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NDSU Student Technology Fee Action Plan Request

I. Action Plan Introduction and Authorizations

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Office of the Vice President for Information Technology

NDSU ORGANIZATION OR UNIT Department of Theatre Arts			
TITLE OF PROJECT **Digital Projected Scenery and Effects**			
Project Duration (3 years maximum)	**From: Fall 2017**	**To: Fall 2017**	
Type of Project (Check one)	**New X**	**Previously Submitted**	**Renewal**
Total Technology Fee Request $16,500.00			
Project Director **(Must be NDSU faculty or staff)** **Mark Engler**	**Campus Address: 126 Askanase Hall** **Phone: 1-7706** **Fax:** **E-mail: mark.engler@ndsu.edu**		
Name (Type or Print)	**Signature**	**Date**	
Project Director Mark Engler		3/3/17	
Unit Head John Miller		3-3-17	
IT Division Consultant Lincoln Bathie	**Signature**	**Date** 3/3/17.	

Executive Summary (maximum of 175 words)

Digital projected scenery, projected video and projected imagery is rapidly becoming commonplace in all forms of live entertainment. The department of Theatre Arts is requesting funding to purchase video projectors, hardware, and software to incorporate this technology into our live performances and coursework.

The Technology Fee Advisory Committee will only accept for consideration Student Technology Fee Action Plan Request forms which are fully completed and signed, and whose Project Directors have no past due reports on previously awarded projects as of the current submission deadline date, according to the guidelines listed in the Instructions, pages 1 and 2.

Technology Action Plan Request forms will be opened and reviewed after the submission deadline.

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II. Project Overview

1. How does this project meet student needs?

Projected video has become an important design element in live entertainment (theatre, concerts, opera, dance, etc.) The equipment and software needed to create a projected set or other digital design is somewhat specialized and expensive. It is important for students who wish to pursue a career in the entertainment industry have the opportunity to train with this technology.

2. What audience does this project directly serve? What audience is indirectly served? How many students are affected?

Directly, this project will affect all Theatre majors and minors plus those students who enroll in Stagecraft (THEA 270), Theatre Practicum (THEA 210), Lighting and Sound Design (THEA 276) and Opera Workshop (MUSC 319), approximately 100 students. Indirectly, this technology will enhance the experience of all students and community members who attend NDSU Theatre and Opera productions. On average, over 1000 NDSU students attend Theatre NDSU productions annually.

The School of Music is also interested in this technology. Dr. Webber in music would like to use it for a choral concert next spring and the Opera program is excited to use it in their productions as well.

3. For projects that target a subset of NDSU's students, please describe the possibility for broader application in the future.

There are several opportunities for this technology to reach students and programs outside the Theatre and Music departments. Visual and performance artists often use video and projected video in their art, Architects can create dynamic and stunning visuals on architectural elements by mapping video onto surfaces, and students interested in video and film creation would definitely benefit from having the opportunity to use this equipment.

I hope to attract many students outside the theatre department who might be interested in this technology and want to explore its potential in a variety of applications.

4. Describe both the immediate and long term impact of this project.

The immediate impact will be to allow the Theatre program to incorporate video elements into our productions. This may seem trivial on the surface, but we feel it is important to expose our students and audiences to the possibilities of this emerging art form. Long term, students who are interested in careers in Entertainment Technology will be better prepared to find jobs or continue their education in a graduate program.

5. Who will pay for ongoing expenses following the technology fee funded portion of this project (e.g., who will replace hardware or software after it has reached its end of life)?

Future upgrades to this equipment will be handled by the Department of Theatre Arts or the Division of Performing Arts.

6. **Describe how this project will follow NDSU's best practices in information technology. (Please make sure the NDSU IT Division staff you consulted signs in Part I of this form.)**

Purchase of this equipment will allow for the better training of our students in preparation for employment in the industry.

The Mac computers will be managed by ITS desktop support.

7. **What service on campus is most similar to the one proposed here? How does this project differ?**

ITS does have projectors available for check out and does have video editing facilities in the media center. However, the projectors available are small and designed for classroom use. They are not bright enough, robust enough, nor do they produce an image of sufficient quality and size for most live performances.

The Technology Learning & Media Center has good facilities for video editing and video creation but we need equipment that can be moved and installed in different locations for extended periods of time. I expect that we will utilize the media center when possible for content creation but we cannot accomplish all we need to with just the media centers facilities.

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III. Project Description (5 pages maximum)

Include information on the background of this project: how did it come to fruition?

The Department of Theatre Arts is requesting funding to purchase video projectors, computers and software to incorporate digital design elements into our productions and curriculum.

Over the last couple decades, video projection has become a common design element in concerts, theatre, dance, opera, and other forms of live entertainment. Universities are now offering Master of Fine Arts degrees in video projection design. The NDSU Theatre department and the School of Music are excited to explore this technology in their productions. We also feel it is important for us to add this component to our curriculum in order to remain competitive with other universities in the region.

The initial equipment cost is what has kept us from investing in this technology on our own. Individual components are often reasonable and some of the equipment could be purchased within our annual budget. But since we're starting from scratch, it hasn't been practical for us to invest in the technology.

There are three basic components to a video projection system; the projector, the computer and the software. The projectors are the most expensive part of the system. An inexpensive projector can cost just a few hundred dollars but a projector suitable for use in a theatrical performance costs several thousand. There many factors that go into selecting an appropriate projector but the most important is how bright it is. Projectors need to compete with the stage lights and are often used to project onto surfaces that aren't optimal for video. A bright projector can help compensate for those factors. The classroom projectors that ITS has available for check out are rated at 3000 lumens. I have tried to use these small projectors before and the results have been poor. A 5000 lumen projector is the minimum needed for theatrical use but brighter is almost always better. Most projectors used in Broadway productions, concert tours and other professional events are rated at 10,000+ lumens. Other factors that go into selecting projectors are throw distance, desired image size, contrast ratio, etc. but finding a projector that is bright enough is often the most important consideration. I've priced out three different projector models for this project. Without knowing exactly how they will be used in the future, I've tried to pick models that I think will give us the most flexibility.

The computer used to create and play back the video is less important. The only requirements are that it have decent storage, a good video card, and lots of memory. I have decided to go with a Mac based system because we use a Mac for our audio playback and because Mac systems commonly used in professional theatre. On the software side, Final Cut Pro for editing, and two different software packages for playback. Both of which are widely used in the industry and offer different features and capabilities.

In order to facilitate learning and to give the most students an opportunity to experiment with this technology, I'm also requesting funds for some smaller projectors that can be installed in our light lab. The theatre program has a 1:6 scale model of a theatre in which we can experiment with light in a theatrical space. It has its own lighting fixtures, dimmers and light board. We use the lab for teaching lighting design and it could be easily adapted to teach video projection.

I am hoping that once we have an opportunity to experiment a little and learn the new software that we can offer workshops and demonstrations for students in other departments who might be interested in the possibilities of video projection. In particular, I believe that students in the Art and Architecture will be interested in this technology. Video projection is common in both disciplines and I think that many students and faculty would be interested exploring the possibilities of this technology.

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IV. Milestones

List the date for each project milestone. These milestones should represent the ***significant*** accomplishments that will be associated with the action plan. For each milestone, please indicate its expected outcome and the means for assessing that outcome. (The table may be extended as needed.)

	Date	Milestone	Expected Outcomes	Means of Assessment
1.	Spring 2017	Purchase of equipment and begin integrating components into the Light Lab and Design Studio		
2.	Fall 2017	Installation and training complete	Workshops and or demonstrations for students to show them the new technology.	
3.	Spring 2018	Integrated into the curriculum of THEA 276	Expose students to video as a design element in theatrical performance	Students in 276 successfully create projected design elements
4.	Spring 2018	First use in theatrical performance	Digital design elements used in production of "Tartuffe"	
5.				

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V. Supporting Documentation

(double-click on the form to begin entering data)

1.	NDSU ORGANIZATION OR UNIT
2.	PROJECT DIRECTOR(S) (Must be NDSU faculty or staff)

3.	SALARIES AND WAGES			
	Personnel description	Number employed	Number of months	Funds Requested
	A. Staff			
	B. Graduate students			
	C. Undergraduate students			
4.	TOTAL SALARIES AND WAGES			$0.00
5.	FRINGE BENEFITS			$0.00
6.	TOTAL SALARY, WAGES AND BENEFITS			$0.00

7.	EQUIPMENT	$16,500.00
	Describe Equipment specifics in the Budget Justification section	

8.	MATERIALS AND SUPPLIES	$0.00
	Describe Materials and Supplies specifics in the Budget Justification section	

9.	TOTAL TECHNOLOGY FEE REQUEST	$16,500.00

10.	MATCH (Describe in Match Section)	$1,900.00

11.	TOTAL PROJECT EXPENDITURE	$18,400.00

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VII. Budget Justification

Describe how you arrived at the budget totals in Section VI, Budget.

You are expected to follow all applicable university policies and procedures regarding salary expenditures.

You are expected to follow the state-approved purchasing guidelines when purchasing materials and supplies.

- Equipment: List name, estimated cost and quantity of each item and explain why it is important to the project. Include installation and maintenance costs in your estimates.

- Materials and Supplies: List name, estimated cost and quantity for each non-equipment items and explain why it is important to the project.

I have not solicited quotes from vendors for projectors and equipment because prices fluctuate frequently and sales can offer significant savings. I have sourced pricing online for this estimate and will get quotes from vendors if this project is funded, per University policy. I will also look for alternate models before purchase to make sure we get the best value for our investment. ITS has offered to help source projectors.

PROJECTORS:

Two Viewsonic LS810 short throw projectors. $2700 each	total: $5300
Two Panasonic PT-EX520LU projectors. $2500 each	total: $5000
Two Optima ML550 Pico projectors (lab projector) $500	total: $1000

Projector Total: $11,300

Computers

iMac computer for content creation and editing	total: $3000
mac mini (lab computer for playback)	total: $1400

Computer Total: $4400

Software

Final Cut Pro (editing)	total $300
Isadora (playback)	total $500

Software Total: $800

Departmental Purchased hardware and Software

Qlab (software for playback)	total $600
Two Triplehead2Go video splitters	total $500
Monoprice HDMI video over cat6 extenders (x2)	total $400
Cat6 cable, HDMI cable and adapters	total $100
Computer workstation for Light Lab	total $300

Department contribution Total $1900

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VIII. Budget Match

1. Attempted Budget Matches:

2. Actual Budget Matches:

The Department of Theatre Arts and the Division of Performing Arts has allocated $1900 for this project. We will cover any additional expenses for hardware or materials not included in this request. We will also cover future maintenance and replacement costs.

3. Additional Budget Match information: