA thesis focused on the Moon House complex in McLoyds Canyon. The images appear to be good quality, and we have copies of Bloomer’s handwritten photo logs. He appears to have used the same intra-site feature numbers that were assigned in the Moon House complex by crews working on the Tree-Ring and Architecture sub-project in the 1970s. There also are some digital images of other sites in the general Moon House vicinity. Some of these are of sites also recorded in the 1970s by CMP crews, but some appear to be of other sites. Bloomer attempted to run down Smithsonian numbers for these sites and there are USGS quad sheets that have some and perhaps all the locations of these “additional” sites. Some of Bloomer’s Moon House and other images have entries in the MoA database, but for others we will have to go back to his field photo logs. Overall, he was a systematic worker, so it looks as if there is a good chance of coming up with adequate documentation for most of his images.

1) Canyon Site Deliverable: A database of digital images of canyon sites produced from color slides taken between 1967 and 1986 by archaeologists associated with the CMP and some other Cedar Mesa research supervised by William Lipe. The images will be accompanied by as accurate-as-possible documentation, based on existing digital and paper records. “Albums” of large-scale images accompanied by descriptive captions can readily be generated from the database for display on tablet computers that can be taken into the field. Because of the potential for some images to show confidential site locations, access to this database will be controlled by the Collections Manager at the WSU MoA, following protocols established in consultation with Bureau of Land Management personnel.

Reorganizing and Relabeling the Turkey Pen midden collection. Until the early 2000s, many of the midden samples were in the bags into which they had been placed in the field. Most of the samples were repackaged with fresh labels in the early 2000s. However, the existing labels use confusing terminology to distinguish material from the central midden column (which was collected in its entirety, layer by layer) as opposed to material from the side columns (that were screened by layer in the field, using standard ¼ inch screens). The labels also do not intuitively explain the sample categories that identify those that were passed through graduated soil sieves as opposed to samples that were screened through ¼ in mesh as opposed to samples that

represent whole central column layers. This information can be decoded from the existing labels, but they need to express it more clearly, and this will require printing revised labels. The midden collection currently consists of 241 bags stored in standard plastic storage boxes, each approximately 2/3 cubic foot in capacity. In addition, there are some samples that were being kept in one of the WSU labs and were not included in the rebagging of the collection in the early 2000s. These will need to be rebagged and labeled with current terminology. Additional museum-quality plastic bags and an estimated 8 additional storage boxes will be required as supplies, as will the appropriate number of bag and box labels. In addition, a new digital inventory of the collection will be prepared, with an entry for each bag, and a record of the storage box to which the bag is assigned.

2) Turkey Pen Collection Reorganization Deliverables: A full new inventory of the TP midden samples, using label categories that more clearly indicate sample provenience and type of processing. The bags will be relabeled, as will the storage boxes to which they are assigned. Up to 8 additional museum storage boxes will be added to accommodate sample bags not previously part of the rebagging work done in the early 2000s.

Producing a Historical Record of Research involving Turkey Pen Specimens. Numerous studies (some of which have been cited above) have been based on the analysis of specimens from the TP midden test pit. We can confidently expect future requests from other researchers for access to specimens. The WSU MoA has reasonably good records of what specimens have been used for what projects by what researchers, but prudent curation demands that we check and systematize these records and also identify what reports or publications (if any) have resulted from previous studies involving TP materials. We also need to determine whether items used in research projects (either by WSU faculty and students or by outside researchers) were fully consumed by the analysis or whether unaffected parts of the samples have been returned to the MoA.

A small set of TP midden samples are still being curated at the UBC Museum of Anthropology on loan to Prof. R.G. Matson. Some of these materials were studied in the 1980s as part of characterizing the archaeobotanical composition of the midden. Most recently, Matson made 20 corn cobs available to a PhD student at Cornell who is looking for genetic signals of how maize became adapted to growing conditions on the relatively cool high elevation Colorado Plateau after introduction from the hot low Southwestern deserts. That student is now a post-doc at the Max Planck Institute in Tübingen, Germany and will soon be submitting a paper to a major science journal describing a genomic signal of early flowering, thought to be one of the adaptations to the short growing seasons of the upland Southwest.

In any case, we need to be able to track the specimens that have been used in research and what that research has produced. This will be essential information for WSU MoA as the responsible curation facility, and will also be useful to future researchers as to what research using the TP collection has been attempted, and what information it produced. The history can also serve as the basis for a scholarly article describing the unique contributions of the TP midden sample and pointing out the great value of long-term curation of large samples of the incredibly diverse contents of middens from dry natural shelters.

3) Turkey Pen Research Record Deliverable. A history of the research uses of specimens from the TP midden over the past 35 years. This will provide a bibliography of publications or reports that have resulted from these uses, and will track the specimens used (i.e., whether fully consumed by the use, whether unused portions have been returned to the collection, whether some loans are still outstanding, etc.).

Milestone / Task / Activity	Start Date	Completion Date
Digitize color slides of canyon sites	August, 2017	December, 2017
Reorganize and re label the Turkey Pen midden collection	October, 2017	February 2018
Complete historical inventory of past Turkey Pen research and disposition of specimens used	February 2018	April, 2018

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PUBLIC BENEFIT:

(Describe how this project benefits the general public.)

President Obama's recent designation of the new BENM responds to the great regional, national and international interest in the archaeological sites, environments, and landscapes of this area, which includes Cedar Mesa as its best-known and most-visited part. Pueblo, Ute, and Navajo people also consider Cedar Mesa and the rest of the Bears Ears area as a place where ancestors lived. Present-day visits by Native Americans to ancient dwellings, camps, rock art panels, and shrines ensure that Cedar Mesa remains a part of their living cultural heritage. Cedar Mesa is also an important heritage area for Utah Mormons; in the winter of 1879-1880 a hardy band of Mormon pioneers settled the community of Bluff after a dramatically arduous migration over the "Hole-in-the-Rock" trail, which crosses the Mesa. Starting in the 1890s archaeologists and other scientists have sought evidence about when and how various cultures lived on Cedar Mesa. Both traditional and scientific knowledge about the area's past is essential for helping visitors understand the archaeological traces of past cultures that they see when they hike the area's canyons and mesa-tops. Much of this research is relevant to public understanding of the archaeology of the greater "Four Corners" area. The canyons receive by far the greatest share of visits to Cedar Mesa today. Monitoring the condition of the well-preserved but fragile canyon sites is a challenging management goal. The work proposed here has several public benefits. Enhanced access to the Turkey Pen midden materials will promote research that will yield new information about the earliest Ancestral Pueblo farmers; Such research can in turn help enrich public interpretation of the archaeology. Digitizing images taken decades ago of

archaeological sites in the Cedar Mesa canyons will make access to these images easier for future researchers. It will also help land managers monitor changes in site preservation and to spot types and locations of recent damage that need to be addressed by protective measures such as modifying access routes, requiring permits for access, or scheduling more frequent ranger visits.

QUALIFICATIONS, PAST PERFORMANCE, ACTIVE BLM COOPERATIVE AGREEMENT:

(List key personnel and their responsibilities. Describe similar successful projects completed in the past and any unique qualifications your organization may possess and describe all BLM Active Cooperative Agreements.)

Shannon Tushingham, Director of the WSU Museum of Anthropology, will oversee the project as part of her regular workload. Tushingham has a PhD in anthropological archaeology from UC Davis (2009) and is also an Assistant Professor in the Anthropology Department. She directs a laboratory at WSU that analyzes residues of food or other substances that are attached to archaeological artifacts. Among other recent publications, Tushingham is the co-editor of a 2016 book that relies on residue analysis to show how archaeologically discovered pipes were used to smoke tobacco and other plants in the prehistoric Americas.

Diane Curewitz, Archeological Collections Manager, has 10 years' experience in this role. She will manage the project. Curewitz has extensive experience in Southwestern archaeology, and earned a PhD from WSU in 2008. Her most recent publication (in the journal *Kiva* [2016], was co-authored with William Lipe and RG Matson) and was based in part on her analysis of pottery from Ancestral Pueblo sites on Cedar Mesa.

Professor Emeritus William Lipe was co-director of the Cedar Mesa Project and has published extensively on its results. In 2014, he edited a public-oriented issue of *Archaeology Southwest Magazine* devoted to Cedar Mesa, and his 2016 article in *American Antiquity* discusses evidence from the Turkey Pen Site that turkeys were domesticated in the SW as early as 1-200 AD. He will serve as the archaeological advisor for relabeling the Turkey Pen collections and documenting their past research uses. He will also advise on accurately identifying and documenting the canyon site slides. From 2003 to 2008, he was a member of the management plan advisory committee for BLM's Canyons of the Ancients National Monument in Colorado, and in 1995-1997, he was president of the Society for American Archaeology.

Washington State University is currently a partner in the Pacific Northwest CESU.

BUREAU OF LAND MANAGEMENT
Financial Assistance (Cooperative Agreements)



ATTACHMENT A: PROJECT PROPOSAL (SUGGESTED FORMAT)

Instructions: A Project Proposal must be submitted with the Standard Form (SF) 424 Application for Federal Assistance for all BLM Assistance Agreements. Complete each section below. Use additional sheets as needed.

Person Submitting Proposal: Lisbeth Louderback Date: 2/1/2017
Organization Name: Natural History Museum of Utah, University of Utah
Agreement or Announcement No.: L17AS00001
Agreement or Announcement Title: BLM FY2017 Bureau-wide National Conservation Lands
Scientific Studies Support Program
Estimated Period of Performance: May 1, 2017 to April 30, 2022
BLM POC: Allison Ginn
Proposed Project Location: Bears Ears National Monument
This work will occur on: Public Lands Both Public & Private Lands

Ecosystems and Plant Resources of Archaeological Sites in the Four Corners Region, USA

YOUR MISSION:

The management of public lands requires a broad and detailed understanding of valuable *archaeological and biological resources* that relies on science to inform and develop best practices. Research is also required to assess the significance of archaeological sites under the National Historic Preservation Act (NHPA) and such assessments profoundly influence how the archaeological site is ultimately managed. Site significance is partially determined by the potential of archaeological remains to answer important questions about the past (criterion D of a site's significance under the NHPA). However, a *comprehensive* approach would include documenting ecosystem characteristics and condition, including an inventory of associated ethnobotanical species, to inform BLM management of archaeological and biological resources in tandem, a somewhat novel hybrid of two realms of inquiry.

The archaeology of the Four Corners is a world renowned scientific endeavor. The sophistication of the Ancestral Puebloan culture, especially concerning their use of both native and early domesticated plants, tells us much about the ecology and technology of these early people. Well-known plant species such as maize, beans and squash were domesticated in Mesoamerica, transported to the Four Corners region and grown amongst the cliff dwellings and canyons like Mesa Verde, Chaco Canyon and Canyon de Chelly (Cordell and McBrinn 2012). But other lesser known species, such as the Four Corners potato (*Solanum jamesii*) (Figure 1), may have also been very important to the diet and possibly even domesticated locally (Kinder et al. 2017, Louderback and Pavlik, in review).



Figure 1. *Solanum jamesii* (left) and tubers from a single individual after one growing season.

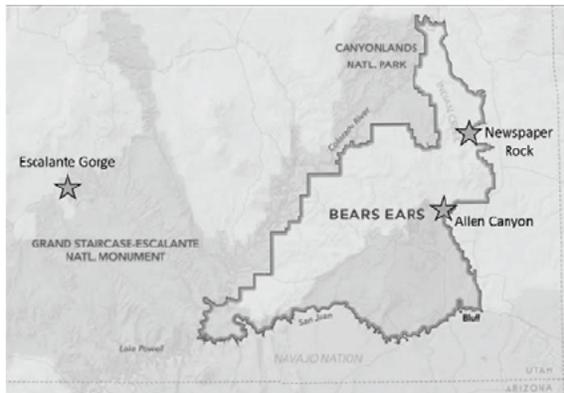


Figure 2. Map of Grand Staircase Escalante and Bears Ears National Monuments with locations of *S. jamesii* populations labeled. Map modified from Bears Ears Inter Tribal Coalition.

resources and 3) providing a detailed inventory and survey of ethnobotanically important species, including present condition, threats and management recommendations. The inventory will be entered into an existing ethnobotanical database (<https://nhmu.utah.edu/native-plants>) for the Colorado Plateau. This database, which was developed in partnership with the BLM (Applegate office in CA), will help inform resource

management decisions to sustain landscapes, preserve archaeological resources, and conserve traditionally used plants within lands managed by the BLM. The database will also promote research on past human diets, environmental changes, and regional ethnography.

To bring an understanding of National Conservation Land ecosystems for purposes of resource management, we are emphasizing the importance of a broad perspective of cultural resource management that includes the conservation of not only archaeological sites, but their surrounding ecosystems. We already know of archaeological sites in Bears Ears where improved management practices could ensure the vigor of *S. jamesii* populations. For example, plants at Newspaper Rock are senescing before flowering, probably due to competition with weedy, invasive plants. Conversely, in Allen Canyon, *S. jamesii* populations are doing reasonably well in the absence of high weed cover. Populations of *S. jamesii* growing next to archaeological sites and a well-used trail in the Escalante Gorge of the Grand Staircase Escalante National Monument (GSENM) need to be mapped and included in management planning to ensure persistence.



Figure 3. Left image is Newspaper Rock with associated *S. jamesii* population. Right image is granary in Allen Canyon with *S. jamesii* population. Compare the poor condition of the Newspaper Rock population to the healthy population growing in Allen Canyon.

OBJECTIVES:

The overall mission of this project is to provide an ecosystem assessment in relation to significant archaeological sites in National Conservation Lands in the Four Corners region. In the first two years, we will focus our efforts in the Bears Ears and Grand Staircase Escalante National Monuments, but ultimately we would like to expand our study to meet the science and research needs of other National Conservation Lands in the Four Corners region. We will accomplish our overall mission by completing tasks pertaining to three specific objectives:

- Objective 1: Describe the landscape and archaeological features (the setting)
- Objective 2: Quantify the adjacent, dominant vegetation (landscape palette)
- Objective 3: Inventory and survey ethnobotanically important species (dietary palette), including present condition threats and management recommendations.

These objectives support the *'Research Identified in Unit Science Plans'* and *'Standardized Inventory and Monitoring'* (Troves et al. 2011) research themes. After an archaeological setting is described and mapped, vegetation sampling techniques (e.g. Mueller-Dombois and Ellenberg 2003) will be used to describe the dominant vegetation. From those data, we can then inventory and survey ethnobotanical species and monitor for condition threats and provide management recommendations. This comprehensive approach also supports the *'Research Syntheses'* theme because we will inform BLM management of archeological and biological resources in tandem, a somewhat novel hybrid of two realms of inquiry. Our project also encourages *'Citizen Science'* programs to engage people of the Four Corners region, especially

Native Americans, encouraging traditional cultivation and inter-generational mentoring. The ethnobotanical database portion of our project will immediately engage existing stewards of the potato by recording their memories and cultivation techniques. If we find support, we could also propagate the potato and return them to the original stewards (the true owners) for local distribution. This would facilitate the participation of local schools and youth groups with an interest in such traditions, led by people who rightfully have a claim to fully exploit this wonderful resource.

Additionally, our project contributes to all four research themes stated in the BLM Utah National Conservation Lands Strategy (<https://www.blm.gov/sites/blm.gov/files/UtahNCLStrategyFinal.pdf>).

Theme 1. Ensure the Conservation, Protection, and Restoration of National Conservation Lands Values

We will provide a better understanding and appreciation for National Conservation Lands values by conducting ecosystem assessments, including vegetation surveys of archaeological settings and inventorying ethnobotanical species.

Theme 2. Collaboratively Managing the National Conservation Lands as Part of the Larger Landscape

Our ecosystem-based approach is to consider the context as equally important to the archaeological site. For this reason we will include documentation of landscape vegetation and ethnobotanical species.

Theme 3. Raise Awareness of the Value and Benefits of BLM's National Conservation Lands

Populations of *S. jamesii* in southeastern Utah are small and isolated and could be on their way to extirpation (Bamberg et al. 2003, 2016). Establishing the cultural significance and potential economic importance of *S. jamesii* could enable better conservation and restoration efforts through local stewardship.

Theme 4. Build upon BLM's Commitment to Conservation

We will collaborate with members of the Bears Ears Inter-Tribal Coalition and the Utah Diné Bikéyah (UDB) to record and document their stories and/or memories about plants they use and their families use. In collaboration with the Natural History Museum of Utah's Community Outreach department, we will develop programs or activities that would most benefit those communities.

RESEARCH THEME AND TECHNICAL APPROACH:

Please identify which themes apply to your projects:

- Research Identified in Unit Science Plans (for National Monuments, National Conservation Areas, and Similar Designations)***
- Effectiveness Research***
- Standardized Inventory and Monitoring***
- Research Syntheses***
- Citizen Science***
- Other Management-Driven Research***
- All themes and goals apply***

Techniques, processes, methodologies:

We will collaborate with knowledgeable tribe members and BLM to select a subset of culturally important sites starting in Bears Ears National Monument. In general, these sites will possess significant archeological features and be reasonably accessible for field study. We suggest a total of seven sites per year (three sites for pilot Year 1) would be visited twice, once in spring (May-June) and once in the fall (Aug-Sept) to capture plant species with different phenologies. The vegetation survey will generally be done in the spring visit.

Objective 1: Landscape and archaeology. The landscape setting of each selected site will be described with respect to geographic orientation, topography, general geology, hydrology, and other ecologically-relevant variables. A record of site conditions that records the types and degrees of disturbance from fire, humans and grazing animals. A standardized set of photographic survey points will be established with available GPS accuracy and a series of photographs taken for archival purposes. We will complete site forms for the archaeological sites, documenting and describing the different site types and providing a summary of the artifacts, (lithic scatter, ground stone tools, ceramics, etc.), features (hearths, pits, middens, etc.) and architectural features (granaries, dwellings, adobe walls, etc.). We will also provide site sketches with GPS reference points in relation to major features.

Objective 2: Quantify vegetation. Multiple vegetation sampling methods suited to the structural changes (number and height of canopy layers, life forms of dominant species) encountered at the sites will be applied. Herbaceous and shrub canopy layers will be sampled using quadrat and line-intercept methods, respectively (Mueller-Dombois and Ellenberg 2003). Another method, point-centered quarter, will be used in woodland and forest types that have an overstory canopy of trees (Mueller-Dombois and Ellenberg 2003). The taxonomic identity, relative abundance (e.g. density, cover) and presence of food resources on plant species occurring in these samples will be used to inventory the potential dietary palette. Representative stands of each vegetation type are recognized by their dominant species and will be identified and described. We will avoid atypical landscape features, such as narrow canyons and small-scale drainages, which might introduce azonal plant communities into the sample. Once located in a homogenous, representative stand, the plot center is established. The plot center marks the intersection of two 50 m transects (fiberglass tapes) oriented along north, south, west and east compass points. This process will be repeated twice in each vegetation type and will be assigned a site number and a GPS location to each plot center. It is most likely that all vegetation types in the study will be comprised of shrub-dominated and herbaceous-dominated canopy layers, therefore the line-intercept cover measurements will be uniformly applied to all sites. The higher elevation sites with tree-dominated overstories will be subject to the point-centered quarter sampling technique, in addition to the line-intercept method (Louderback 2014).

Objective 3: Inventory and survey ethnobotanical species. An inventory of ethnobotanically important species will be generated based on ethnographies from the Colorado Plateau and Great Basin regions (Couture, Ricks, and Housley 1986; Steward 1933; Kelly 1964; Fowler 1986; Chamberlain 1911). We will also interview Native Americans, pioneer descendants and local community members living in the Four Corners region to document historic and contemporary uses of specific plants. These data will be entered into an existing online database, "Ethnobotanical Guides for the Arid West", (<https://nhmu.utah.edu/native-plants>) (Figure 4). Developed in partnership with the BLM Applegate office, the database has a standardized format for the display of available ethnographic and botanical information on the plant species. It includes key characteristics for identification using minimally technical terms followed by photographs and information on habitat, season of growth, phenology and distribution. The database also includes cultural information, such as subsistence use (e.g. food, medicine, clothing, shelter, etc.), traditional significance, when and how the plant was gathered, and how it was processed. The online database also has data sheets for volunteers and citizen scientists to complete and can be uploaded to the website.

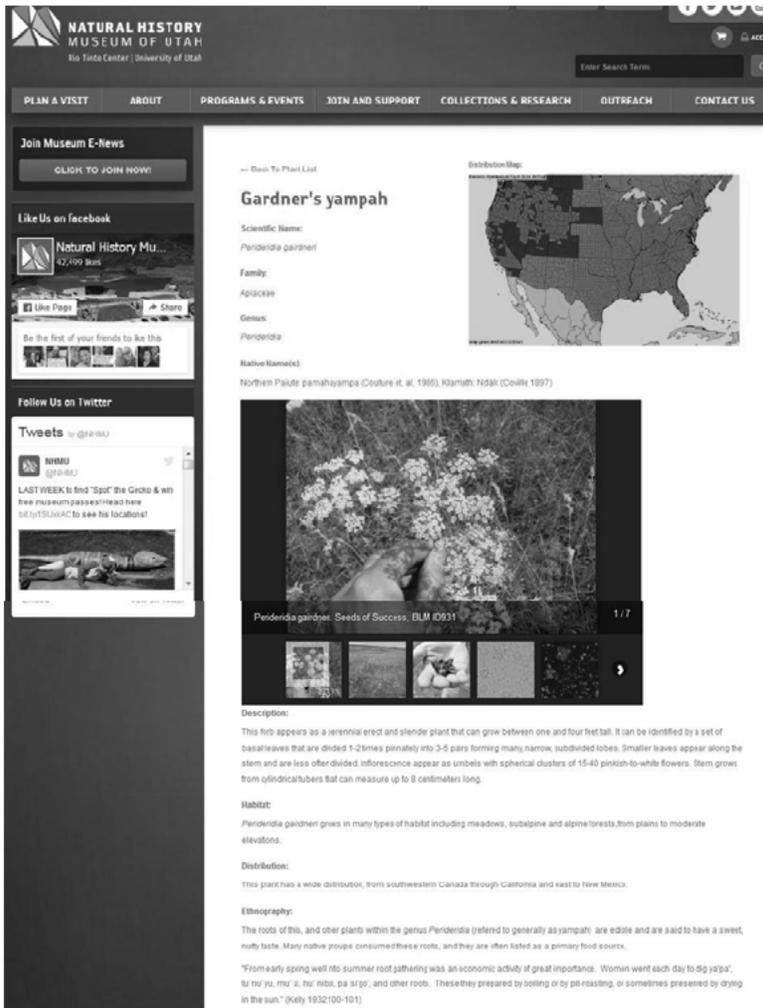


Figure 4. Screen shots of the opening page for the ‘Ethnobotanical Guides for the Arid West’ and the species page for *Perideridia* spp., published on the NHMU website. This ethnobotanical database was developed in partnership with the BLM Applegate Office (BLM CESU Assistance Agreement L15AC00099).

Proposed period of performance, primary goals and products:

We envision this as a five-year project, each year building upon the accumulated experiences, data and relationships. The size, diversity and complexity of National Conservation Lands in the Four Corners Region will require a multi-year, interdisciplinary and synthetic approach to develop effective management plans. Here we present an overview of those five years, with details provided for only Year 1.

Year 1: Consultation and Site Selection. We will meet with our BLM PO in May-June 2017 to suggest, discuss and select 3 archaeological sites in Bears Ears for the Year 1 pilot effort. The criteria for selection will include high tribal priority, BLM priority, size, complexity, access and perceived threats. If time allows, we will perform an early summer survey of those sites. The survey will begin the processes of data collection and methodological refinement to meet objectives 1, 2 and 3 (above). But our ***primary goal*** in this first year is to address the concerns and honor the knowledge of members of the Inter-tribal Coalition and UDB. It would also be wise at this point to discuss with the tribes what benefits they would like to see from this project. For example, they could recommend potato propagation, native plant exhibits, a teaching tool kit for local schools, learning gardens or other useful ways to ensure conservation and dissemination of results. **Products:** We will write a report to record progress in Year 1 and make preliminary management recommendations, especially for sites that are imminently threatened or have special archaeological and/or biological qualities.

Years 2 - 4: Consultation, Site Selection, and Objectives 1, 2, and 3. We imagine that years 2, 3 and 4 will require less initial planning than year 1. We will continue to meet with our BLM PO and coordinate with tribal members to prepare for the field seasons. But our ***primary, post-pilot goal*** will be to select 7 sites each year and accomplish objectives 1, 2, and 3 at each of those sites. Depending on research priorities of the BLM and tribal members, our study could be expanded to include other national monuments throughout the Four Corners region (e.g., GSENM, Vermillion Cliffs, Canyons of the Ancients). **Products:** Annual reports will be generated after each year and preliminary management recommendations will be incorporated.

Year 5: Synthesize and Interpret Data; Formulate Management Recommendations; Finalize Database; Accomplish Outreach and Public Benefits.

The synthesis of survey data will first take the form of distribution maps of archaeological sites and related plant resources. This will allow the analysis of patterns that could reveal ancient settlement, trade routes and plant cultivation. Vegetation data will be summarized in standard form, providing information on species composition, cover (dominance) and the abundance of plant resources. All ethnobotanically important species encountered will be entered into the database to include subsistence use, traditional significance, when and how the plant was gathered, and how it was processed. Preliminary management recommendations from Years 1 to 4 will be examined with a monument-wide perspective to prioritize sensitive areas and develop overall management strategies with the maximum possible efficiency. The relevance and practical application of these management strategies will be examined for other National Conservation Lands in the Four Corners region that have similar resource issues. And finally, we will work with the NHMU Community Outreach department to develop and implement a program and/or activity that would benefit all stakeholders.

Milestone / Task / Activity – Pilot Year 1 only	Start Date	Completion Date
Consultations and site selections	May 2017	June 2017
Surveys, data collection, method improvement (objectives 1, 2 and 3)	June 2017	October 2017
Data synthesis, preliminary management recommendations, report	November 2017	April 2018

OUTREACH AND PUBLIC BENEFIT:

The current paradigm for agricultural origins in the Four Corners is that people adopted exogenous domesticates (i.e., maize, beans and squash) instead of manipulating native plant populations. But we have strong evidence (Louderback and Pavlik, in review) that *Solanum jamesii*, a native potato to the Four Corners region, was not only used by people over 10,000 years ago, but that it might have been manipulated in ancient gardens.

Escalante Valley was named ‘Potato Valley’ by the first settlers (Woosley 1964) where *S. jamesii* was once ubiquitous and an important food source in historic times (Dunmire and Tierney 1995, Roundy 2000). Overgrazing in the early 20th Century dramatically altered the natural vegetation (Nelson 1952) and the species is now considered rare and imperiled in the region (Bamberg et al. 2003). In many parts of the Four Corners, the history and memory of this species are fading. From previous interviews in the field, we know it has been grown in gardens in Escalante, Canyon de Chelly and on Zuni reservations.

The proposed research will contribute a collaborative and multidisciplinary approach altering long-accepted paradigms regarding indigenous knowledge, agricultural origins and the domestication of wild plant species. And, at the local level, it will restore an ancient food crop to communities of the Four Corners region. Thus, the outcomes will not only alter our thinking about the origins of North American food crops, but also have broad, positive societal impacts.

QUALIFICATIONS, PAST PERFORMANCE, ACTIVE BLM COOPERATIVE AGREEMENT:**Key Personnel:**

Dr. Lisbeth Louderback is Curator of Archaeology at the Natural History Museum of Utah and Assistant Professor in Anthropology Department at the University of Utah. Lisbeth has extensive experience in ethnographic and archaeological plant use, including the analysis of macro- and microbotanical remains (Rhode and Louderback 2007; Louderback 2014; Louderback et al. 2013; Louderback et al. 2015). She has developed a comprehensive ethnobotanical reference collection for the arid West and also studies paleoenvironmental change in the Great Basin and Colorado Plateau (e.g., Louderback and Rhode 2009). Her background is in archaeology, archaeobotany, paleoecology and vegetation ecology. She has done wide-ranging fieldwork in the Great Basin and Colorado Plateau. **Responsibilities:** Lisbeth will oversee the project; she will conduct vegetation surveys with Bruce Pavlik and ethnobotanical inventories with Nicole Herzog.

Dr. Bruce Pavlik is Director of Conservation at the Red Butte Gardens, University of Utah. Bruce’s research has focused on the ecology and physiology of plants native to western North America, including the conservation of endangered species. Ecological restoration has become central to his research program and recent projects have emphasized the design and active management of populations and communities using field-based, experimental approaches. He has authored or co-authored more than 60 scientific and popular publications in plant conservation, inventory, and ethnobotany (e.g. Pavlik 2008; Wilken et al. 1994). His research interests include the biology of founding populations, the role of adaptive management for resources *in-situ* and the development of restoration protocols for complex, species-rich ecosystems. **Responsibilities:** Bruce will conduct vegetation surveys and ethnobotanical inventories in the field. He will also aid in plant collection and identification, and provide botanical expertise.

Dr. Brian Coddig is Associate Professor of Anthropology at University of Utah. Brian’s research focuses on the ecology of foraging economies, examining the ways in which populations interact dynamically with

their natural and social environments. His research interests include human ecology, behavioral ecology, hunter-gatherers, ethnoecology, ethnoarchaeology, anthropogenic impacts, data analysis, and spatial analysis and he has authored or co-authored over 40 publications. He is currently working on a project with the Navajo Dine on firewood use. His input, therefore, will be valuable when we collaborate with the tribal members. **Responsibilities:** Brian will be responsible for describing, documenting and mapping the landscape and archaeological settings. He will work with a graduate student to generate the maps for the annual reports.

Dr. Nicole Herzog is a Post-Doctoral Research Fellow at the Natural History Museum of Utah and in the Anthropology Department at University of Utah. Nicole is an experienced archaeologist in the arid West. She has worked as an archaeological consultant and as an independent researcher for over 10 years. In collaboration with Dr. James O'Connell, she conducted archaeobotanical research in Surprise Valley CA, which culminated in an ethnobotanical reference collection and an important publication on plant use in the Great Basin (Herzog 2014). Her background is in human behavioral ecology, dietary reconstruction, and paleoethnobotany and has broad field experience in the Great Basin and the Colorado Plateau. **Responsibilities:** Nicole will be in charge of uploading all information onto the ethnobotanical database, photographing plants and plant parts and working with Garrett Herbarium to voucher specimens.

Past performance:

1. In 2015 we were awarded an Assistance Agreement (BLM CA CESU Archaeological and Archaeobotanical Research Partnership L15AC00099). Through this award we established the framework for an online regional ethnobotanical database. We completed the project in January 2016 (screenshots see: Figure 4). The webpages include a publically available database which can be viewed at <https://nhmu.utah.edu/native-plants>. The database currently contains ethnobotanical data on seven species in the northwest Great Basin. As part of the Assistance Agreement, we also created an internal framework from which to continue to add ethnobotanical information to the database. The funds requested for this project will expand the database to include plants from the Colorado Plateau.
2. We recently completed archaeobotanical analyses for a large-scale CRM project documenting the macro- and microbotanical components of human diets for nine excavated sites throughout central and southern Utah (Louderback et al. 2016). We found evidence of maize, several common grasses and geophytes, and evidence suggesting consumption of a rare tuber (Four Corners potato) likely transported from southwestern Utah. Results will be published in a regional journal (Herzog et al. in prep).
3. Louderback and members of the Archaeobotany lab recently completed a high-quality macrobotanical reference collection at NHMU. This collection contains over 350 plant specimens from the Great Basin, Mojave Desert, and Colorado Plateau. These are cataloged and described, and are currently used as teaching collections for the University of Utah's Paleoethnobotany courses. They also serve as references for NHMU archaeologists, and will be used to establish a similar collection containing archaeological botanical specimens (in progress).

BLM Cooperative Agreements:

University of Utah is partners with the following Cooperative Agreements:

- Colorado Plateau CESU (http://www.cesu.psu.edu/unit_portals/COPL_portal.htm)
- Great Basin CESU (http://www.cesu.psu.edu/unit_portals/GRBA_portal.htm)
- Desert Southwest CESU (http://www.cesu.psu.edu/unit_portals/DESO_portal.htm)

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Manifest for Grant Application # GRANT12321940

Grant Application XML file (total 1):

1. GrantApplication.xml. (size 17171 bytes)

Forms Included in Zip File(total 7):

1. Form GG_LobbyingForm-V1.1.pdf (size 23347 bytes)
2. Form ProjectNarrativeAttachments_1_2-V1.2.pdf (size 21576 bytes)
3. Form SF424_2_1-V2.1.pdf (size 30556 bytes)
4. Form BudgetNarrativeAttachments_1_2-V1.2.pdf (size 22792 bytes)
5. Form SF424A-V1.0.pdf (size 28889 bytes)
6. Form Key_Contacts-V1.0.pdf (size 25083 bytes)
7. Form SF424B-V1.1.pdf (size 28363 bytes)

Attachments Included in Zip File (total 2):

1. ProjectNarrativeAttachments_1_2
ProjectNarrativeAttachments_1_2-Attachments-NLCS_2017_NHMU_Project_Proposal1020317601.pdf
application/octet-stream (size 169777 bytes)
2. BudgetNarrativeAttachments_1_2
BudgetNarrativeAttachments_1_2-Attachments-NLCS_2017_Budget_Detail_Form1020317600.pdf
application/octet-stream (size 141869 bytes)

BUREAU OF LAND MANAGEMENT
 Financial Assistance (Cooperative Agreements)



ATTACHEMENT B: BUDGET DETAIL (SUGGESTED FORMAT)

Instructions: Using the estimated amounts listed on your SF 424A Budget Information form, use this worksheet to provide details of those estimated costs. In the Narrative Boxes, explain the purpose of each cost and provide sufficient detail so costs may be analyzed for reasonableness.

Agreement or Funding Opportunity No.: L17AS00001 Date: 1/23/2017
 Organization Name: Southern Utah University
 Project Title: A Survey of Aquatic Invertebrates of Spring Systems in Bears Ears National Monument, Utah

A) PERSONNEL COSTS (SF-424A Object Class Category 6a.)					Personnel Justification
Estimated costs of salaries/wages, <u>not</u> including fringe benefits, paid to Recipient employees working directly on this agreement. Indicate Key Personnel with an asterisk (*), provide more detail in the Narrative Box if needed.					
Name & Title or Position Title	Salary or Wage	Months or Hours	Matching Funds (if applicable)	BLM Funds	
James Pollard, PI	\$50	100 hrs		\$5,000	Mr. Pollard will design, supervise and report on all research activities
Frederic Govedich, PhD, Co I	\$68,530/yr	40 hrs		\$1,713	Dr. Govedich will collaborate with Mr. Pollard and coordinate students and lab spaces
Jacqueline Grant, PhD, Co I	\$54,697/yr	36 hrs		\$1,230	Dr. Grant will serve as advisor for student researcher
Student Hours	10.2/hr	840 hrs		\$8,568	Student workers will be hired for field work and laboratory analysis
<i>Example: James Smith, Executive Director</i>	<i>\$20,000.00/Mo.</i>	<i>3 Mos.</i>	<i>\$15,000.00</i>	<i>\$45,000.00</i>	
A) TOTAL PERSONNEL COSTS: (SF 424A Object Class Category 6a. Personnel)			\$	\$16,511	
<u>Budget justification of costs:</u> Mr. Pollard will perform a paper survey and reconnaissance of locally accessible spring systems and summarize what is known about them. This will be initial data on general invertebrate populations in the springs and identify the effects of local grazing. One trip with co investigator and student(s) will be taken to gather further information on site. Mr. Pollard will plan, oversee and report on the project. Dr. Govedich is an invertebrate specialist and will oversee the students in their laboratory research. Dr. Grant is a resource area specialist and will advise students in their research concerns.					

B) FRINGE BENEFIT COSTS (SF-424A Object Class Category 6b.)				
Estimated costs of fringe benefits (e.g. health insurance, vacation, FICA, etc.) paid to Recipient employees working on this agreement. List employees/positions below, and their fringe benefit rates as a percentage (%) of their salaries. List what are considered fringe benefits in the Narrative Box.				
Name & Title/Position	Salary/Wage Base (BLM Amounts budgeted in Section A above)	Fringe Benefit Rate (%)	Matching Funds (if applicable)	BLM Funds
Mr. Pollard, PI	\$5,000	10.5%		\$525
Frederic Govedich, PhD, Co I	\$2,981	22.5%		\$385
Jacqueline Grant, PhD, Co I	1230	22.5%		\$276
Student(s)	\$8,568	10.5%		\$900
<i>Example: James Smith, Executive Director</i>	\$20,000.00	30%	\$0.00	\$6,000.00
B) TOTAL FRINGE BENEFIT COSTS: (SF 424A Object Class Category 6b. Fringe Benefits)			\$	\$2,086
<i>Budget Justification of Costs:</i> Mr. Pollard and the student(s) benefit rate is 10.5% of wages. These benefits cover Workmans' Compensation, FICA, Social Security and taxes. Dr. Govedich's and Dr. Grants rates are 22.5% and include the same benefits as well as retirement benefits.				

C) TRAVEL COSTS (SF-424A Object Class Category 6c.)						
SUB TOTAL, LODGING & PER DIEM The cost of lodging & meals while traveling for agreement activities. Give details and purpose of the travel in the Narrative Box. Current Federal rates may be found online at: http://www.gsa.gov/portal/category/21287 .						
Proposed Travel (Lodging & Per Diem)		No. of People	No. of Days	Cost Per Person Per Day	Matching Funds (if applicable)	BLM Funds
To:	Bears Ears National Monument, UT	3	4	41		\$492
From:	Cedar City, UT (Per diem)					
To:	Bears Ears National Monument, UT	3	3	65		\$585
From:	Cedar City, UT (lodging)					
To:						
From:						
To:	<i>Example: Portland, OR</i>	1	2	\$150.00/ Day	\$100.00	\$200.00
From:	<i>Eugene, OR</i>					
SUB TOTAL, MILEAGE REIMBURSEMENT The cost of reimbursement for estimated mileage traveled in recipient vehicles for agreement activities. Give details and the purpose of the travel in the Narrative Box. Current Federal mileage reimbursement rates may be found online at: www.GSA.gov . NOTE: Mileage reimbursement rates include all vehicle costs, i.e. fuel, insurance, maintenance, etc.						
Proposed Travel (Mileage Reimbursement)		No. of Miles	No. of Trips	Cost Per Mile	Matching Funds (if applicable)	BLM Funds
To:	Bears Ears National Monument, UT	900	1	.40		\$360
From:	Cedar City, UT					
To:						
From:						
To:						
From:						
To:	<i>Example: Portland, OR</i>	110 Miles	2	\$.10/ Mile	\$0.00	\$22.00
From:	<i>Eugene, OR</i>					
SUB TOTAL, OTHER TRAVEL COSTS The costs of airfare, bus fare, car rental, etc., required for agreement activities. Explain the details and the purpose of the costs in the Narrative Box.						
Proposed Other (Travel Reimbursement)		Type	Cost	No.	Matching Funds (if applicable)	BLM Funds
To:	Bears Ears National Monument, UT	SUV	\$40	4		\$160
From:	Cedar City, UT					
To:						
From:						
To:						
From:						
C) TOTAL TRAVEL COSTS: (SF 424A Object Class Category 6c. Travel)					\$	\$1,597
<i>Budget justification of costs:</i> Travel costs are for one trip for three people to Bears Ears National Monument from Cedar City, UT. Travel is estimated at 4 days/3 nights. Per Diem is set by the University and is \$41 per day for three people for four days, (\$492). Hotel costs are expected to be \$65 per night for three nights for three people, (\$585). Travel will be done in a university motor pool SUV which is leased at a rate of \$40 a day and .40 per mile and is estimated at 900 miles over the four days (\$360+\$160=\$520)						

D) EQUIPMENT COSTS (SF-424A Object Class Category 6d. Equipment)				
The cost of equipment purchased for use on this agreement. Equipment is defined as items with a useful life of more than one (1) year and a cost of \$5,000+ per unit. If your organization has a written policy for purchasing equipment, please submit a copy with your application. Explain the need and purpose of the equipment in the Narrative Box below.				
Equipment	Quantity	Cost per Unit	Matching Funds (if applicable)	BLM Funds
<i>Example: John Deere Compact Tractor</i>	1	\$17,500.00	\$7,500.00	\$10,000.00
D) TOTAL EQUIPMENT COSTS: (SF 424A Object Class Category 6d. Equipment)			\$	\$
<i>Budget justification of costs:</i> No equipment will be purchased for this program.				

E) SUPPLY COSTS (SF-424A Object Class Category 6e. Supplies)				
Estimated costs of materials and supplies used directly on this agreement, e.g. safety glasses, work gloves, office supplies, etc. If your organization has a written policy for purchasing supplies, please submit a copy with your application. Explain the purpose of the costs in the Narrative Box below.				
Item	Quantity	Cost per Unit	Matching Funds (if applicable)	BLM Funds
Ethanol	7 gal	72		\$504
Glass Vile Set	6	30		\$180
Forceps set	3	23		\$69
Nets	13	9		\$117
Buckets 10 set	2	60		\$120
Nitrile gloves	2	30		\$60
GPS unit	1	500		\$500
<i>Example: Work Gloves, Leather</i>	6	\$10.00/Pair	\$50.00	\$10.00
E) SUPPLY COST TOTAL: (SF 424A Object Class Category 6e. Supplies)			\$	\$1,550
<i>Budget justification of costs:</i> Items listed are necessary for on site research and specimen collection and for lab research for one year. GPS unit will be used to pinpoint the location of each collection site to cross reference to specimens.				

F) CONTRACTUAL COSTS (SF-424A Object Class Category 6f. Contractual)			
Estimated costs of contracted/sub contracted services and sub grant/recipient awards. If your organization has a written contracting policy, please submit a copy with your application. Provide contractor names, if available, and explain the details and purposes of the costs in the Narrative Box below. NOTE: Calculation of your Indirect Costs may be affected by contracted and/or pass through expenses. See Section J) INDIRECT COSTS, for more information.			
Contractor Name, Type, etc.	Cost	Matching Funds (if applicable)	BLM Funds
<i>Example: Ace Delivery Service (Yearly Contract)</i>	\$2,500.00	\$0.00	\$2,500.00
F) CONTRACTUAL COST TOTAL: (SF 424A Object Class Category 6f. Contractual)		\$	\$
<i>Budget justification of costs:</i> No contractual costs are expected.			

G) CONSTRUCTION COSTS (SF-424A Object Class Category 6g. Construction)			
The estimated costs of construction. "Construction" is the intent to construct, alter, or repair (including dredging, excavating, and painting) buildings, structures, or other real property FAR Part 2 Definitions. Explain the details and purpose of the costs in the Narrative Box below.			
Contractor: Name/Type/Organization/Etc.	Cost	Matching Funds (if applicable)	BLM Funds
G) CONSTRUCTION COST TOTAL: (SF 424A Object Class Category 6g. Construction)		\$	\$
<i>Budget justification of costs:</i> No construction costs are expected.			

H) OTHER COSTS (SF-424A Object Class Category 6h. Other)			
Estimated costs which don't fit any other Object Class Category, e.g. duplicating and printing costs, postage and freight, rental of equipment, etc. Explain the details and purpose of the costs in the Narrative Box below.			
Item	Cost	Matching Funds (if applicable)	BLM Funds
<i>Example: Ace Equipment Rental (Post-Hole Digger, 4 Days)</i>	\$25/Day	\$0.00	\$100.00
H) OTHER COSTS TOTAL: (SF 424A Object Class Category 6h. Other)		\$	\$
<i>Budget justification of costs:</i> No other costs are expected.			

I) TOTAL DIRECT COSTS (SF-424A Object Class Category 6i. Sum of 6a.-6h.)		
The total of all direct costs applicable to this project.		
Total Direct Costs	Matching Funds (if applicable)	BLM Funds
I) TOTAL DIRECT COSTS: (SF 424A Object Class Category 6i. Total, Sum of 6a. 6h.)	\$	\$21,744

<p>J) INDIRECT COSTS (SF-424A Object Class Category 6j. Indirect Charges)</p> <p>Indirect costs are expenses which cannot be readily identified and charged to a particular project or agreement, e.g. building rent, utilities, office supplies, etc. Such costs are charged to the project as a percentage of the Direct Costs (items A through H above) and this percentage is called the Indirect Cost Rate. If your organization has a Negotiated Indirect Cost Rate Agreement (NICRA) please submit a copy of the agreement with your application. If your organization has no NICRA, the BLM may allow a "de minimis" indirect cost rate of up to 10% of your Modified Total Direct Costs (MTDC), which are your Direct Costs excluding sub grant and sub contract costs in excess of \$25,000. See 2 CFR 200.68 Modified Total Direct Cost (MTDC) and 2 CFR 200.414(f) Indirect (F&A) Costs for more information.</p> <p>If your organization is a Cooperative Ecosystems Studies Unit (CESU) partner, your indirect cost rate will be 17.5% of your NICRA determined indirect cost base.</p> <p>Use the Narrative Box below to explain how you calculated your indirect cost base and resulting indirect costs.</p>		
Indirect Cost Rate to be used on this Grant (%):	45%	
Indirect Cost Base for this Grant:	\$18,598	
Total Indirect Costs	Matching Funds (if applicable)	BLM Funds
J) TOTAL INDIRECT COSTS: (SF 424A Object Class Category 6j. Indirect Charges)	\$	\$3,255
<p><i>Budget justification of costs:</i> Indirect costs are calculated on SUU's current Federally negotiated rate of 45% of salaries, wages and benefits, (\$18644).</p>		

<p>K) TOTALS (SF-424A Object Class Category 6k. TOTALS)</p> <p>The sum total of all Direct and Indirect Costs (Sum of 6i. & 6j.) applicable to this agreement.</p>		
Total Project Costs	Matching Funds (if applicable)	BLM Funds
K) TOTAL COSTS: (SF 424A Object Class Category 6k. TOTALS)	\$	\$25,000

I certify that to the best of my knowledge the costs detailed above are correct and complete and for the purposes set forth in the associated application for Federal Assistance.

Karen Wilson, Pre Award Administrator

 Name & Title of Person Completing Budget

TITLE: INVENTORY AND SALVAGE OF PRE-DINOSAUR FOSSIL VERTEBRATES IN THE CARBONIFEROUS-PERMIAN CUTLER GROUP, VALLEY OF THE GODS AND JOHN’S CANYON, SE UTAH

SUMMARY: As a component of the NLCS, the BLM administered lands and former wilderness study areas encompassed by the newly formed Bears Ears National Monument are a priority for scientific investigation that will inform future conservation, protection, and restoration decisions. This work represents the first collaborative survey and inventory the oldest Paleozoic vertebrate fossils of the Bears Ears National Monument, and emphasizes their scientific application in understanding the age, biochronology, and large-scale climate changes recorded in southern Utah’s Cutler Group rocks.

KEYWORDS: paleontology; fossils; Paleozoic; resource management; education

RESEARCH THEMES: **(1B)** *Expand Understanding of the NLCS Values through Assessment, Inventory, and Monitoring;* **(1C)** *Provide a Scientific Foundation for Decision-Making*

NLCS LANDS: Valley of the Gods and John’s Canyon (now Bears Ears National Monument)

INTRODUCTION

The late Paleozoic rocks of southern Utah are central to our understanding of an extensive shift in climate that was unparalleled in geologic history (Montañez et al., 2007, 2016). A long-term shift from cool but wet “coal swamp” environments of the Carboniferous to more monsoonal conditions across the Pangean supercontinent stoked conditions that would lead to the formation of vast desert biomes that would characterize the western portion of the continent for millions of years. This marked Earth’s last major pre-Quaternary icehouse-hothouse transition, and was associated with several higher-order, glacioeustasy-driven sea level fluctuations during the Carboniferous-Permian (C-P) transition ~307-283.5 million years ago. Its impacts on animal communities would have likely been severe given that tropical ectotherms in warm, open habitats lack behavioral specializations to avoid heat and water stress, and are most vulnerable to even ‘small magnitude’ climate warming (Huttenlocker et al., 2005, 2008; DiMichele et al., 2006, 2009, 2014; Pardo et al., 2008; Tabor et al., 2008; Deutsch et al., 2008; Huey and Tewksbury, 2009; Sahney et al., 2010). Consequently, there is a need to understand how vertebrate diversity varies in space and time during such large-scale climatic shifts. Unfortunately, a fuller understanding of C-P vertebrate diversity is hamstrung by uneven sampling across North America, with many of the best-known sites occurring in the Permian redbeds of north Texas and Oklahoma. Given its excellent fossil preservation and extensive exposures of marine and continental rocks spanning the C-P transition, the Canyon Country of southeastern Utah in the vicinity of Valley of the Gods is the best location to study these trending research questions. Of equal importance, this study system also provides the BLM with a timely opportunity to re-identify and inventory its exceptional Paleozoic vertebrate fossil sites in a way that can inform future management decisions and education programs.

The record of terrestrial vertebrates in the Cutler Group of Utah is key to understanding C-P regional faunal turnover and provincialism because of (1) its unique physiography buffered by the Ancestral Rocky Mountains and Uncompahgre highlands and (2) its partial marine influence that allows the tetrapod assemblages to be tied to a well-constrained biostratigraphic framework based on marine index fossils (Fig. 1). Previous collecting low in the C-P Halgaito Formation (Cutler Group) in Valley of the Gods (VOG) revealed an assemblage of aquatic fishes, temnospondyl amphibians, and terrestrial reptiles and synapsids (early relatives of mammals), and included some species that are distinctly different from those found in the geologically younger Organ Rock Formation and undifferentiated Cutler farther to the north (Vaughn, 1962, 1964, 1966a,b), suggesting these different

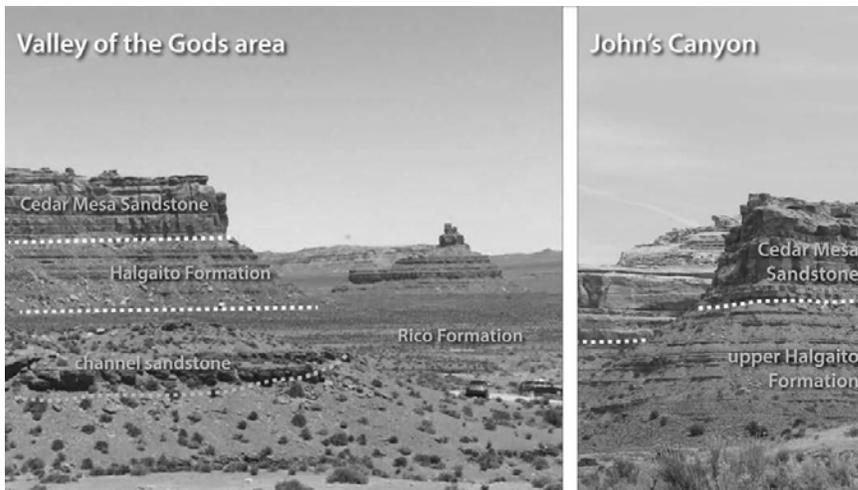


Figure 1. Transitional beds of the Carboniferous Rico Formation (*left*) give way to the continental rocks of the C P Halgaito Formation in Valley of the Gods, which preserves a diverse tetrapod fossil assemblage. Only the upper portion of the Halgaito Formation is exposed in John's Canyon (*right*), a site that has also produced some tetrapod localities. These formations are protected by tall mesas capped by the Permian Cedar Mesa Sandstone.

lithologic units contain their own unique tetrapod assemblages (Sumida et al., 1999b,c). These areas have also produced a variety of plants that indicate a monsoonal climate with occasional wetlands and streams sourced by the Uncompahgre highlands (DiMichele et al., 2014). Unfortunately, many of the fossils have not been placed within a proper stratigraphic context, limiting interpretation of their precise temporal succession, and unambiguous C-P index taxa have yet to be identified (e.g., see Scott, 2013). Vertebrate localities occur throughout the vertical succession of the lower Cutler beds in VOG and at least up to 75 meters above its base in nearby John's Canyon, an area that is higher in sequence and vastly underexplored. Preliminary biostratigraphy conducted by us in 2016 also produced the first marine 'conodonts' (microfossils used to determine ages of Paleozoic marine rock formations) from the lower Cutler beds, in addition to several new vertebrate localities that include small amphibian and synapsid bones. However, this work has only covered a small portion of outcrops between VOG and John's Canyon, and requires a review of problematic records of taxa previously regarded as strictly Permian elsewhere (e.g., *Seymouria*; Vaughn, 1966b; Sumida et al., 1999b). Because early workers did not record detailed stratigraphic data, renewed fieldwork in VOG and, especially, John's Canyon will place better confidence in these occurrences, facilitate new prospecting, collecting, and will fit this unique system into a broader continental framework.

In addition to using the study area to test hypotheses of faunal turnover and provincialism during the C-P transition, our surveys of the areas between VOG and John's Canyon would have important conservation impacts. The backcountry of VOG is a BLM managed area that has recently been designated part of the new Bears Ears National Monument. Sensitivity in the nearby Comb Ridge area has facilitated collaborations between the BLM and paleontologists to locate and document paleontologically significant sites. Moreover, given our team's long history of collecting Paleozoic vertebrates in Utah (1960s to present) and the PI's association with the Carnegie Museum of Natural History which houses the world's largest collection of Paleozoic vertebrates from Utah, our research group is solely positioned to provide the BLM with a comprehensive and systematic review of these precious sites.

RESEARCH OBJECTIVES

During summer of 2017, our team proposes to conduct a multidisciplinary paleontological study of the lower Cutler beds with emphasis on the vertebrates of the upper Halgaito Formation of the John's Canyon area. This work includes surveying outcrops from VOG to John's Canyon for vertebrate

fossils, recording detailed stratigraphic logs, and collecting marine carbonate samples to find conodont index taxa important for biostratigraphy. Our specific objectives are as follows:

- *Objective 1: Survey, excavate, and describe significant vertebrate-bearing sites*
- *Objective 2: Measure sections at fossil-bearing sites between VOG and John's Canyon*
- *Objective 3: Improve marine conodont biostratigraphy by sampling marine marker beds*

RESEARCH METHODS

Objective 1: Survey, excavate, and describe significant vertebrate localities.

Vertebrate fossils in VOG occur in isolated localities throughout the vertical succession of the lower Cutler beds, often associated with sandstone bodies, but sometimes occurring as bone beds. Earlier work in the vicinity of Mexican Hat produced: xenacanth sharks; palaeonisciforms; crossopterygians; the temnospondyl amphibians *Eryops*, *Platyhystrix*, and an unidentified dissorophoid; a neotridian; the anamniotes *Diadectes* and a limnoscelid; and the synspsids *Ophiacodon* and *Sphenacodon* (Vaughn, 1962). Additional records by our team have increased the abundances of some of these taxa (Sumida et al., 1999a,b,c, 2005; Scott, 2013) and produced new records such as the westernmost occurrence of the lungfish *Sagenodus* and a multispecies bone bed, the 'Birthday Bone Bed' (Fig. 2) which includes several articulated skeletons along with the synspsid *Edaphosaurus* and a new araucoscelidan reptile. Less emphasis has been placed on John's Canyon, which is higher in section and includes notable records such as the xenacanth *Orthacanthus texensis*, the crossopterygian fish *Lohsania*, and a possible record of the Permian anamniote *Seymouria*.

Collectively, this material was discovered in multiple horizons of the Halgaito Formation from Mexican Hat to VOG, and in John's Canyon, but substantial outcrops exposed along the southwestern cliffs of Cedar Mesa between these localities has great potential to produce more records that could be integrated and correlated between both collecting areas. Moreover, the

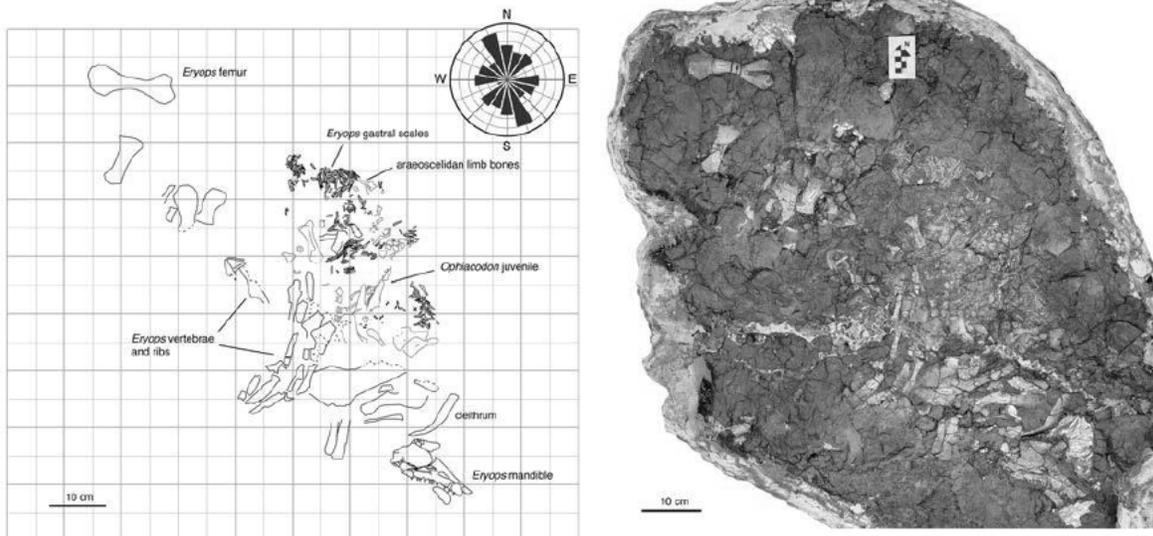


Figure 2. Mixed assemblage of vertebrate fossils from the 'Birthday Bone Bed,' C-P Halgaito Formation, lower Cutler Group. Quarry map (*left*); photograph of field jacket containing scattered skeletons (*right*).

similarities of some taxa to those of the younger Organ Rock Formation (which overlies the Cedar Mesa Sandstone) suggests that the first occurrences of some classic Permian taxa such as *Seymouria* may be found within the upper Halgaito. Support from the BLM to collect in these areas is vital to growing a fossil dataset with a large enough sample size to make comparisons to other younger Permian formations in Utah and to understand how faunal turnover compared to other regions (e.g., Texas-Oklahoma). This inventory will be databased electronically and made available to the BLM with detailed maps and KMZ files locating each site.

Objective 2: Measure sections at fossil-bearing sites between VOG and John's Canyon

Early collections made by Peter Vaughn in the 1960s firmly established the significance of fossil resources in the Halgaito Formation of southern Utah, but precious stratigraphic data were not recorded for these fossils. We are working to place these fossils in their proper stratigraphic context in order to understand more precisely the succession of key fossil taxa (e.g., *Orthacanthus*, *Seymouria*). In addition to surveying the outcrops between VOG and John's Canyon for new fossil vertebrate localities, we plan to measure a series of stratigraphic sections along an east-west transect through the southern margin of Cedar Mesa, and correlate the lithostratigraphy of each collecting area. This will provide a lithostratigraphic context against which we will map each individual vertebrate record in its precise vertical position. This will be the first such study of vertebrate biostratigraphy in the C-P rocks of southern Utah, and will set a standard for future fossil collections in Cutler Group rocks. Ultimately, it will be possible to subdivide the fossil vertebrate assemblages in the lower and upper portions of the Cutler Group in Utah and the broader Four Corners region.

Objective 3: Improve marine conodont biostratigraphy by sampling marine marker beds

Controversy over the position of the C-P boundary in VOG has created confusion over the precise age of its fauna and flora. For example, the vertebrate assemblage of the Halgaito has variably been assigned to Permian (Vaughn, 1962), Carboniferous (Sumida, 1999a,b,c), or Carboniferous-Permian (Scott, 2013). Our preliminary work on the microfossils from the marine marker beds (in prep for publication) has now produced conodont fragments of the Carboniferous-through-Triassic *Hindeodus* sp. (9 jaw elements), as well as Carboniferous index taxa *Ellisonia conflexa* (12 elements) and *Adetognathus* sp. (four elements). The latter two species, found in two limestone marker beds above and below the Birthday Bone Bed at the base of the Halgaito Formation, are not younger than late Carboniferous, and the absence of the basal Permian conodont *Streptognathodus isolatus* is so far consistent with that age assignment. This strongly suggests that the Birthday Bone Bed assemblage at the base of the Halgaito Formation is late Carboniferous, but does not preclude the possibility that stratigraphically higher records (particularly those in John's Canyon) could be Permian. We plan to work with conodont expert Charles Henderson (University of Calgary) to identify conodonts and other significant microfossils from the marine marker beds, placing them in a global chronostratigraphic framework for the first time. Because marine conodonts are otherwise poorly known from the Cutler Group of Utah and elsewhere in the southwest, our work will be the first to tie the vertebrate assemblages to a well-constrained marine chronostratigraphic framework that has been established for the C-P transition of the US midcontinent (Kansas, Nebraska). This is significant because the C-P cyclothems of the midcontinent represent the primary North American datum for the C-P boundary, having been correlated to C-P global stratotype in Europe. The opportunity to tie the Cutler Group of Utah into a more global framework will strengthen the role Utah plays in understanding paleoecology and faunal turnover during this time.

BENEFITS

Another goal of our work is to inform the public and other scientists that the understudied Paleozoic icehouse presents an unparalleled opportunity to understand the impacts of Quaternary climate change on vertebrate ecology and physiology. Given its role as an analog to modern climate change, the charismatic nature of its pre-dinosaur fauna, and the stunning backdrop of southern Utah's vermilion canyons and mesas, we anticipate broad interest across the state, country, and even internationally, and hope to promote our work through a variety of public speaking opportunities. The co-investigator has a history of NSF Noyce Teacher Scholarship support for STEM education and California Department of Education grants for science and literacy, among others. We plan outreach in both Utah and California via engagement with the Utah Friends of Paleontology (UFOP) and classroom visitations at our local Bravo Medical Magnet High School in Los Angeles. The latter outreach in California high schools will feature this work as a means of encouraging high school students to get involved in lab activities within the PI's department (which has a growing 'paleosciences' program) and grow awareness of the fossil resources of the new Bears Ears National Monument beyond Utah. We also plan to present results of fieldwork at local professional and amateur societies, including UFOP and Southern California Paleontological Society meetings. Moreover, the Natural History Museum of Los Angeles County hosts several behind-the-scenes events, such as its annual 'Dino Fest,' providing the opportunity for the PI to interact directly with thousands of museum visitors in a two-day weekend event that occurs each year. The PI's affiliations with two museums, one on each coast, present opportunities for outreach across the United States.

DETAILED TIMELINE

The project would start in summer of 2017 with arrival to previously identified fossil sites in the Halgaito Formation of VOG. This will begin near Castle Butte in VOG in early July 2017, representing the start of our east-west transect from the Rico-Halgaito transition through the upper Halgaito Formation. At each site, fossils identified will be collected and a stratigraphic log created to place the new and previous fossil collections into their proper stratigraphic context. While creating our measured sections, we will also sample prominent marine limestones and minor incursions that produce biostratigraphically informative microfossils. During this first week, we will continue our transect from Castle Butte to the Birthday Bone Bed, Cedar Point, and John's Canyon sites, recording fossil occurrences, collections, and stratigraphic logs to be correlated. Our crew will continue to prospect for new sites throughout the week. By week two, we will primarily be logging sections and prospecting for fossils in John's Canyon, an underexplored area where we plan to prospect for more records higher in section (upper Halgaito Formation). We therefore anticipate the duration of the fieldwork to be two weeks spanning early to mid-July 2017.

The collected material will be transported back to museum repositories for curation and preparation starting in late July/August 2017. This is also why vehicular travel is budgeted as a more cost effective means of transporting crew and field materials than air travel. Rock samples collected for microfossils will be shipped to C. Henderson for preparation and analysis as early as August 2017. Vertebrate fossils will be prepared at participating institutions (Natural History Museum of Los Angeles County and Carnegie Museum of Natural History) by student trainees and/or voluntary preparators over the course of the following months (Winter 2017 through Spring 2018). Some preparation may take place longer than the duration of the initial funding period. However, some materials can be prioritized for reporting purposes and we would keep the BLM and NLCS managers informed of progress leading up to the reporting period. The final report would be written within six months leading up to July 2018 (within a year of the field work's completion), and results will be used in any publications following the grant period. All grants and permits will be acknowledged in any of the resulting publications and public presentations.

DELIVERABLES

Peer-review of the final report may be arranged by solicitation to colleagues who specialize in Carboniferous and Permian vertebrate paleontology and in the sedimentology and stratigraphy of Utah's Cutler Group. Results of the reviewed report would be incorporated into publications that would be further reviewed. Likely venues for publication would include highly regarded paleontological journals including *Palaeo3*, *Journal of Paleontology*, and *Journal of Vertebrate Paleontology*, but also open access journals with wide readership such as *PLOS:One* and *PeerJ*. With these publications, results will be announced via press releases for local and national newspapers, magazines, and web media. Replicas of important or exceptionally-preserved fossils will be produced and disseminated to collaborating institutions, including collaborating museums, schools, and the BLM's field offices for interpretive uses. Results will also be shared through professional and amateur society meetings, school visitations, and museum outreach events. Collected specimens will be repositated at the Carnegie Museum of Natural History, which houses and maintains the largest collection of Paleozoic vertebrates from Utah (and neighboring states).

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PARTNER'S QUALIFICATIONS*Principal Investigator*

Adam Huttenlocker, University of Southern California, Los Angeles, CA USA

Co-PI (Biographical Sketch provided below)

Stuart Sumida, California State University, San Bernardino, CA USA

Additional Research Team

David Berman (researcher), Carnegie Museum of Natural History, Pittsburgh, PA USA
 Charles Henderson (researcher), University of Calgary, Calgary, Alberta, Canada
 Amy Henrici (researcher), Carnegie Museum of Natural History, Pittsburgh, PA USA
 Jason Jung (student), California State University, San Bernardino, CA USA

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Education

Ph. D. Biology	2013	University of Washington, Seattle
M.S. Biology	2008	California State University, San Bernardino
B.A. Biology w/ Geology minor	2005	University of Colorado, Boulder

Employment

2016–present

Assistant Professor of Cell & Neurobiology, *Keck School of Medicine of the University of Southern California (USC), Los Angeles, CA*

2013–2016

NSF Postdoctoral Research Fellow, *University of Utah (U of U), Salt Lake City, UT*
National Science Foundation Postdoctoral Fellowship in Biology (NSF-DBI-1309040)
Sponsor: C. G. Farmer

2008–2013

Graduate Research Associate, *UW Burke Museum of Natural History & Culture (UWBM), Seattle, WA*
Paleontological and geological reconnaissance of the Permo-Triassic Argana Basin, Morocco;
Collaborative Research: New research on the Mesozoic vertebrate faunas of the Beardmore Glacier region, Antarctica (NSF-ANT-0838762); Collaborative Research: Testing climate-induced endemism in central Pangea (NSF-EAR-0617718)
Supervisor/PI: Christian Sidor

Grants and Fellowships

- National Science Foundation Postdoctoral Research Fellowship in Biology, 2013–2016, \$207,000
- National Science Foundation Doctoral Dissertation Improvement Grant, 2012–2013, \$14,365
- Evolving Earth Foundation Student Grant Program, 2011, \$3,000
- UW Department of Biology WRF-Hall Fellowship, 2010–2011, \$5,780
- Society of Vertebrate Paleontology Richard Estes Award, 2009, \$1,200
- University of California, Berkeley Doris and Samuel P. Welles Fund, 2009, \$600
- UW Department of Biology Snyder Award, 2009, \$1,250
- CSUSB Outstanding Graduate Thesis Award, 2008, \$500
- CSUSB Associated Students Incorporated Research & Travel Award, 2008, \$1,000
- CSUSB Sally Casanova Predoctoral Scholar, 2006–2007, \$3,000
- CSUSB Associated Students Incorporated Research & Travel Award, 2006, \$500

Selected Published Articles and Abstracts (10 shown out of 61)

- Codron, J., J. Botha-Brink, D. Codron, A. K. Huttenlocker, and K. D. Angielczyk. 2016. Predator-prey interactions among Permo-Triassic terrestrial vertebrates as a deterministic factor influencing faunal collapse and turnover. *Journal of Evolutionary Biology* (2016) 12983.
- Sidor, C., D. Vilhena, K. Angielczyk, A. Huttenlocker, S. Nesbitt, B. Peacock, S. Steyer, R. Smith, & L. Tsuji. 2013. Provincialization of terrestrial faunas following the end-Permian mass extinction. *Proceedings of the National Academy of Sciences of the United States of America* 110:8129–8133. [Covered by *NBC News & Science Magazine*.]
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- Huttenlocker, A. K., E. Rega, and S. Sumida. 2010. Comparative anatomy and osteohistology of hyperelongate neural spines in the sphenacodontids *Sphenacodon* and *Dimetrodon* (Amniota: Synapsida). *Journal of Morphology* 271:1407–1421.
- Huttenlocker, A. K., J. D. Pardo, B. J. Small, and A. Milner. 2009. Vertebrate responses to climate change across Central Pangea. *1st International Congress of North African Vertebrate Paleontology, Marrakech, Morocco*.

- Huttenlocker, A. K., J. D. Pardo, B. J. Small, and A. Milner. 2008. Biotic responses to climate change in the Permo-Carboniferous transition, Part 2: Beta diversity, regional responses, and Vaughn's faunal cline. *Society of Vertebrate Paleontology 68th Annual Meeting, Cleveland*.
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- Huttenlocker, A. K., B. J. Small, and J. Pardo. 2007. *Plemmyradytes shintoni* gen. et sp. nov., an Early Permian amphibamid (Temnospondyli: Dissorophoidea) from the Eskridge Formation, Nebraska. *Journal of Vertebrate Paleontology* 27(2):316–328
- Small, B. J., J. D. Pardo, and A. K. Huttenlocker. 2006. Taxonomic diversity of estivating species in the lowest Permian of North America: onset of seasonality and comments on physiological plasticity. *Society of Vertebrate Paleontology 66th Annual Meeting, Ottawa*.
- Huttenlocker, A. K., J. D. Pardo, and B. J. Small. 2005. An earliest Permian nonmarine vertebrate assemblage from the Eskridge Formation, Nebraska. Pp. 133–143 in S. G. Lucas and K. E. Ziegler (eds.) *The Nonmarine Permian: Bulletin of the New Mexico Museum of Natural History and Science* 30.

Professional Affiliations

Society of Vertebrate Paleontology (SVP)
 Society for Integrative and Comparative Biology (SICB)
Sigma Xi, Associate Member
 Palaeontological Society of Southern Africa (PSSA)
 The Paleontological Society
 Geological Society of America (GSA)
 Utah Friends of Paleontology (UFOP)

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Education

Ph. D. Biology	1987	University of California, Los Angeles
M.A. Biology	1983	University of California, Los Angeles
B.A. Biology	1981	University of California, Los Angeles

Employment

1992 – present

Professor of Biology, California State University San Bernardino, San Bernardino, CA

2003–present

Adjunct Professor of Kinesiology and Human Ecology, California State Polytechnic University, Pomona, CA

2010–present

Adjunct Professor of Anatomy, *Department of Anatomy, College of Osteopathic Medicine of the Pacific, Western University of Health Sciences, Pomona, CA*

2013–present

Professor and Master of Animation and Anatomy, *DeTao Masters Academy, Shanghai, China*

Grants and Fellowships

- VolkswagenStiftung, 2011, € 288,000 (Volkswagen Foundation, Germany) “Early Amniote Locomotion” (with Drs. John Nayakatura, Thomas Martens, David Berman, John Hutchinson, and Martin Fischer)
- The Pittsburgh Foundation, 2010, \$6228 “Dinosaurs, Art and, Children” For symposium to be held at 2010 Annual Meeting of Society of Society of Vertebrate Paleontology Meetings, Pittsburgh, Pennsylvania.
- National Science Foundation, 2006-2008, \$463,198. “Noyce Math and Science Scholars for the Inland Empire” (with Drs. Davida D. Fischman, Charles Schindler, and Joseph Jesunathadas).
- California State University San Bernardino Minigrant, 2005-2006; \$4,115. “Developing a Digital Atlas of the Ceratopsian Hindlimb”
- National Geographic Society Grant, 2002-2003; \$25,116 “The Lower Permian Bromacker Locality of Germany and Interpretation of Late Palaeozoic Paleoenvironments”.
- The Annenberg Foundation, 2000, \$15,000. “Science, Entertainment and Teaching: Bringing Cutting-edge Technology to the Scientific and Teaching Communities” (with Dr. Elizabeth Rega)
- California State University *T. rex* Initiative, 1999-2000; \$60,000. California State University System-wide Grant.
- California State University San Bernardino Minigrant, 1999-2000; \$3,430. “Ceratopsian dinosaurs from Dinosaur Provincial Park, Alberta, Canada.”
- National Geographic Society Grant, 1997-8; \$23,836. “New Information from Lower Permian Fossils from the Rotliegend of Central Germany” (with Drs. David Berman and Thomas Martens)
- California State University *T. rex* Initiative, 1998-9; \$80,000. California State University System-wide Grant.
- California State University *T. rex* Initiative, 1997-8; \$30,000 California State University System-wide Grant.
- NATO (North Atlantic Treaty Organization) Collaborative Research Grant, 1998; \$2,700. “Continued Study of Lower Permian Fossils from the Upper Rotliegend of Germany”
- National Geographic Society Grant, 1997-8; \$21,406. “Lower Permian Fossils from the Rotliegend of Central Germany” (with Drs. David Berman and Thomas Martens)
- NATO (North Atlantic Treaty Organization) Collaborative Research Grant, 1994-5; \$3,125. “Lower Permian Fossils from the Upper Rotliegend of Germany”
- National Geographic Society, 1994-5; \$13,500. “Lower Permian Vertebrates from a North American-like Assemblage of the Rotliegend of Germany”

Selected Published Articles and Abstracts (4 shown)

- Sumida, S. S., G. M. Albright, & E. Rega. 1999a. Late Paleozoic fishes of Utah. In *Vertebrate Paleontology in Utah: Geological Survey of Utah Miscellaneous Publication 99:13–20*.
- Sumida, S. S., J. B. Walliser, & R. E. Lombard. 1999b. Late Palaeozoic amphibian-grade tetrapods of Utah. In *Vertebrate Paleontology in Utah: Utah Geological Survey, Miscellaneous Publication 99:21–30*.

- Sumida, S. S., R. E. Lombard, D. S Berman, & A. C. Henrici. 1999c. Late Paleozoic Amniotes and Their Near Relatives from Utah and Northeastern Arizona, With Comments on the Permian-Pennsylvanian Boundary in Utah and Northern Arizona in Gilette. In *Vertebrate Paleontology in Utah: Utah Geological Survey, Miscellaneous Publication*, 99:31–43.
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Professional Affiliations

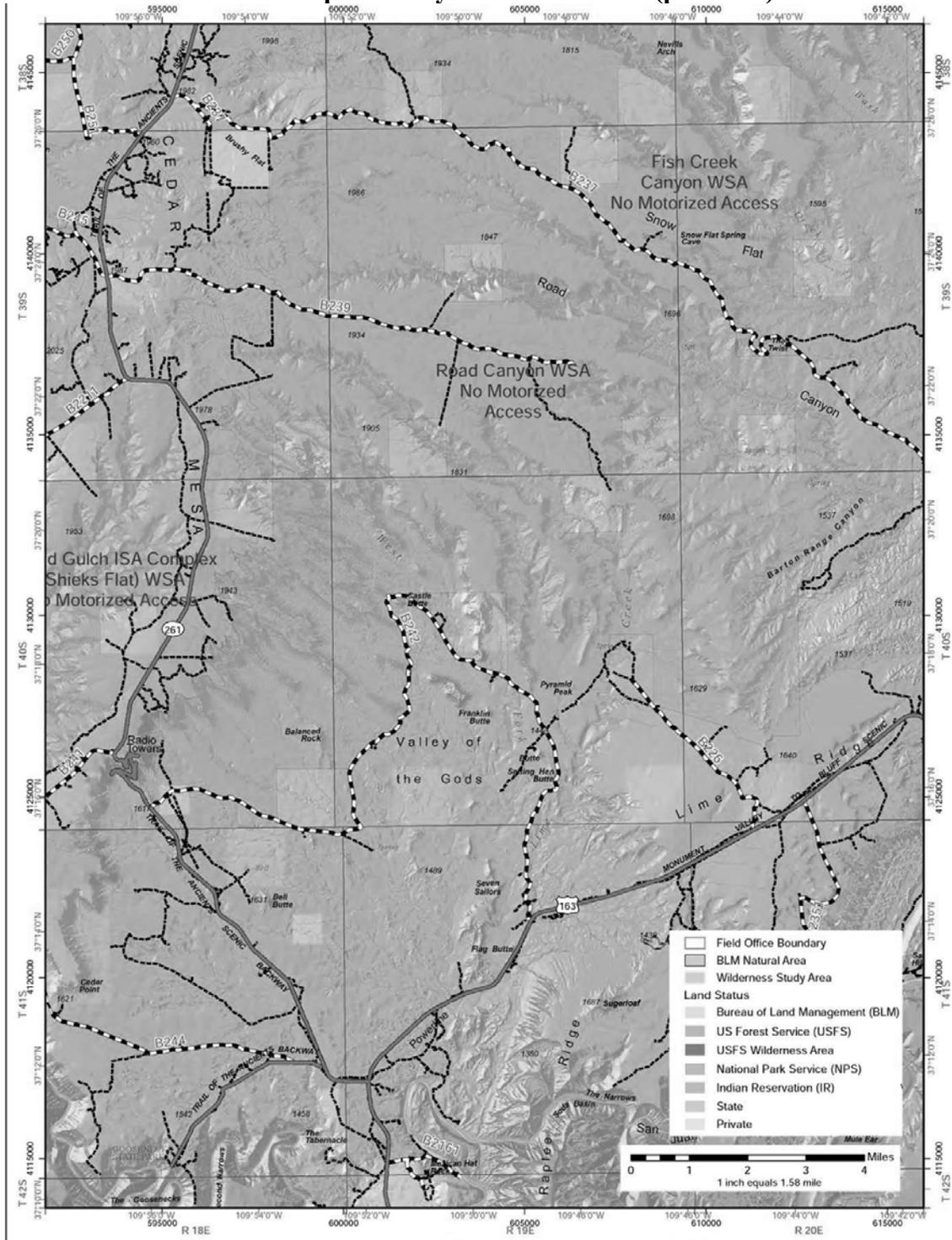
ASIFA – Association of Animation Professionals
British Palaeontological Society
Paleontological Society
Phi Beta Delta, Society of International Scholars
Phi Kappa Phi Academic Honor Society
Sigma Xi, National Scientific Research Society
Society of Integrative and Comparative Biology
Society of Vertebrate Paleontology
Southern California Academy of Sciences
Western Association of Vertebrate Paleontologists

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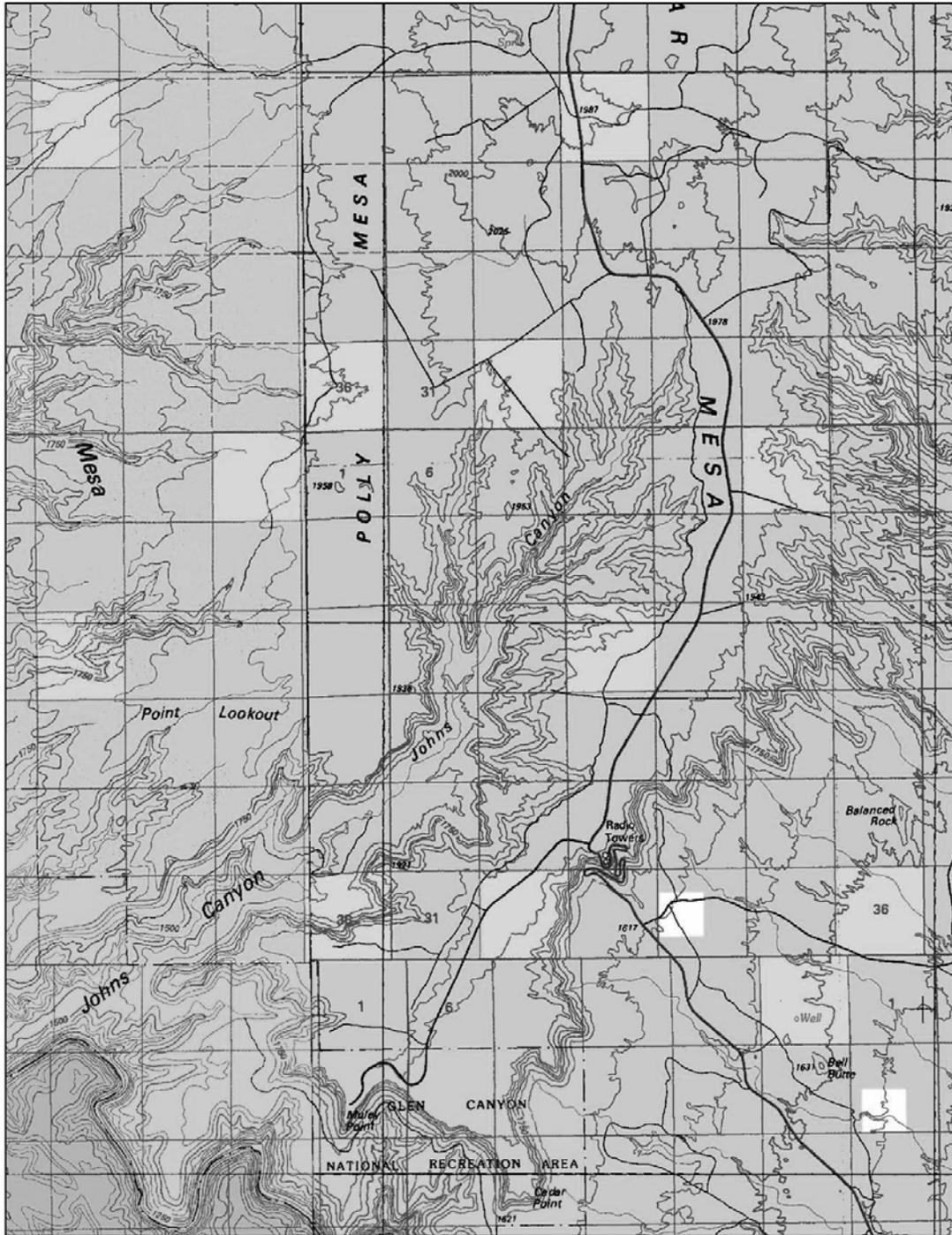
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- Vaughn, P. P. 1966b. *Seymouria* from the Lower Permian of southeastern Utah, and possible sexual dimorphism in that genus. *Journal of Paleontology*, 40(3), 603–612.
- Tabor, N. J., I. P. Montañez, C. R. Scotese, C. J. Poulsen, & G. H. Mack. 2008. Paleosol archives of environmental and climatic history in paleotropical western Pangea during the latest Pennsylvanian through Early Permian. *Geological Society of America Special Papers* 441:291–303.

General map of Valley of the Gods area (pre-2017)



BLM administered (light brown) and state lands (blue) now encompassed within the southern boundary of the new Bears Ears National Monument, marked by the San Juan River (bottom); former wilderness study areas (yellow)

General map of John's Canyon area (pre-2017)



BLM administered (yellow) and state lands (blue) now encompassed within the southern boundary of the new Bears Ears National Monument

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="02/01/2017"/>	4. Applicant Identifier: <input type="text"/>	
5a. Federal Entity Identifier: <input type="text"/>	5b. Federal Award Identifier: <input type="text"/>	
State Use Only:		
6. Date Received by State: <input type="text"/>	7. State Application Identifier: <input type="text"/>	
8. APPLICANT INFORMATION:		
* a. Legal Name: <input type="text" value="Washington State University"/>		
* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="91 6001108"/>	* c. Organizational DUNS: <input type="text" value="0414853010000"/>	
d. Address:		
* Street1:	<input type="text" value="Room 280 Lighty"/>	
Street2:	<input type="text" value="PO Box 641060"/>	
* City:	<input type="text" value="Pullman"/>	
County/Parish:	<input type="text" value="Whitman"/>	
* State:	<input type="text" value="WA: Washington"/>	
Province:	<input type="text"/>	
* Country:	<input type="text" value="USA: UNITED STATES"/>	
* Zip / Postal Code:	<input type="text" value="99164 1060"/>	
e. Organizational Unit:		
Department Name: <input type="text" value="Department of Anthropology"/>	Division Name: <input type="text" value="Museum of Anthropology"/>	
f. Name and contact information of person to be contacted on matters involving this application:		
Prefix: <input type="text" value="Dr."/>	* First Name: <input type="text" value="Shannon"/>	
Middle Name: <input type="text"/>		
* Last Name: <input type="text" value="Tushingham"/>		
Suffix: <input type="text"/>		
Title: <input type="text" value="Director, Museum of Anthropology"/>		
Organizational Affiliation: <input type="text" value="Washington State University"/>		
* Telephone Number: <input type="text" value="509 335 4314"/>	Fax Number: <input type="text" value="509 335 3999"/>	
* Email: <input type="text" value="shannon.tushingham@wsu.edu"/>		

DOI-2021-07 00622

Application for Federal Assistance SF-424		
* 9. Type of Applicant 1: Select Applicant Type: <input type="text" value="H: Public/State Controlled Institution of Higher Education"/>		
Type of Applicant 2: Select Applicant Type: <input type="text"/>		
Type of Applicant 3: Select Applicant Type: <input type="text"/>		
* Other (specify): <input type="text"/>		
* 10. Name of Federal Agency: <input type="text" value="Bureau of Land Management"/>		
11. Catalog of Federal Domestic Assistance Number: <input type="text" value="15.231"/>		
CFDA Title: <input type="text" value="Fish, Wildlife and Plant Conservation Resource Management"/>		
* 12. Funding Opportunity Number: <input type="text" value="L17AS00001"/>		
* Title: <input type="text" value="BLM FY2017 Bureau wide National Conservation Lands Scientific Studies Support Program"/>		
13. Competition Identification Number: <input type="text"/>		
Title: <input type="text"/>		
14. Areas Affected by Project (Cities, Counties, States, etc.): <input type="text"/> <input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>		
* 15. Descriptive Title of Applicant's Project: <input type="text" value="Supporting Scientific Studies of Archaeological Collections from Cedar Mesa Canyons"/>		
Attach supporting documents as specified in agency instructions. <input type="button" value="Add Attachments"/> <input type="button" value="Delete Attachments"/> <input type="button" value="View Attachments"/>		

Application for Federal Assistance SF-424	
16. Congressional Districts Of:	
* a. Applicant <input type="text" value="WA 005"/>	* b. Program/Project <input type="text" value="WA 005"/>
Attach an additional list of Program/Project Congressional Districts if needed.	
<input type="text"/>	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
17. Proposed Project:	
* a. Start Date: <input type="text" value="05/01/2017"/>	* b. End Date: <input type="text" value="04/30/2018"/>
18. Estimated Funding (\$):	
* a. Federal	<input type="text" value="11,793.00"/>
* b. Applicant	<input type="text" value="0.00"/>
* c. State	<input type="text" value="0.00"/>
* d. Local	<input type="text" value="0.00"/>
* e. Other	<input type="text" value="0.00"/>
* f. Program Income	<input type="text" value="0.00"/>
* g. TOTAL	<input type="text" value="11,793.00"/>
* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?	
<input type="checkbox"/> a. This application was made available to the State under the Executive Order 12372 Process for review on <input type="text"/> .	
<input type="checkbox"/> b. Program is subject to E.O. 12372 but has not been selected by the State for review.	
<input checked="" type="checkbox"/> c. Program is not covered by E.O. 12372.	
* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If "Yes", provide explanation and attach	
<input type="text"/>	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="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)	
<input checked="" type="checkbox"/> ** 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: <input type="text"/>	* First Name: <input type="text" value="Dan"/>
Middle Name: <input type="text"/>	
* Last Name: <input type="text" value="Nordquist"/>	
Suffix: <input type="text"/>	
* Title: <input type="text" value="AV/Director & Authorized Sign"/>	
* Telephone Number: <input type="text" value="509 335 9661"/>	Fax Number: <input type="text"/>
* Email: <input type="text" value="orso@wsu.edu"/>	
* Signature of Authorized Representative: <input type="text" value="Dan Nordquist"/>	* Date Signed: <input type="text" value="02/01/2017"/>

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 type="checkbox"/> New <input checked="" 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="01/24/2017"/>	4. Applicant Identifier: <input type="text"/>	
5a. Federal Entity Identifier: <input type="text"/>	5b. Federal Award Identifier: <input type="text" value="L12AC20378"/>	
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="Natural History Museum of Utah, University of Utah"/>		
* b. Employer/Taxpayer Identification Number (EIN/TIN): <input type="text" value="876000525"/>	* c. Organizational DUNS: <input type="text" value="009095365"/>	
d. Address:		
* Street1: <input type="text" value="75 South 2000 East"/>	Street2: <input type="text"/>	
* City: <input type="text" value="Salt Lake City"/>	County/Parish: <input type="text" value="Salt Lake"/>	
* State: <input type="text" value="UT: Utah"/>	Province: <input type="text"/>	
* Country: <input type="text" value="USA: UNITED STATES"/>	* Zip / Postal Code: <input type="text" value="84112 8930"/>	
e. Organizational Unit:		
Department Name: <input type="text" value="OFFICE OF SPONSORED PROJECTS"/>	Division Name: <input type="text" value="VP FOR RESEARCH"/>	
f. Name and contact information of person to be contacted on matters involving this application:		
Prefix: <input type="text"/>	* First Name: <input type="text" value="WILLIAM"/>	
Middle Name: <input type="text"/>	* Last Name: <input type="text" value="ERNEST"/>	
Suffix: <input type="text"/>	Title: <input type="text" value="Sponsored Proj Grant & Contrac"/>	
Organizational Affiliation: <input type="text" value="University of Utah"/>		
* Telephone Number: <input type="text" value="801/581 4714"/>	Fax Number: <input type="text" value="801/581 3007"/>	
* Email: <input type="text" value="william.ernest@osp.utah.edu"/>		

Application for Federal Assistance SF-424			
* 9. Type of Applicant 1: Select Applicant Type:			
<input type="text" value="H: Public/State Controlled Institution of Higher Education"/>			
Type of Applicant 2: Select Applicant Type:			
<input type="text"/>			
Type of Applicant 3: Select Applicant Type:			
<input type="text"/>			
* Other (specify):			
<input type="text"/>			
* 10. Name of Federal Agency:			
<input type="text" value="Bureau of Land Management"/>			
11. Catalog of Federal Domestic Assistance Number:			
<input type="text" value="15.231"/>			
CFDA Title:			
<input type="text" value="Fish, Wildlife and Plant Conservation Resource Management"/>			
* 12. Funding Opportunity Number:			
<input type="text" value="L17AS00001"/>			
* Title:			
<input type="text" value="BLM FY2017 Bureau wide National Conservation Lands Scientific Studies Support Program"/>			
13. Competition Identification Number:			
<input type="text"/>			
Title:			
<input type="text"/>			
14. Areas Affected by Project (Cities, Counties, States, etc.):			
<input type="text"/>	<input type="button" value="Add Attachment"/>	<input type="button" value="Delete Attachment"/>	<input type="button" value="View Attachment"/>
* 15. Descriptive Title of Applicant's Project:			
<input type="text" value="CRITICAL DINOSAUR FOSSIL RESOURCE PROTECTION, INVENTORY, AND SALVAGE: LATE CRETACEOUS FORMATIONS WITHIN GRAND STAIRCASE ESCALANTE NATIONAL MONUMENT"/>			
Attach supporting documents as specified in agency instructions.			
<input type="button" value="Add Attachments"/>	<input type="button" value="Delete Attachments"/>	<input type="button" value="View Attachments"/>	

Application for Federal Assistance SF-424	
16. Congressional Districts Of:	
* a. Applicant	UT 002
* b. Program/Project	2,3
Attach an additional list of Program/Project Congressional Districts if needed.	
<input type="text"/>	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="View Attachment"/>
17. Proposed Project:	
* a. Start Date:	05/01/2017
* b. End Date:	04/30/2018
18. Estimated Funding (\$):	
* a. Federal	20,739.00
* b. Applicant	20,691.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	41,430.00
* 19. Is Application Subject to Review By State Under Executive Order 12372 Process?	
<input type="checkbox"/> a. This application was made available to the State under the Executive Order 12372 Process for review on	<input type="text"/>
<input type="checkbox"/> b. Program is subject to E.O. 12372 but has not been selected by the State for review.	
<input checked="" type="checkbox"/> c. Program is not covered by E.O. 12372.	
* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)	
<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
If "Yes", provide explanation and attach	
<input type="text"/>	<input type="button" value="Add Attachment"/> <input type="button" value="Delete Attachment"/> <input type="button" value="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)	
<input checked="" type="checkbox"/> ** 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:	<input type="text"/>
* First Name:	Brent
Middle Name:	<input type="text"/>
* Last Name:	Brown
Suffix:	<input type="text"/>
* Title:	Director
* Telephone Number:	801 581 6903
Fax Number:	801 585 5749
* Email:	ospawards@osp.utah.edu
* Signature of Authorized Representative:	Brent Brown
* Date Signed:	01/24/2017

DOI-2021-07 00627

Manifest for Grant Application # GRANT12325434

Grant Application XML file (total 1):

1. GrantApplication.xml. (size 22929 bytes)

Forms Included in Zip File(total 7):

1. Form GG_LobbyingForm-V1.1.pdf (size 23154 bytes)
2. Form ProjectNarrativeAttachments_1_2-V1.2.pdf (size 21576 bytes)
3. Form SF424_2_1-V2.1.pdf (size 30333 bytes)
4. Form BudgetNarrativeAttachments_1_2-V1.2.pdf (size 22292 bytes)
5. Form SF424A-V1.0.pdf (size 29039 bytes)
6. Form Key_Contacts-V1.0.pdf (size 28974 bytes)
7. Form SF424B-V1.1.pdf (size 28440 bytes)

Attachments Included in Zip File (total 5):

1. BudgetNarrativeAttachments_1_2
BudgetNarrativeAttachments_1_2-Attachments-PSU_Fringe_Rate_Agreement1019857839.pdf
application/octet-stream (size 91422 bytes)
2. BudgetNarrativeAttachments_1_2
BudgetNarrativeAttachments_1_2-Attachments-PSU_F_A_Rate_Agreement_16_171019857840.pdf
application/octet-stream (size 114270 bytes)
3. ProjectNarrativeAttachments_1_2
ProjectNarrativeAttachments_1_2-Attachments-Attachment_A_Project__Proposal1019747635.pdf
application/octet-stream (size 81726 bytes)
4. BudgetNarrativeAttachments_1_2
BudgetNarrativeAttachments_1_2-Attachments-BudgetJustification1019747727.pdf
application/octet-stream (size 4697 bytes)
5. BudgetNarrativeAttachments_1_2
BudgetNarrativeAttachments_1_2-Attachments-Attachment_B_Budget_Detail1019747726.pdf
application/octet-stream (size 52366 bytes)