

## **2005-2007 LITRE Grant Proposal**

---

### **1. Project Title:**

Immersive Imaging as a Way to Increase Academic Contact with the Collection of NC State's Gallery of Art & Design

---

### **2. Project Coordinator:**

**First Name:** John

**Last Name:** Williams

**Campus Address:** Campus Box 7306, Room 3302, Talley Student Center

**Email Address:** john\_williams@ncsu.edu

**Campus Phone:** 919-513-7243

**Unity ID:** jwwilli2

---

### **3. Other Participants:**

Dr. Charlotte V. Brown-Director, Gallery of Art & Design

Dr. Lynn J. Ennis-Curator of the Collection, Gallery of Art & Design

Zoe Starling, Curator of Educational Resources, Gallery of Art & Design

---

### **4. College or Unit:**

Student Affairs

---

### **5. Department:**

Gallery of Art & Design

---

### **6. Project Description:**

The Gallery of Art & Design seeks to increase student contact and research opportunities with the University's art collection and its 6-10 annual exhibitions through the use of immersive imaging in the form of QuickTime Virtual Reality (QTVR) Panoramic & Object Movies. This technology is now considered a valuable educational asset because of the "low cost of creation and playback as well as the broad installed user base..." (Mohler 151). QTVR is readily available to a majority of students, academic classrooms and computer labs at NC State, as all major web browsers currently support the QuickTime format.

QTVR Panorama movies are created by taking several overlapping still pictures from a tripod with a panning head. Special software is used to "stitch" the pictures together, fusing them into one seamless 360 degree picture. The "stitched" picture is then converted into a QuickTime VR Panorama. The movie is then placed on the web where students and faculty (the users) can easily access it. The user can interact with the panorama by placing the cursor within the movie, holding the mouse button down, and moving the cursor in the direction he/she wishes to "look." The user can also zoom in and out of the movie to examine different parts of the scene. John Williams of the Gallery of Art & Design will photograph and archive all Gallery of Art & Design exhibitions

using this technology and make them available for viewing and academic use from the GAD's website.

QTVR Object movies are created by placing an object on a turntable and taking a number of still pictures of the object as it is turned around on a turntable. The pictures are then used to make a linear movie and finally, a QTVR Object movie. The movie is then placed on a website, where it can be easily accessed by users. The user can then turn and zoom in on the object to examine it in detail. The Gallery of Art & Design has identified key collection pieces that will be photographed using this technology by John Williams. Williams will then archive and make the object movies available for viewing on the Gallery's website. Faculty wanting to use particular objects from the Gallery's collection will be able to identify these items by searching the Gallery's online collections database and then requesting movies of particular objects.

Zoe Starling, the Gallery's Curator of Educational Resources will use this technology when she works with the faculty at NC State to incorporate GAD resources into the classroom, in both on-campus and in Distance Education settings.

The result of this project, if implemented, would be:

1) a collection of objects that are viewable in a 3 Dimensional format on the Gallery's website. The project will begin with a group of 50-75 objects chosen by the staff of the Gallery of Art & Design as the most important and widely applicable to the most students and their learning needs. Each semester, 30-50 objects, in addition to those requested by students and faculty, would be added to form a collection of 3D-viewable objects.

2) the availability of collection objects photographed in 3D upon request by faculty members for use in their courses and;

3) the availability of exhibitions via 3D virtual, panoramic tours that will provide students and class groups with the ability (currently limited by the restraints on class time and syllabi) to more easily "visit" the Gallery of Art & Design to view exhibitions. Exhibition experiences based on this type of digital experience will be enhanced, as particular (or all) objects can be made zoomable and the creator of the panorama can include "hotspots" that the user can select to gain extended information and additional "suggested" resources that provide more information about an object, artist or related artists and objects. This aspect of the proposal would improve the availability of the Gallery's award-winning exhibitions for an extended period of time. Currently, each of the Gallery of Art & Design's exhibitions are on view for periods of 6-10 weeks. Photographed this way, the window in which one may view the exhibition would be extended from 6-10 weeks into perpetuity through the archiving of all exhibitions on the Gallery's website.

Christal, Mark, "QuickTime Virtual Reality for Educators and Just Plain Folks." <http://www.edb.utexas.edu/teachnet/qtvr/Index.html#About>.

Mohler, J.L. (2000), "Desktop Virtual Reality for the Enhancement of

## 7. Project Objectives:

The Gallery of Art & Design, as stated in its Strategic Plan (May, 2003), continually seeks to make its collection available to a larger number of students and University academic units. In its 2003-2004 and 2004-2005 Assessments, the Gallery identified the student body of NC State as its key constituency. Furthermore, the Gallery operates as a unit under the auspices of the Division of Student Affairs. Thus, the ultimate goal of the Gallery of Art & Design is to make the collection available at all times to all NC State students and faculty for research purposes. To achieve this goal, the Gallery would like to increase the opportunities for academic contact and research with objects in the collection.

University faculty frequently comment that the allure of using the collection in an academic, classroom environment is tempting but difficult for the following reasons:

- 1) A limited amount of class time per semester. A field trip across campus to the Gallery of Art & Design (and thus, a day out of the classroom) is just not feasible.
- 2) The need to adhere to a syllabus that is not conducive to amendment based on what exhibition may be at the Gallery of Art & Design during a particular semester. While the Gallery plans its exhibitions 2-3 years in advance, changes sometimes arise that make including class visits to the Gallery in syllabi difficult.
- 3) The Gallery of Art & Design's insurance requirements stipulate that only 5-6 individuals are allowed in storage at a particular time. Thus, the Gallery cannot accommodate a 50-minute class of 30 students. This project would allow for entire course groups to view and react to objects in a group setting.

An example of the above is indicated by one professor's comments in which the professor wrote:

...[i]t occurred to me while I was walking back from the Student Center that the Gallery is an especially rich resource for undergraduate research projects, as well as master's projects, in disciplines ranging from the obvious ones (design and textiles) to the less obvious (sociology, anthropology, history, women's studies, international development, political science, technical communication, religious studies, Asian studies, Middle East studies, Africana studies, film studies, furniture making, wood and paper science, chemistry, and technical communications). As we discussed, it would be great if you could have an exhibit showcasing the resources of the Gallery and how they could be used for research - how to search the database, etc. Posters or something with examples of Gallery-based research projects would be nice. I was looking at the titles of the essays in past exhibit catalogs, and I think that some of them could serve as examples to give students an idea of how research projects could be based on Gallery materials - along with any master's theses available that were based on Gallery materials. David and George might have better ideas than I do of

how to optimize/publicize the Gallery as a research resource."

Thus, the Gallery is perceived as a valuable learning and resource asset. Chancellor Oblinger has even stated that the "Gallery of Art & Design is NC State's best-kept secret." The challenge for the Gallery lies in how to make its assets more readily available for use in research and learning. The Gallery of Art & Design has determined that the utilization of technologies such as immersive imaging would do a great deal to make the collection available to a larger number of students and faculty of NC State. The Gallery believes that the ability to take its collection and exhibitions "into the classroom" will increase the use of these resources exponentially. Since the Gallery of Art & Design's collection of over 17,000 objects spans the academic spectrum at NC State, the availability of the Gallery of Art & Design's resources in this manner has the potential to benefit all students and faculty.

---

#### **8. Estimated number of students affected:**

Short-Term Impact of Project:

1) The Gallery will use the technology in classes that currently utilize the collection. For example, Honors 101 is currently using the Gallery as a home base in its explorations of art in the Triangle. There are plans to have a similar arrangement with this class in the Fall of 2006. The Gallery plans to offer examples using immersive imaging for this class. The class generally has 10-12 students per semester.

2) The Gallery will offer these resources to a number of other classes that currently use the Gallery's resources on a regular basis. Examples include:

ADN 272, 273 & 311

REL 300 (4 sessions visited last year)

TAM 271

ID 202

ARC 590

MDS 494

Long-Term Impact of Project:

1) With a collection that covers virtually every academic discipline on campus, the Gallery's resources could apply to most students that attend NC State.

---

#### **9. Outcomes of the Project:**

This project has two primary outcomes:

1) To increase students' academic exposure to art & design and;

2) To increase the availability of Gallery of Art & Design resources available to the faculty of North Carolina State University in order to increase the use of these resources in academic settings.

The first outcome will contribute to a more complete education for students at NC State, as exposure to the arts provokes conversation and inquiry about the creative process, design of objects and diversity, among other things.

Currently, the GAD's resources are difficult to access and many students graduate from the University without even knowing about or experiencing the rich resources provided by the Gallery of Art & Design.

The second outcome will contribute to student learning because of increased use of the Gallery's resources in academic courses on and off-campus. The Gallery has been told by numerous faculty members that its resources would be used if made easier to access. This project would make the resources more accessible.

---

#### **10. Project impact on NCSU:**

The learning environment on NC State's campus is best served by improved student access to all resources on campus. The Gallery of Art & Design sees QTVR technology as an affordable way to contribute improved access. The Gallery of Art & Design believes that this project could serve as an example of the use of an affordable technology that has scalability across departments on campus. At other universities, QTVR has been used in the teaching of curricula as diverse as art, engineering and medicine. John Williams intends to document the project as it progresses and will produce a manual demonstrating how the process works, how movies are made and how the technology may be used in other areas. The Gallery of Art & Design, as a part of a large land-grant, Research-I institution seeks to be a leader in the museum community in terms of using innovative technologies. Currently, immersive imaging is used by only a handful of large museums. By utilizing such technologies, the Gallery will set an example for other, similar small museums. This would reflect well on NC State.

---

#### **11. Project Assessment Plan:**

The Gallery of Art & Design will primarily measure the effectiveness of this project by monitoring the use of Gallery resources in the classroom. The Gallery feels that it can safely assume that any increase in the use of its collection is an increase in the use of its resources for the purpose of student learning. The number of hits on pages containing QTVR objects and exhibition tours can also be monitored. Those originating from ncsu.edu IP addresses can be assumed to originate from either students or faculty. This is not in itself sufficient for measurement of the outcomes in this project however. Many students and faculty will access this information from off-campus. The Gallery intends to supplement this information by requesting that faculty that use GAD's QTVR resources allow us to give students a brief survey that will provide information about their reaction to this technology in a learning environment. We would like to know the answers to questions like:

- 1) Did you find this technology easy to use?
- 2) Do you feel that you could have learned more about this object by seeing it in person?
- 3) Will you visit the Gallery of Art & Design to see more exhibitions?
- 4) How do you think this technology could be applied elsewhere?

In the class planned for Fall 2006 (Hon 101), the Gallery is directly involved in the planning of this class, so there will be no problem in the delivery of a survey.

---

## **12. Staffing and Support:**

John Williams will receive the funds dispersed under this grant. John is currently on staff as a 30 hour per week employee. For this project, he will work an extra 10 hours per week for the first month to get the project started, the initial examples of photographs and movies made and on-line. He will work additional hours, as needed. Such need will arise at the beginning of each semester, when the Gallery puts new content on-line and when professors request objects to be made into QTVR movies.

---

## **13. Financial Support Requested:**

**EPA salary total:**

**SPA salary total:** \$3212.00

**Other salary:**

**Equipment:** \$1351.70

**Cost associated with assessment:**

**Other financial support requested:**

**Total Funds requested:** \$4563.70

**Additional Explanation of how funds will be used:**

SPA Salary Total= 60 hours for the creation of the initial content in the Spring of 2006, 40 hours for the creation of content in the Summer of 2006, 40 hours for the creation on content in the Fall of 2006 and 40 hours for the creation of content in the Spring of 2007. Also, the GAD requests 40 hours of staff time for John to record objects requested by faculty. This will allow for the creation of QTVR movies of approximately 140 objects and 15 exhibitions.

Equipment Total= \$469.95 for a Cool Pix 5000 digital camera  
\$221.95 for a Kaidan Quick PanIV Rotator Base  
\$109.95 for a Kaidan Pixi Manual Turntable  
\$254.95 for VR Works (Educational Version) software  
\$ 99.95 for a Nikon 5000 mounting kit  
\$194.95 for a Bogen professional tripod

---

## **14. Funding Breakdown:**

**Total funding requested for fiscal year 2005-2006:** \$2811.70

**Total funding requested for fiscal year 2006-2007:** \$1752.00

---

## **15. Staff Support and/or Technical Support Requested:**

---

## **16. Timetable for Implementation:**

December 2005: Purchase equipment and devise basic protocol of process in shooting objects and exhibitions.

January 2006: Shoot the initial exhibitions (2 total) and 50 objects that the staff chooses as important examples from the collection and put online.

May 2006: Add an additional 30 objects to the QTVR collection and put online.

June 2006: Finalize plans to use technology in HON 101 class.

July 2006: Shoot objects requested by faculty for use in Fall 2006 courses.  
Shoot an additional 30 objects to add to the QTVR collection and put online.

December 2006: Shoot the final 30 objects to be added into the collection and put online.

June 2006: Submit proposal

---

### **17. Human Subjects Protection:**

If your proposal project involves research using human subjects, you will need approval from the Institutional Review Board for the Protection of Human Subjects in Research (IRB) prior to final approval. IRB information is available at <http://www.ncsu.edu/sparcs/irb>



---

### **18. Proposal Release:**

By submitting this proposal the applicant grants the LITRE Advisory Board permission to make this proposal available as an example for future grant applicants. All personal information will be removed if this proposal is used as an example.

