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Funding Opportunity: National Leadership Grant for Libraries
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Project Category: Curating Collections
Project Title: Community standards for 3D data preservation (CS3DP)
Requested amount: $99,960

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Lead Partners: Hannah Scates Kettler, Digital Humanities Research & Instruction Librarian, University of Iowa; Adam Rountrey, Research Museum Collection Manager, University of Michigan Museum of Paleontology

To aid in the organization of nationally shared resources for the preservation and management of 3D digital research outputs, the Washington University Libraries in collaboration with the University of Iowa Libraries and the University of Michigan Museum of Paleontology will partner to hold a set of community forums, titled *Community standards for 3D data preservation (CS3DP)*, to work toward establishing standards, practices, and technologies for 3D data preservation, documentation, and dissemination. The forums will produce a report on emerging preservation and curation practices as well as establish a formal community of practice.

Background and National Need
The project team surveyed an international community including individuals involved in digital curation and 3D data acquisition and research, primarily at universities and museums. Of 104 respondents 70% said that they did not use best practices or standards for preservation, documentation, and dissemination of 3D data. Of those not using standards/best practices, 69% said that they did not use them because they were unaware of such standards. Respondents who are using standards largely developed them in-house. The vast majority (82%) of all respondents said they would like to collaboratively develop standards and best practices as a community. Survey comments, such as *I am very excited to see that you are doing this survey and potentially pulling this community together,* from an expert at a leading museum captures the desire for a forum.

Although there is great interest in 3D applications in research, there is currently little available guidance regarding the preservation of digital objects and associated information in perpetuity. The preservation and sharing of research data is a necessary, invaluable responsibility of libraries and museums, and although standards and best practices have been developed for many kinds of digital data to ensure assets can be accessed and reused in perpetuity, the applicability of these standards to 3D data is limited, as evidenced by our survey results. The proposed forums will convene qualified groups of experts and key stakeholders, including librarians, faculty and professionals in adjacent fields from the United States and abroad in consultation with organizations such as the Data Curation Center, Morphosource, and the Digital Preservation Coalition.

Plan
Two forums will be held. Forum participants will be solicited from known entities creating 3D data, survey respondents, and from organizations focused on data preservation, for example, MorphoSource, Research Data Alliance, Data Curation Center, IASSIST, SHARE, and the Digital Library Federation.

The first forum will serve to explore topics, layout a vision, and form working groups. The working groups will include the PI or a partner to provide oversight of the groups, as well as technologists and stakeholders specific to the working group topic. Work will take place between forums with ongoing communication using Slack and monthly group web meetings, which will be open to the greater community established by the survey. The forum groups will document development, questions, and results using the Open Science Framework (OSF). The second forum will reconvene the whole group for hands-on exploration of working groups' solutions and discussion of development, funding, and deliverables. Deliverables include formalizing the community of practice and task-oriented working groups, a community-developed plan for progressing 3D preservation, recommendations for standards and best practices, and a report to be disseminated through IMLS and amongst communities engaged in 3D research.

Forum topics will draw from the results of the community survey and will be presented by practitioners and experts. Topics for the first meeting may explore, but are not limited to unpacking 3D data methods, the state of current practices, extant metadata and standards, availability and use of digital tools and services, and existing workflow presentations. Based on survey data, working groups will likely focus on metadata, archival practice, standardization, ownership, and copyright; forum discussions will help guide group formation. Topics and activities for the second forum will incorporate hands-on implementations of developments and discoveries made by working groups, and the forum participants will map the next steps.

Roles
In collaboration with the partners, the PI/Project Director will coordinate the on-site forum activities, facilitate communication, and develop content and deliverables. The PI and partners have complementary experience working with 3D research data and a vested interest in development of community standards now, as 3D data at these and other institutions are rapidly accumulating. PI Moore is a project manager and librarian on the Data and GIS team at Washington University in St. Louis. Currently, Moore leads a project to capture, manage and preserve structured light scans of 2000 plaster jaw casts from baboons. Dr. Rountrey has been involved in 3D digitization and research at the University of Michigan for over a decade. He manages an online 3D repository project (UMORF) and has experience with a variety of 3D research workflows. Hannah Scates Kettler's work with the Digital Scholarship & Publishing Studio at the University of Iowa Libraries focuses on making 3D representations of cultural heritage objects using modeling practices, photogrammetry and laser scanning accessible to the public.

Goals and Outcomes
Building from the list of survey respondents, the project will establish a formal community of practice in 3D data preservation that will collaboratively work to begin developing these much-needed preservation and documentation models.

Outcomes from CS3DP collaboration will be 1) a community-developed plan to move 3D preservation forward 2) recommendations for standards and best practices and 3) a report to be disseminated through IMLS and among communities engaged in 3D research and/or data preservation and curation via institutional repositories, potential publications, conference presentations and listservs. Opportunities for dissemination have already emerged. As a result of the survey, the project team has become acquainted with another IMLS NLG National Forum proposal, "Developing Library Strategy for 3D and Virtual Reality Collection Development and Re-Use". If funded, the CS3DP team will work with Project Director, Nathan Hall of the Virginia Institute of Technology & State University, to have formal representation at the appropriate forum meetings on 3D and Virtual Object collections to inform their overall roadmap for these collections.

Timeline
The proposed one-year planning start date is October 1, 2017 for a forum to be held in January of 2018. During the forum, working groups and roadmaps will be developed. The larger community will be invited to participate in monthly meetings where working group progress can be reported and decisions about new and next steps (e.g., applying for an IMLS Research Grant) will be discussed. A draft report recommending standards and documentation will be circulated to the group by March 2018 for comment. The hands-on forum to explore solutions and prepare deliverables will be held in July of 2018. By September 2018, working documents will be available publically, and the final report will be submitted to IMLS no later than October 1, 2018.

Budget
The total requested amount for the national forums and working group explorations is $99,960. The first of the two forums will include approximately 70 participants (including 25 invited experts) and will take place over 3 days on the campus of Washington University in St. Louis. Estimated costs include:
- Travel for 25 expert participants at $600/person = $15,000
- Accommodation for 25 expert participants at $150/night/person = $15,000
- Three days of working breakfast meetings for 70 participants = $1000
- Three days of working lunch meetings for 70 participants = $3000

The second forum will be held at Washington University in St. Louis, or at a partnering institution, and will have a similar profile and cost.
- An additional $2500 will be used for materials and supplies for both forums
- The PI's institution will contribute 5% of her time to work as project director
- PI and Lead Partners will require funds for travel to conferences for presentations, $1000/PI or Lead Partner = $3000

The subtotal for the forums is $73,500 with an added $26,460 for indirect costs (figured at 36%) for a total of $99, 960.

Impact
The forums will have the immediate impact of bringing stakeholders working in this field together to develop 3D preservation standards as a community, thereby creating a formal community of practice. The deliverables from the conference itself and the working groups will serve as scalable, freely available resources for the broader community to use, adapt and build upon.