PROJECT CHARTER 5/11/18

This document is intended to clarify expectations and support the successful completion of the *Visual Topology: 3D Modeling of TLV Bronze Mirrors in Early China*, a project supported by the LITS Teaching, Learning, and Research team and the Digital Scholarship program at Bryn Mawr College. The following is proposed by the project team, in consultation with Alicia Peaker (Digital Scholarship Specialist, LITS).

VISUAL TOPOLOGY: 3D MODELING OF TLV BRONZE MIRRORS IN EARLY CHINA

PROJECT GOALS & OBJECTIVES

- Complete accurate 3D models of three bronze TLV mirrors.
- Create and build a dataset of specific mirror attributes from publications.
- Publish an interactive platform where students can create their own mirrors based on constraints revealed through our data.
- Begin process of seeking external funding to support expansion of the project, including algorithmically generalized mirror.

DELIVERABLES

1. Two datasets that describe examples of Chinese bronze mirrors
   a. First will be drawn from publications
   b. Second will be drawn from photogrammetric point data
2. At least three completed 3D Models of bronze mirrors from collections at:
   a. Bryn Mawr
   b. Princeton
   c. The Freer
3. Interactive Web Application for classroom use

TEAM MEMBERS' ROLES AND RESPONSIBILITIES

Jie Shi, Project Director

- Help initiate and plan site visits for photographing objects
- Connect Matt to key contacts at selected sites
- Supervise Research Assistant(s)
- Supervise Graduate Assistant(s) (with Project Manager)

Alicia Peaker, Digital Scholarship Specialist and Project Manager

- Manage the project
- Design and implement the web application
- Supervise Graduate Assistant(s) (with Project Director)
- Liaise with the Teaching, Learning, and Research team
- Advise on finding and applying for external grants

Matthew Jameson, Digital Scholarship Graduate Assistant

- Manage photogrammetry equipment for the project
- Travel to at least two sites to photograph mirrors
- Create 3D models of mirrors using photogrammetry
- Conduct exploratory research into feasibility of using AgiSoft for a generalized model of mirrors

Marianne Weldon, Collections Manager

- Provide access to equipment and collections as needed
- Publish completed 3D models to appropriate sites managed by Special Collections

Jialu Guo, Research Assistant

- Conduct research on publications related to bronze mirrors
- Create a spreadsheet of data gleaned from publications

Jessica Goodman, Photogrammetry Assistant (Spring 2018)

- Collaborate with Matt to photograph and begin creating first model of mirror at Bryn Mawr

SCHEDULE

Milestones

- Wireframe for web app completed
- First model completed
- Second model completed
- Third model completed
- Final dataset for pilot completed
- Web application completed

ID	Task	Time Estimate	Depend.	Due Date	Responsible	Completed
1	Web App Wireframe Complete	2 hours		6.1.18	Alicia	5.8.18
2	Top-level pseudo-code for web app completed	2 days	1	6.1.18	Alicia	6.1.18
3	Small dataset from publications available for testing	3 weeks		7.20.18	Jialu	6.8.18
4	First photogrammetry model completed	3 weeks		6.15.18	Matt	6.18.18
5	Princeton mirror shot	1 day		7.20.18	Matt	6.29.18
6	Princeton mirror photogrammetry model completed	1 week	5	7.27.18	Matt	7.6.18
7	Data wrangled into usable format	2 days	3	8.10.18	Gialu	7.15.18
8	Third mirror shot	1 day		7.20.18	Matt	7.23.18
9	SVGs, Fonts, and Inscriptions sent to Alicia	1 week		8.10.18	Jie	9.17.18
10	Third photogrammetry model completed	1 week	8	7.31.18	Matt	7.31.18

11	Web app code drafted	4 weeks	7	8.1.18	Alicia	6.1.18
12	Final dataset to Alicia	1 day	3	8.1.18	Jialu	8.1.18
13	Functional Application	2 weeks	11, 12	8.15.18	Alicia	8.1.18
14	Exploration of AgiSoft generalizable model	4 weeks	10	8.26.18	Matt	9.1.18
15	Final revisions of web app completed	2 weeks	13	8.31.18	Alicia	9.27.18
16	Rerun models on new machine	1 week	10	9.7.18	Matt	10.1.18

ANTICIPATED CONCERNS

1. Access to mirrors depends on the participation and availability of external museums and organizations.
2. Because of the reflective surfaces and symmetry of these mirrors, there is a high level of difficulty in creating accurate photogrammetric models. Matt has identified lighting as the main challenge of photographing the mirrors, and he will continue to experiment in order to identify the appropriate environment in which to shoot the mirrors. This will ensure we can produce an accurate model with our Bryn Mawr mirror before we visit external sites to photograph their mirrors.
3. Environment for photo capture of mirrors at partner sites may be difficult to prepare for or control. To mitigate this, Jie and Matt will communicate in detail with museum specialists to ensure the right space and/or equipment is available prior to their visit.
4. We want to ensure that the 3D models are available for public use. TriArte may be unable to accommodate this need. Alicia and Marianne will pursue further.

SUCCESS CRITERIA

1. Three or more complete and accurate 3D models will be made publically available.
2. A functional web application, that meets stated pedagogical goals, will be available for a course in fall 2018.
3. Next steps for connecting photogrammetric and "hand-collected" data to feed into the web application will be established.

COMMUNICATION

The core team (Jie, Alicia, and Matt) will meet bi-weekly to discuss project process and address issues. Additional communication will happen primarily through email. Alicia will keep the LITS Teaching, Learning, and Research (TLR) team apprised of the project progress. Jie and Alicia will prepare a final, short report for the TLR at the completion of the project. Results of the project will be shared with the Bryn Mawr community through a Tech Talk or similar event.

CREDIT & ATTRIBUTION

The Digital Scholarship program is committed to fair and equal attribution and credit for all work performed on digital scholarship projects. When this project is referenced (for example, in conference presentations or blog posts) the project team will be attributed. Any code produced for this project will be released open source and the dataset will be openly accessible.

PRESERVATION AND LONG-TERM ACCESS

The dataset will be maintained and backed up by the Project Director. Data created through photogrammetry, including the creation of 3D models of Bryn Mawr College Special Collections and Archives will be kept by LITS and made publically accessible via a platform like SketchFab while the model and software remain useful and relevant, as determined by LITS staff. Photogrammetric data and models collected from objects belonging to external institutions will be shared back with those institutions who will be responsible for their own preservation and long-term access.

The Digital Scholarship program will maintain access to the web application until an external grant to expand the project has been awarded, or for three years, or until the platform is no longer useful, whichever is soonest. No additional development of the platform is guaranteed beyond the initial LITS Digital Bryn Mawr seed grant (summer 2018).

These arrangements may be overwritten by the LITS long-term preservation policy, which is currently in development.

These arrangements are subject to change as the project evolves. Major changes to any of these sections may necessitate a team meeting.