**PR Number: R1510120215**

**Award Number: P12AC10928**

**Project Number: ASU-75**

**Park/NPS Unit:** Pipe Spring National Monument

**Title of Project:** Conduct 3D Imaging of Prehistoric Rock Art and Historic Inscriptions at Pipe Spring National Monument

**Administered through:** Colorado Plateau Cooperative Ecosystem Studies Unit Cooperative Agreement Number H1200-09-0005

**CESU Partner:** Arizona State University

**Project Contacts**

**Principal Investigator:** Arleyn W. Simon, Ph.D., Director, Archaeological Research Institute School of Human Evolution & Social Change, Box 872402, Arizona State University, Tempe, AZ 85287-2402 USA arleyn.simon@asu.edu ph. 480.965.6957, fax: 480.965.7671 http://archaeology.asu.edu http://archnet.asu.edu

**Co-Investigator (if appropriate):** Daniel Collins, Professor of Intermedia, Co-Director of PRISM (Partnership for Research in Spatial Modeling <http://prism.asu.edu/>, Arizona State University, P.O. Box 871505, Tempe, AZ 85287-1505, phone 480-965-8311, fax 480-965-8338, dan.collins@asu.edu

**Researcher Specialist:** Linda Williams, Research Specialist, Sr., Archaeological Research Institute, School of Human Evolution and Social Change, Box 872402, Arizona State University, Tempe, AZ 85287-2402, Linda.Williams@asu.edu phone: 480-727-7545

**Consultant:** Scott Cedarleaf, 3D scanning specialist for SkyBucket3D,7033 East Main St. #202, Scottsdale, AZ 85251, phone: 917-680-4339, [www.skybucket3d.com](http://www.skybucket3d.com) Mobile: 213-253-8399, Skype: scedarleaf, fax: 480-965-7671 (attn: Arleyn Simon/Scott Cedarleaf)

**Partner Administrative Contact:** Danielle Silvas, Grant & Contract Officer, Award Management ASU-ORSPA,

Address: PO Box 876011, Tempe, AZ, 85287-6011, [danielle.silvas@asu.edu](mailto:danielle.silvas@asu.edu) , 480.965.4936

**NPS Certified ATR:** Andrea Bornemeier, Chief – Interpretation and Resource Management, PISP, HC 65 Box 5, Fredonia, AZ 86022, (928)643-7105, FAX – (928)643-7583, [andrea\_bornemeier@nps.gov](mailto:andrea_bornemeier@nps.gov) .

**NPS Technical Experts (if appropriate):** Amber Van Alfen, Resource Management Technician, PISP, HC 65 Box 5, Fredonia, AZ 86022, (928)643-7105, FAX – (928)643-7583, [amber\_van\_alfen@nps.gov](mailto:amber_van_alfen@nps.gov) ; Jenny Leasor, Curator, PISP, HC 65 Box 5, Fredonia, AZ 86022, (928)643-7105, FAX – (928)643-7583, [jenny\_leasor@nps.gov](mailto:jenny_leasor@nps.gov) .

**Funding Information:**

**Amount Funded:** $14,950

**NPS Account Numbers (amounts in parentheses):** 1242-CECP-RYY ($10,000), 1510- -CZA ($4950)

**Fund Source (e.g., ONPS, FLREA, CRPP, CESU, etc.):** CPCESU Base; ONPS Base

NPS Funding

Is this funded using a reimbursable account number? If yes, IMR contracting needs a copy of the Interagency Agreement.

**Project Dates:**

**Start Date:** July 1, 2012

**Any Other Product Milestone Dates you need to include:** March 31, 2013- Delivery of final reports and all project materials to PISP

**End Date:** March 31, 2013

**NPS Administrative Contacts**

**CESU Coordinator:** Judy Bischoff, CPCESU Research Coordinator, NAU P.O. Box 5765, Flagstaff, AZ 86011, Phone: 928-523-6638, Fax: 928-523-2014, Email: judy\_bischoff@nps.gov

**Intermountain Region Administrative Contact:** Kelly Adams, Grants and Agreements Specialist, National Park Service, Intermountain Region, PO Box 25287, Denver, CO 80225-0287, 12795 West Alameda Parkway, Lakewood, CO 80228-0287, Phone: 303-969-2392 Fax: 303-969-2786, Email: kelly\_adams@nps.gov

FINAL INVOICES ARE PAYABLE ONLY IF THE REPORTS AND/OR PRODUCTS HAVE BEEN RECEIVED AND APPROVED BY THE NPS CERTIFIED ATR AND RECEIVED BY THE APPROPRIATE CESU COORDINATOR. 10% OF PROJECT FUNDS WILL BE WITHHELD UNTIL AFTER ACCEPTANCE OF THE FINAL REPORT. NO INVOICES SMALLER THAN $500 WILL BE PAID EXCEPT FOR THE LAST INVOICE TO CLOSE THE PROJECT ACCOUNT.

**Reporting & Invoicing Requirements for All Agreements:**

Required of all agreements:

Invoice Payable up to 90% - Draft Final Report – December 31, 2012

Invoice Payable up to 100% - Final Report – March 31, 2013

Project End Date – March 31, 2013

Final Invoice – No later than June 30, 2013

**Project Schedule**:

Project Start Date – July 1, 2012

Site Visit – October, 2012

Progress Report (Post site visit) – November 15, 2012  
Draft Final Report – December 31, 2012

Final Report –March 31, 2013

Database, Collections/Specimens, Archives, and Maps Provided to ATR –March 31, 2013

Project End Date– March 31, 2013

**CESU REQUIRED PRODUCTS :**

The Principal Investigator will prepare a brief report abstract suitable for public distribution and two hard copies and an electronic version (in PDF file format) of the final report and mail all toJudy Bischoff, CPCESU Research Coordinator, NAU P.O. Box 5765, Flagstaff, AZ 86011. Please be sure to include the project number (e.g.; NAU-###, UNM-###) and the J number on the cover page of the final report.

**PROJECT ABSTRACT:**

The purposes of this project are to obtain baseline condition information of prehistoric rock art and historic inscriptions at Pipe Spring National Monument and provide educational opportunities for NPS staff, college students, and tribal members in the art, techniques, and use of 3D laser imaging in managing cultural resources. 3D laser imaging of identified sites will be conducted and is necessary to produce quality inscription documentation and condition assessment. The final report will identify natural occurrences on the rock and wood surfaces versus human caused.

**Scope of Work:**

**1.** PISP staff will identify the resources (up to 10 locations with multiple elements) that require 3D imaging. PISP will provide the necessary background information and records related to the resources to the PI at the initiation of the project. This includes: site records, maps, photographs, current condition assessments, and treatment records.

2. The PI and research team will conduct appropriate records search, discuss the needs and intent of the project with park management, discuss the condition of the resources, the location/access issues of resources, PISP staff involvement during field work, and the intended results of the 3D imaging (summary report, digital formats, digital storage, future use/modifications).

3. The NPS will process any necessary compliance (National Environmental Policy Act, National Historic Preservation Act, tribal consultation, etc.) related to the imaging activities on the part of the cooperator.

4. The PI will schedule a site visit to conduct the 3D imaging at Pipe Spring National Monument. The PI will identify the equipment needs, access logistics, and any other necessary support to the staff at PISP previous to the site visit. PISP staff will provide and facilitate all needs and requirements and participate with the research team through the entirety of the site visit.

5. The PI will provide all of the equipment to produce 3D images of the identified resources. The PI will provide the personnel necessary to collect the 3D imaging data. The PI will have students involved to utilize the site visit and subsequent data analysis as a technical training opportunity. All of the work during the site visit will be conducted during the open hours of the Monument.

6. The PI will produce 3D images of the selected resources. The 3D images may come in a variety of formats which may include, but are not limited to: software, high resolution digital images, point clouds, registered mesh, infrared images, digital electronic meter readings, raw files, processed files, high resolution prints, and computer programs.

7. The PI will produce a draft baseline data report by December 31, 2012. The report will: document the activities conducted during the site visit; include graphics of the 3D images; synthesize the data collected (baseline data and condition information); and describe how to use and/or modify the digital products.

8. The NPS will review the draft report and return comments to the P.I. within four weeks of receipt of the draft –January 31, 2013.

9. The P.I. will deliver a final written report by March 31, 2013. The P.I. will also deliver other relevant project documents and materials at the same time - all records associated with the project such as field notes, instrument sheets, maps, digital images, photographs and photograph logs, etc. These will be used by the NPS in its resource management activities and are retained as part of the museum collection, as well.

Upon completion of the project, by March 31, 2013, the P.I. must submit to PISP:

* Two copies of all field records (notes, maps, recordings, reports, images, photo logs/worksheets (i.e. for digital images)) and raw data

1) one copy printed or copied onto archival or acid-free quality paper

2) one copy stored on compact disc, gold-on-gold CD (preferred) or DVD in PDF file format

* Two copies of digital images, submitted on compact discs - gold-on-gold CDs (preferred) or DVDs

1) one compact disc will store the images as TIFF files (to be retained by the park for the Master Copy)

2) one compact disc will store the images as JPEG files (to be retained by the park for the Use Copy)

* Two copies of final reports and publications

1) one copy printed or copied onto archival or acid-free quality paper

2) one copy stored on compact disc, gold-on-gold CD (preferred) or DVD in PDF file format

**PRODUCTS:**

1. Final report as described above.

2. High definition digital photographs as described above.

3. A digital point cloud, on a format that can be utilized by a variety of graphic programs

4. A digital registered mesh, on a format that can be utilized by a variety of graphic programs.

**Cooperative Agreements or Task Agreements involving Student Interns or Student Employees or Research Associates**

**Background**

In cooperative agreements or task agreements with universities where the university utilizes interns, student employees, research associates (RAs) or cooperators on-site (hereafter called “cooperator personnel”), these cooperator personnel sometimes work on government sites in close proximity to federal employees. It is illegal (without specific statutory authority) for federal employees to directly supervise the cooperator personnel or any university employees or for the students or other university employees to supervise federal employees. When cooperator personnel are working on an NPS site, it is important that there is a clear distinction between students and federal employees.

**Office Environment and Vehicles**

* The office space of the cooperator personnel and NPS personnel should be clearly labeled (Name and NPS or University affiliation on office or cubicle space).
* Cooperator personnel should be listed separately from NPS personnel in telephone lists, other identification or organizational rosters, and publication credits.
* Cooperator personnel should not receive “all-employee” e-mail or other communications intended for NPS personnel (unless it relates directly to the work the cooperator is doing for the NPS). When the e-mail does relate to the work being done, a copy of the same e-mail message should be sent to the University or cooperator’s supervisor.
* Cooperator personnel may use NPS e-mail systems when the communication relates directly to the work the cooperator is doing for the NPS. The e-mail addresses of the cooperator personnel must include a label associated with their NPS e-mail address that identifies the cooperator’s status (i.e., “Linda Webb, Cooperator” would be the label associated with the e-mail address, [linda\_webb@contractor.nps.gov](mailto:linda_webb@contractor.nps.gov)). Doing so clearly identifies this individual each time they send an e-mail message using the NPS system, and it identifies their status as a research associate, student intern or student employee in the e-mail directory.
* Unless stipulated in the agreement, cooperator personnel should not drive government vehicles.
* Unless stipulated in the agreement, cooperator personnel should not ride as a passenger in a government vehicle. When this is planned as part of the agreement, an appropriate amount of liability insurance should be negotiated.
* Prior written approval by the Park Superintendent or Center Manager must be obtained in order for a task to allow cooperator personnel to drive or ride in government vehicles.

**Supervision and Scheduling**

* Each task must specify the university’s/cooperator’s supervisor for the cooperator personnel.
* Unless stipulated in the agreement, NPS staff should not set hours for cooperator personnel, specify where the work should be done, or conduct performance appraisals. National Park Service staff may give performance feedback to the cooperator personnel supervisor.
* Cooperator personnel should report leave, scheduling, and other related issues to the university or cooperator’s supervisor, not to NPS employees. The supervisor of the cooperator personnel should then communicate with the NPS. National Park Service employees cannot directly supervise cooperator personnel on a day-to-day basis. Work should be given to the cooperator personnel (via the cooperator’s supervisor) on a “task basis.” Cooperators should work without NPS supervision to accomplish each task, although technical consultations and cooperation is permissible.
* The Cooperator will be responsible for any disciplinary action needed to correct student employee conduct or performance problems. The NPS agreements technical representative will inform the university/cooperator’s supervisor of any conduct or performance problems.
* The Cooperator will remove student employees from their positions if they fail to improve performance or address conduct issues.
* The NPS will review and provide feedback to students or interns regarding work assignments.
* The NPS will inform the cooperator of conduct or performance problems with cooperator personnel so that the university can counsel employees and correct the performance problems.
* The NPS will recommend to the cooperator dismissal of cooperator personnel based on conduct or performance issues.
* The Cooperator will hire students, interns or RAs to work on NPS tasks identified in the agreement. Hiring will be conducted in consultation with the NPS Agreements Technical Representative (ATR).
* The Cooperator will: pay students, interns or RAs for hours they have worked in support of the agreement.

**Representation and Communication**

* Cooperator personnel cannot in any way represent themselves to the public as NPS employees.
* Cooperator personnel are required to wear visible identification at all times.

**Other Issues**

* Cooperator personnel should not list an NPS affiliation on publications, but rather should list the cooperative agreement under which the work was performed.
* Cooperator personnel should not be invited to official NPS “social” events.
* Cooperator personnel are not authorized to purchase property and supplies with government funds.
* Cooperator personnel will follow the local policy of the facility when federal facilities are closed due to early release for holidays, snow days, etc.

**BUDGET:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **Rate** | **Unit** | **Number of Units** | **Total** |
| **Salaries** |  |  |  |  |
| **P.I. ,Arleyn Simon** | **$55.00** | **Hours** | **16** | **$880.00** |
| **Professor of Intermedia, Daniel Collins** | **$53.00** | **Hours** | **8** | **$424.00** |
| **Research Specialist, Linda Williams** | **$29.75** | **Hours** | **4** | **$119.00** |
| **Hourly Wages** |  |  |  |  |
| **Sr. Student** | **$17.57** | **Hours** | **88** | **$1546.00** |
| **Student** | **$12.00** | **Hours** | **88** | **$1056.00** |
| **Benefits** |  |  |  |  |
| **For P.I.** | **@ 30.7%** |  | **$880.00** | **$270.00** |
| **For Prof of Intermedia** | **@ 30.7%** |  | **$424.00** | **$130.00** |
| **For Research Specialist** | **@ 40%** |  | **$119.00** | **$ 48.00** |
| **For Sr. Student** | **@1.5%** |  | **$1546.00** | **$ 23.00** |
| **For Student** | **@1.5%** |  | **$1056.00** | **$ 16.00** |
| **Travel** |  |  |  |  |
| **Mileage** | **$0.445** | **Miles** | **919** | **$409.00** |
| **Lodging** | **$75.00** | **Night** | **3** | **$225.00** |
| **Per diem** | **$34.00** | **Meal** | **18** | **$612.00** |
|  |  |  |  |  |
|  |  |  |  |  |
| **Consultant (scanner & personnel)** |  |  |  |  |
| **Consultant,**  **Scott Cedarleaf**  **(provides 3D scanning**  **equipment, computer,**  **data processing)** | **$3000.00** | **Days** | **2** | **$6,000.00** |
| **Mileage** | **$0.445** | **Miles** | **919** | **$409.00** |
| **Lodging** | **$75.00** | **Night** | **3** | **$225.00** |
| **Per diem** | **$34.00** | **Meals** | **6** | **$204.00** |
| **Supplies** |  |  |  |  |
| **(DVDs, toner, printing,**  **binding, shipping, etc)** | **1** |  | **126.5** | **$127.00** |
|  |  |  |  |  |
| **Total Direct Costs** |  |  |  | **$12,723.00** |
| **Total Indirect Costs (17.5%)** |  |  |  | **$ 2,227.00** |
| **GRAND TOTAL** |  |  |  | **$14,950.00** |