



# UNIVERSITY of WASHINGTON

## Student Technology Fee Committee

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### CARTAH 3Space Laboratory

Proposal ID 2009-002-1

Permanent Link <http://techfee.washington.edu/proposals/view/2009-002-1/>

Department CARTAH

Non-core No restrictions

First No

AccessApplication?Student No  
Initiated?

#### Abstract

The 3space laboratory proposal is a request for funds for a much needed overhaul of our 3D graphics environment into a open and modular interdisciplinary 3space exploration laboratory that is future-ready and able to provide the kind of industry-level tools students need for a diverse set of interactive and 3D media fields. The space is to be populated with an essential set of professional 3d graphics, video post-production, game development, interaction and design tools and will no longer service as a mere classroom computing lab, but will now be available to students through CARTAH. In regards to main components, there will be: a centralized 3d projection station for final mastering and exhibition of visual, interactive and aural works; haptics and interaction stations suited for game and interaction design development as well as feedback assisted software sculpting; stereo vision editors to facilitate real-time HD level editing of 3d work in 3d views; and animation and illustration stations geared toward modeling and animation pipelines. Many of the peripherals have development kits, so the extension of what these system can do beyond what is stated above is only limited by students' imaginations.

#### Background

CARTAH, the Center for Advanced Research in the Arts and Humanities, serves students, staff, and faculty of the University of Washington. Our mission is to provide the University of Washington community with advanced technical resources for work in the arts and humanities. CARTAH is open to all students of the University of Washington, with preference given to students in the arts and humanities. CARTAH is a project-based center. Students come to us with research ideas that require equipment and expertise that is otherwise often only found in restricted labs, if at all. CARTAH provides help and expertise in formulating and completing complex student based animation, video, audio, print publishing and in various other media.

#### Benefits

This laboratory is designed for and around students who are working in fields that require anything from novice to advanced 3D based toolsets. The output gamut of such work includes stereo video, 3D animation, haptics research, gaming, physical models and interaction design, yet because of the amorphous nature of many of the features and peripherals in 3D workflows, this toolset can ultimately be imagined into a variety of seemingly unrelated fields (psychology, medicine, anthropology, music, etc.). The proposal design is based on student projects, comments and requests, the current availability of these technologies on campus to students, the ability of our facilities and staff to support such projects, and the advancements of the 3D medium and an assessment of its value in the future of the arts and humanities.

PROVIDES UNIQUE LABORATORY SPACE AND EQUIPMENT

Currently most of these technologies are unavailable to students, especially in such an open-access format as CARTAH provides. The 3Space Laboratory will provide a unique space for students to engage in their own work in the intersection of interaction and vision technologies, and possibly to find collaborative avenues of further research and invention. The design of the space comes from a re-evaluation and technological renovation of a 3D graphics computing classroom that without upgraded computing can no longer support 3D work. This proposal will allow the necessary upgrades and will open up access to the CARTAH community so that it can be more fully utilized for more varied projects and an expanded student clientele. The proposed notion is to steer towards a collaborative model, clustering a smaller number of computers and providing each machine with a specific role in this cluster. The laboratory is designed around a variety of student modalities and project sizes and creates a space where experimentation and learning can function seamlessly for working on curricular, independent and/or group projects.

#### SUPPORTS PROJECTS IN EMERGING TECHNOLOGIES

Much of what can be accomplished in such a laboratory is paralleled with recent emerging technologies in major media institutions: the first 3D television channels in Japan and a massive outpour of American movies now presented in 3D; haptic and innovative mixed reality game systems, for example the Wii, Rockband, etc.; a resurgence of virtual reality research due to advances in photo-realistic graphics especially for use in telemedicine and game design; a decrease in cost and increase in availability of systems such as rapid prototyping for physicalization of 3D models; and ubiquitous tactile graphical interfaces such as in the iPhone and multi-touch displays. This major shift in ubiquity regarding technology towards the 3D tactile and visual signal a growing market for such technologies. This will give UW students a major advantage as they will have hands-on access to numerous workflow templates as used in major production houses. The modular design of the laboratory also works to serve research into technology and pathways that have yet to be discovered and provides the students with the level of flexibility and access necessary to do so.

#### WORKSTATION BENEFITS

The stations were designed to incorporate a flexible and future-forward model for 3D based work, yet will also allow for 2D work and other CARTAH-supported media projects and are designed for a wide-range of expertise. The design calls for one central presentation station and 4 sub-clusters of 4 workstations each: one stereo video editor, one haptics station and 2 animation nodes.

##### Presentation/Projection Workstation

This station will be connected to an HD/3D projection system and serve both presentation and mastering needs for final output of 3D visual media. This will provide students with both a platform to finalize and to present their work at a very high level of quality. The output workflow of this station will also match that of our current portable 3D stereo video system to create a seamless transition for presentation of large-scale formats.

##### Stereo Video Editors (x4)

These workstations will provide real-time stereo editing for 3D visual feedback when working on projects intended for 3D vision output. The stations will be 2D capable as well and provide a software set for integrated video and graphics workflows. These workstations are otherwise unavailable to students on campus and provide students with unparalleled access such workflows. They will provide the basis for real-time vision production and research and allow for an extended methodology and toolset in doing so. They will better accustom students to working with stereo graphics visualization and interaction, what is becoming a standard paradigm of interaction across multiple fields, and will set them apart from their peers entering similar job or research markets.

##### Haptic/Interaction Workstations (x4)

These stations will be optimized for real-time interaction using haptic devices that can provide 3D tactile feedback to the user. Whether the context be in sculpting 3D models, interacting with a responsive 3D visual/aural piece or in the design of novel techniques for interaction, this will provide students with unprecedented control and interaction mechanisms for both the output and design of projects. Many of the peripherals incorporated with this station can be networked or hot-swapped to other machines in the cluster to even further extend the benefits of this workstation's design.

##### Animation/General Use Workstation (x8)

These stations a base set of tools for professional animation, modeling and illustration workflows and serve as a complement to the standard computing software set across the CARTAH labs. They will also serve as non-3d overflow from the main CARTAH Open Computing Laboratory and allow for our ability to support even more projects simultaneously than ever before.

All Stations will provide students with bluray burning and viewing support via compatible drives and Toast software, Parallels for inter-platform software workflows, Autodesk Maya for 3D modeling and animation, stereo headphones, upgraded RAM, eSATA hard-drive compatibility, Final Cut Studio and Adobe Creative Suite for Audio Visual pipelines, 3D mice and wiimotes. We will also provide 2 hdv decks for tape based hd work that will be hot-swappable for any station a render management system and the soon-to-be-released high-end composition software, Autodesk Toxik.

## Student Access

There are 3 primary ways for students to access the CARTAH facilities and equipment:

CARTAH PROJECT PROPOSAL- Typically these are research centered Arts and Humanities ventures, however, we are always looking for interesting ventures outside of our current

vista to support. Practically all proposals submitted are accepted. In the case the proposal is not accepted the approval committee issues a statement or questionnaire to the student, addressing the issues and allows for an updated resubmission. Once approved the student has access to the open labs, the standard CARTAH inventory and is allowed to make reservations for studio access and training sessions for advanced equipment use. CARTAH provides a full-time technical staff, trained and willing to work with students to learn the tools necessary to complete their projects. Students are also encouraged to submit suggestions and requests for improvements in infrastructure or for various supplemental needs.

**DXARTS EQUIPMENT & CURRICULUM** - CARTAH is also affiliated with the DXARTS program, in that the coursework of the DXARTS is a synergistic training with the equipment and research perspectives of the CARTAH institute. There are a number of dedicated slots in all DXARTS courses for non-majors, as it is our goal to maintain an interdisciplinary perspective with the work we are involved in. Via non-major paths in DXARTS curriculum, another portion of the University community is allowed access to CARTAH facilities beyond the restriction of a research proposal. They may use the equipment for coursework, or for their own independent research, the latter of which is the most often case. CARTAH clients also have access to any DXARTS equipment that is not currently reserved for coursework.

**UNIVERSITY AND COMMUNITY INVOLVEMENT** - The access can be obtained in a third way, through community performance and involvement. Often, CARTAH clients perform or present their research to the larger student body, or in formats external to the university community. CARTAH clients can also work on projects that require a cohort or students, as is often the case in video productions supported by CARTAH. By doing so, CARTAH's outreach and benefits expand campus-wide, and community-wide, allowing for greater forums of appreciation, understanding and scholarship in the Arts, Humanities and beyond.

## Available Resources

CARTAH is part of DXARTS, the Center for Digital Arts and Experimental Media. CARTAH is the gateway for students to most of DXARTS' resources, including not only equipment but also the expertise and experience of the faculty, students, and staff of DXARTS. CARTAH's ability to leverage the resources of DXARTS has allowed us to provide services that are simply unavailable to the general student body at other institutions. We currently have 3 full-time main campus technical staff, as well as 1 part-time Fremont lab shop manager. We also support workstudy employees and have several part-time undergraduate employees and graduate students that are fully trained to help to facilitate CARTAH projects via technical support and equipment maintenance. We also maintain our own inventory/checkout system as well as provide 24-hour email support.

## Installation Timeline

This equipment will be purchased as soon as funds become available.

## Departmental Endorsement

This proposal is enthusiastically supported by Shawn Brixey, the Director of both DXARTS and CARTAH, and was produced in direct consultation with all the students, faculty and staff of these programs. He fully endorses this proposal and this committed to help support the revision and reconstruction of this space for student 3space research here described in the event the proposal is funded by the STF committee.

## Student Endorsement

I am in full support of this proposal. I have had the opportunity to work extensively with the 3Space program at DXARTS and have witnessed first hand the innovation being created here. This is a truly unique program within DXARTS and is leading the cutting edge of stereoscopy and 3d animation in the country. Last year, thanks to a previous STF award, the first ever stereoscopic HD video course was taught through this program. It is this kind of innovative work in the arts that leads the way in the future of cinema and animation. It is the funds from STF that makes this innovation possible, and funding this project will ensure that UW continues to lead the way.

Erik Parr  
DXARTS & CHID undergraduate student

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As a visual artist and first year PhD student at DXARTS I write to strongly support the 3space Laboratory proposal. I consider this equipment vital to the University of Washington and DXART education missions as well and to my own artistic and educational goals. While I had previously used technology as a core competent in my artwork I came to this program specifically to gain access to state of the art facilities and the educational environment in which to understand and master these technologies. So while my aim is increase the rigor and depth of my artistic practice, this is contingent on gaining access to resources that are not available outside of a dynamic research institution.

My specific artistic goals center on the use of current and emerging technologies including 3D environments, rapid prototyping and brain computer interfaces to create visual, installation and performance art that provide powerful and tactile examination our sense of time, nostalgia, history and the future. These goals include working with the greater community of people and facilities at the University of Washington, for example the Mechanical Engineering and Psychology Departments, as well as our own labs that are designed

specifically to support our artistic endeavors. The 3space Laboratory as proposed will allow me to develop and execute artistic experiments and projects that would be impossible otherwise. I look forward to being able to move forward with these tools with great passion and enthusiasm. Finally, the value of these fully equipped labs means that I, along with those in DXARTS, as well as our collaborators, and in many cases others in the University community through CARTAH and other avenues of educational exchange and outreach, will be able to play a vital role in the development of transformative, challenging and technologically robust work.

Meghan Trainor, 1st Year Doctoral Student, Digital Arts and Experimental Media (DXARTS)

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A 3space Studio at the Center for Digital Arts and Experimental media (DxArts) is important for the advancement of a unique artistic research in that it allows students to interact with emerging technology as it becomes available, in a setting which encourages further innovation of said technologies.

As an undergraduate student studying both traditional and digital arts it has been most vital for my academic progress to have access to the types of media and technologies that the Center for Digital Arts and Experimental Media (DxArts) and CARTAH provide. During my education at the University of Washington, I have been able to take a 3D Art class sequence within DxArts that introduced me to various cutting edge technologies, introduced a methodology for its use, and encouraged to find new directions for the use of these technologies in the creative process. I was also able to implement my ideas with the equipment vital to this line of artistic inquiry because of the equipment at the DxArts labs. This experience has opened my mind to a creative dialogue that has altered the course of my educational career and allowed me to find new ways of expressing my artistic ideas, so much so that I plan to continue my studies in digital media into graduate school.

Sincerely,  
Caroline L. Alexander  
Senior - Painting and Drawing degree program - University of Washington

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I am writing to express my support for the Projection/Presentation station proposed by DXARTS for STF funding. I am a third year PhD student in DXARTS. My doctoral art research at UW has largely been facilitated by the advanced, experimental and innovative technical infrastructure that DXARTS has built in collaboration with STF. It serves as an integral part of one of the most exciting research communities I have ever witnessed. Looking ahead, the Projection/Presentation station is essential to completing my work as a doctoral student at UW. It will enable advanced research in stereoscopy and groundbreaking applications of 3D technology in live performance. In addition, it will empower me and other students to extend the work we are doing at UW into the larger research community via presentations at national and international festivals and conferences. Thank you for your consideration.

Sincerely,  
Heather Raikes  
DXARTS

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It is my hope that by sharing a small portion of my exciting and challenging experiences at the UW that the necessity to continue to fund the Center for Digital Arts and Experimental Media (DXARTS) and its open-department facility the Center for Advanced Research and Technology in the Arts and Humanities (CARTAH).

My work tends toward the cinematic, whether it be in video or film, and as an undergraduate at DXARTS, I have been fortunate enough to be provided with equipment at a level of technological sophistication that more often trumps that of similar facilities at institutions such as UC Berkeley and NYU, the latter having seen first-hand. As an experimental filmmaker and storyteller in the age of YouTube, I cannot emphasize enough how crucial it is that my work and others like it be produced with the highest level of equipment and professionalism. And if the UW can continue to provide the former, rest assured that my fellow students and I will continue to provide the latter as best we can.

What is not clear from the preceding, is that for the first four of my years as an undergrad I was not a DXARTS major. However, as a non-major I still had upper-echelon access to this equipment for personal projects through CARTAH. It is largely because the department makes such an effort to reach out to students such as me that I was able to continue my educational pursuits after my portfolio was initially rejected, and ultimately put together a compelling enough body of work that I was able to be re-accepted at a later point. Without access to such high-end video production equipment, it is no exaggeration to conjecture that my education wouldn't be half as substantial as I've been fortunate for it to have been.

For the sake of those many students whose passions and professional ambitions push them to the front of modern media and beyond--and so that many more might be able to join them--I fully and enthusiastically endorse this proposal.

Sincerely,  
Erik LeDrew  
Senior, Digital Arts and Experimental Media

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As a Senior in the DXARTS program and recipient of the DXARTS Undergraduate Research Scholarship, I emphatically support this proposal. The support of STF sponsorship has been invaluable to my education over the past four years in allowing exposure to many tools at the leading edge of the ever expanding field of experimental media research. Through

access to these research tools, I have been able to contribute to this growing body of knowledge that doesn't find a home in other disciplines currently. My research focus in the sonic arts and spatialization has been aided by the unique tools found nowhere else on campus, and this proposal would enable further research in the merging of haptic interactions and cross-modal perception research in 3-D composition space. This area of study has already shown promise in fields of psychoacoustics, haptics research, sound composition, installation and performance, with further future cross-disciplinary potential presented with the addition of these research tools. My past work with the Bioengineering department expanded the dialogue of arts research to the domain of haptics research and the knowledge base from Bioengineering students across campus was able to critically inform the work done at DXARTS. This proposal would directly facilitate such collaborations and cross-fertilization for a wider group of students, just as past proposals have brought computer programmers, ethnomusicologists, philosophers, physicists into DXARTS labs for a critical and fresh dialogue. As both a student and member of the DXARTS tech staff, I am committed to ensuring that students take full advantage of the opportunities offered by proposed technical additions in their innovative work that continually propels arts research forward for the University of Washington.

Sincerely, Michael McCrea, BFA Student, Center for Digital Arts and Experimental Media DXARTS

I am writing this letter to express my enthusiasm and endorsement for the proposal of a state of the art 3D laboratory for the Department of Digital Arts and Experimental Media. As a senior undergraduate in Computer Science I have participated actively in DXARTS classes as well as doing research in CARTAH. CARTAH and DXARTS hold valuable roles in providing a unique cross-disciplinary community promoting revolutionary creative work. The Student Technology Fee enables the department to provide the resources that enable multidisciplinary students such as myself to step outside the bounds of our departments to collaborate and create. As my work involves use of cutting edge Human Computer Interaction techniques as well as the production of stereoscopic films I rely on the resources provided by the department to conduct my work. To this end I fully endorse the proposed equipment and am excited to unlock it's potential.

Jim George, Computer Science & DXARTS Undergraduate

## Items

Below are the items making up the current proposal. The asterisk (\*) beside items signify that they were approved by the committee. This however was not implemented correctly for our database before 2005, so earlier years may not show this.

Click an item's title to view details on that item, or [show all item details](#).

Title	Type	Price	Qty	Subtotal
* <a href="#">Mac Pro w/stereo card for presentation s</a>	macintosh	\$8,336.00	1	\$8,336.00

**Location:** Raitt Hall - 105

**Description:** \* Two 3GHz Quad-Core Intel Xeon

- \* 2GB (2x1GB)
- \* 320GB 7200-rpm Serial ATA 3Gb/s
- \* 750GB 7200-rpm Serial ATA 3Gb/s
- \* NVIDIA Quadro FX 5600 1.5GB
- \* One 16x SuperDrive
- \* Apple Cinema Display (20" flat panel)
- \* Apple Mighty Mouse
- \* Apple Keyboard + User's Guide
- \* AirPort Extreme Card (Wi-Fi)
- \* AppleCare Protection Plan for Mac Pro (w/or w/o Display) - Auto-enroll

**Justification:** This machine will be used to control the 105 3D projection system as well as work as a mastering station in the final stage of student a/v work. The stereo video card upgrade is necessary to support both pc and mac 3d stereo output in real-time at HD quality.

* Dell XPS 630	windows-pc	\$1,310.00	1	\$1,310.00
<b>Location:</b> Raitt Hall - 105				
<b>Description:</b> A high-performance pc for linux and windows peripherals not supported via bootcamp.				
<b>Justification:</b> This PC, which will also be connected to the projection system will serve as a point at which students can test and master their work for pc specific hardware and software that may not be fully supported in bootcamp or parallels.				
* Quadro FX 3700 Video Card for PC	Hardware	\$940.00	1	\$940.00
<b>Location:</b> Raitt Hall - 105				
<b>Description:</b> Stereo capable video card				
<b>Justification:</b> This card is required for operation of the stereo projection system from the pc.				
* Blu-ray deck for PC	Hardware	\$665.00	1	\$665.00
<b>Location:</b> Raitt Hall - 105				
<b>Description:</b> Blu-ray burner and player for the PC				
<b>Justification:</b> This will allow presentation and large format storage for the projection pc.				
* 8 gig RAM Upgrade kit for Mac Pros	memory/ram	\$440.00	11	\$4,840.00
<b>Location:</b> Raitt Hall - 105				
<b>Description:</b> 3rd party ram upgrade kits				
<b>Justification:</b> This is much less expensive than buying direct from apple. 8 gigabytes of ram is recommended for most 3d applications, however 16 gigabytes is required for most real-time stereo video workflows. This will accomplish those tasks for the macpros in the lab.				
* DepthQ HD Projector	projector	\$7,150.00	1	\$7,150.00
<b>Location:</b> Raitt Hall - 105				
<b>Description:</b> Stereo 3d projection system up to 720p				
<b>Justification:</b> This will provide a projection presentation format for the laboratory for both mastering and exhibition. It will work for both 2D and 3D stereo outputs.				
* 4-1 dvi kvm switch	Hardware	\$222.00	1	\$222.00

**Location:** Raitt Hall - 105

**Description:** DVI Switch for projection system

**Justification:** This will allow seamless switch between sources for projection, which lowers risk of cabling issues and damage and eases workflow for students.

* <a href="#">2-1 DVI KVM Switch</a>	Hardware	\$176.00	2	\$352.00
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**Location:** Raitt Hall - 105

**Description:** DVI Switch for monitors (projection station and 3D Stereo editing workstations)

**Justification:** Will serve as a switching mechanism for the pc and macpro at the projection station and serve as a way of switching the source of the 3d monitors on the stereo editing stations. Adds seamless switching which reduces cabling issues, damage and increases ease of use.

* <a href="#">DepthQ Server HD</a>	Software	\$1,100.00	1	\$1,100.00
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**Location:** Raitt Hall - 105

**Description:** Stereo Presentation software for integrated depthQ projection system.

**Justification:** This will allow real-time 3D graphics and video to be displayed in stereo for mastering or presentation.

* <a href="#">Emitter for DepthQ</a>	Hardware	\$222.00	1	\$222.00
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**Location:** Raitt Hall - 105

**Description:** 3d stereo glasses controller for projection system.

**Justification:** This is required for the stereo projection system to work, as it controls the active 3d glasses.

* <a href="#">DVI Scaler</a>	Hardware	\$335.00	1	\$335.00
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**Location:** Raitt Hall - 105

**Description:** Will convert output from any s-video source into DVI

**Justification:** This will allow students to use dv, hdv, vhs, dvd and a variety of other formats for use with the integrated projection system.

* <a href="#">DVI Extender</a>	Hardware	\$530.00	1	\$530.00
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**Location:** Raitt Hall - 105

**Description:** Allows extension of DVI signals via cat-5 cabling

**Justification:** This is required for installation of the 3d projector onto the laboratory ceiling

* misc cables	misc-equipment	\$600.00	1	\$600.00
<b>Location:</b> Raitt Hall - 105				
<b>Description:</b> various video and peripheral cabling				
<b>Justification:</b> This will be needed for lab-wide interconnections to and from peripherals and displays.				
* Mac Pro w/stereo card for stereo editors	macintosh	\$8,336.00	2	\$16,672.00
<b>Location:</b> Raitt Hall - 105				
<b>Description:</b> * Two 3GHz Quad-Core Intel Xeon * 2GB (2x1GB) * 320GB 7200-rpm Serial ATA 3Gb/s * 750GB 7200-rpm Serial ATA 3Gb/s * NVIDIA Quadro FX 5600 1.5GB * One 16x SuperDrive * Apple Cinema Display (20" flat panel) * Apple Mighty Mouse * Apple Keyboard + User's Guide * AirPort Extreme Card (Wi-Fi) * AppleCare Protection Plan for Mac Pro (w/or w/o Display) - Auto-enroll				
<b>Justification:</b> These units have the required hardware that in concert with the crystal eyes workstation systems, will make available real-time hd stereo video editing workflows for students.				
* VX2265wm, 120Hz desktop LCD monitor	monitor	\$449.00	2	\$898.00
<b>Location:</b> Raitt Hall - 105				
<b>Description:</b> 120HZ LCD Monitor required for stereo editing systems				
<b>Justification:</b> This will provide the required display system for the 3d stereo editing stations.				
* Crystal Eyes Workstation with Emitter	Hardware	\$840.00	2	\$1,680.00
<b>Location:</b> Raitt Hall - 105				
<b>Description:</b> 3d stereo system with active glasses and short range emitter for laboratory environments.				
<b>Justification:</b> This is the central component for the 3d stereo video editing stations that allows students real-time playback and editing of 3d visual material.				

* <a href="#">Mac Pro for Haptic and Interaction Stati</a>	macintosh	\$3,830.00	2	\$7,660.00
<b>Location:</b> Raitt Hall - 105				
<b>Description:</b> * Two 2.8GHz Quad-Core Intel Xeon * 2GB (2x1GB) * 320GB 7200-rpm Serial ATA 3Gb/s * 500GB 7200-rpm Serial ATA 3Gb/s * NVIDIA GeForce 8800 GT 512MB * One 16x SuperDrive * Apple Mighty Mouse * Apple Keyboard + User's Guide * AirPort Extreme Card (Wi-Fi) * AppleCare Protection Plan for Mac Pro (w/or w/o Display) - Auto-enroll				
<b>Justification:</b> Provide the computing basis for the haptics and interaction stations.				
* <a href="#">24" LCD Cinema Displays</a>	monitor	\$999.00	6	\$5,994.00
<b>Location:</b> Raitt Hall - 105				
<b>Description:</b> Apple LCD Monitors				
<b>Justification:</b> The monitors provide superior visual abilities to standard lcd displays and provide the vision systems for all the animation and haptic/interaction stations in the laboratory.				
* <a href="#">Novint Falcon with Pistol Grip</a>	Hardware	\$222.00	2	\$444.00
<b>Location:</b> Raitt Hall - 105				
<b>Description:</b> Haptic device for game design and interaction				
<b>Justification:</b> This will provide a free SDK and peripheral for development of innovative interaction modalities, and will also act as a method of working with pre-existing 3d editing and sculpting software.				
* <a href="#">Emotiv Eloc</a>	Hardware	\$330.00	2	\$660.00
<b>Location:</b> Raitt Hall - 105				
<b>Description:</b> This is a Brain-computer-interface, commonly referred as a "mind joystick"				
<b>Justification:</b> This will allow students a very unique chance to work with a paradigm that is just beginning to breach the commercial market. This BCI device comes with an SDK that can be extended to a variety of applications and is a system for interaction experimentation.				
* <a href="#">IpsonLab</a>	Hardware	\$360.00	2	\$720.00

**Location:** Raitt Hall - 105

**Description:** An OSC over ethernet sensor controller. 64 switch inputs and 32 analog inputs.

**Justification:** These devices will allow students to build or integrate their own sensing and interaction devices into the haptic workstations with relative ease.

* <a href="#">Phantom Omni with Claytools</a>	Other	\$6,000.00	2	\$12,000.00
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**Location:** Raitt Hall - 105

**Description:** A haptic device and haptic sculpting software

**Justification:** These devices open up a variety of software plugins for 3d animation, rapid prototyping, CAD and modeling softwares for students to work with. The sculpting software is a specific plug-in that allows 3d animators to work with 3d graphics as if they were tactile pieces of clay. The device has a separate SDK that further extends these possibilities.

* <a href="#">open haptics toolkit</a>	Software	\$999.00	2	\$1,998.00
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**Location:** Raitt Hall - 105

**Description:** The Software Development Kit for the Phantom Omni Device.

**Justification:** This allows students access to unlimited possibilities of use in integrated 3d haptic interaction into projects.

* <a href="#">rhino</a>	Software	\$1,072.00	2	\$2,144.00
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**Location:** Raitt Hall - 105

**Description:** rhino is software to aid in the pipeline for rapid prototyping and computer-aided machining.

**Justification:** This will allow students a workflow for industrial output of objects or machine parts designed in the lab.

* <a href="#">cymouse</a>	Hardware	\$80.00	2	\$160.00
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**Location:** Raitt Hall - 105

**Description:** a head-mounted head tracking mouse

**Justification:** This will allow students to incorporate user head positioning into projects and also will allow them to use the device as a controller with modeling or animating.

* <a href="#">TrackIR 4 Pro</a>	Hardware	\$180.00	2	\$360.00
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**Location:** Raitt Hall - 105

**Description:** an infrared head tracking system

**Justification:** This will provide another, less-invasive method for head tracking and allows for control and integration of head position into 3d applications and projects.

* <a href="#">Mac Pro for Animation/ Illustration Stati</a>	macintosh	\$3,830.00	4	\$15,320.00
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**Location:** Raitt Hall - 105

- Description:** \* Two 2.8GHz Quad-Core Intel Xeon  
 \* 2GB (2x1GB)  
 \* 320GB 7200-rpm Serial ATA 3Gb/s  
 \* 500GB 7200-rpm Serial ATA 3Gb/s  
 \* NVIDIA GeForce 8800 GT  
 \* One 16x SuperDrive  
 \* Apple Mighty Mouse  
 \* Apple Keyboard + User's Guide  
 \* AirPort Extreme Card (Wi-Fi)  
 \* AppleCare Protection Plan for Mac Pro (w/or w/o Display) - Auto-enroll

**Justification:** These will provide the computing basis for the animation and illustration stations in the lab.

* <a href="#">wacom 12x12 intuos3 tablets</a>	Hardware	\$521.00	4	\$2,084.00
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**Location:** Raitt Hall - 105

**Description:** Wacom tablet and pen

**Justification:** This will provide tablet control for animation and illustration workflows.

* <a href="#">caldigit eSata PCIe cards</a>	Hardware	\$60.00	9	\$540.00
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**Location:** Raitt Hall - 105

**Description:** eSata cards for the mac pros

**Justification:** This will allow students to use the eSata protocol for fast file transfers and external drive playback

* <a href="#">fastmac bluray drive</a>	Hardware	\$650.00	9	\$5,850.00
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**Location:** Raitt Hall - 105

**Description:** Bluray burners/players for the mac pros

**Justification:** This will allow students to use blu-ray format as a playback and storage format for large file format media work.

* <a href="#">Sony MDR-7506 Headphones</a>	audio/video-hardware	\$99.00	9	\$891.00
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**Location:** Raitt Hall - 105

**Description:** headphones

**Justification:** This is our standard headphone choice at DXARTS/CARTAH based on quality and price and will provide the student with excellent audio monitoring.

* <a href="#">Wiimotes with charging stations</a>	Hardware	\$65.00	9	\$585.00
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**Location:** Raitt Hall - 105

**Description:** bluetooth wiimote

**Justification:** These will provide the student with a simple, configurable and ingenious method of interaction and experimentation as there are many open source toolkits that allow for the wiimote to be integrated into various new media and software platforms.

* <a href="#">Parallels Desktop</a>	software-operatingsystem	\$80.00	9	\$720.00
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**Location:** Raitt Hall - 105

**Description:** Parallels operating system virtualization software

**Justification:** This will enable the mac pros to work as linux, osx and windows boxes simultaneously, which is essential for the diverse nature of software and workflow available for 3D work.

* <a href="#">Space Navigator</a>	Other	\$99.00	9	\$891.00
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**Location:** Raitt Hall - 105

**Description:** 3D Mouse-like controller

**Justification:** Provides the student ergonomic and 3D control to a variety of software and interaction systems.

* <a href="#">Autodesk Maya</a>	software-graphics	\$250.00	9	\$2,250.00
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**Location:** Raitt Hall - 105

**Description:** 3d animation, modeling and rendering software

**Justification:** This is essential for any 3d workflow and is already heavily used by students in our current laboratories.

* <a href="#">Final Cut Studio</a>	Software	\$500.00	9	\$4,500.00
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**Location:** Raitt Hall - 105

**Description:** A/V Production Software

**Justification:** This software is essential for students working in video, audio and dvd pipelines and is one of the most heavily used software suites currently in our labs.

* <a href="#">Adobe CS4 Master Collection</a>	Software	\$525.00	9	\$4,725.00
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**Location:** Raitt Hall - 105

**Description:** integrated suite of multimedia software

**Justification:** This suite is the most utilized piece of software in our lab, currently. It provides an essential array of services to the student working in creative media that is unparalleled.

* <a href="#">roxio toast titanium 9</a>	Software	\$80.00	9	\$720.00
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**Location:** Raitt Hall - 105

**Description:** specialized burning software

**Justification:** This software provides a blu-ray burning/reading system for the mac pros.

* <a href="#">Sony HVR-M25U HDV Decks</a>	audio/video-hardware	\$3,217.00	1	\$3,217.00
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**Location:** Raitt Hall - 105

**Description:** HDV Tape decks for capturing hd footage to cpu

**Justification:** These decks will provide the essential service of transferring and storing media onto HDV tape, a common medium for HD cameras.

* <a href="#">Autodesk Toxik</a>	Software	\$3,845.00	1	\$3,845.00
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**Location:** Raitt Hall - 105

**Description:** High end compositing software with support for stereo graphics

**Justification:** This is a new industry level software coming out in March 2009 that will add substantial benefits to the students' stereo workflow including enhanced options for maya and stereo graphics editing and mastering.

* virtualvertex render site license Software	\$2,499.00	1	\$2,499.00
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**Location:** Raitt Hall - 105

**Description:** A Site license for render management software.

**Justification:** This will allow students to optimize and accomplish 3d graphics and video renders in a fraction of the time and is a necessary component in any 3D visual workflow.

<b>Requested Total:</b>	\$126,629.00
<b>Approved Total:</b>	\$126,629.00
<b>Funding Status:</b>	Partially Funded

## Comments

 [Add Comment](#)

Although I am the author of this proposal, it was written via my role as a staff member at CARTAH/DXARTS. I am however also currently a CSE student and alumni of the DXARTS BFA program, so I thought I should speak with my student hat on for a moment.

1. This proposal is much needed for the sake of supporting student 3d work. Aside from restricted access via architecture and computer science courses, there exists no space on campus for high quality 3D graphics work and definitely no infrastructure and equipment like that at CARTAH for a synergistic environment for such practice. The lab that will be refurbished is reaching the end of its ability to service the user end of a 3D graphics pipeline and this upgrade would also greatly increase the repertoire of projects that could be facilitated by such a space. The toolset requested spans many domains of study and can be widely adapted and connected in infinite ways.
2. The space provides a workspace for my own research activities as a student. I am currently vested in developing game-like systems for virtual reality rehabilitation software and would like to work with students in the arts for enhancing the content and graphics side of the engine. Without such a space for interdisciplinary discourse and broad student access my project would be out of luck and I would likely end up doing most of the work on my own, on a single machine, which would be disastrous when comparing what could be possible. Examples such as this were what I had in mind in writing this proposal: situations where a technical project required interdisciplinary supplement or an expanded set of working conditions that could not be directly fulfilled by students working exclusively in the same exclusive context/laboratory (in my case the neurobotics laboratory). Rather than upgrading the exclusive laboratory, it seems much better to have a centralized open access laboratory and one that has a community of researchers interested and possessing the vocabulary for actively engaging across disciplines.

As a student I fully endorse this proposal and the model it speaks for in developing spaces on campus for interdisciplinary research and for putting advanced toolsets into the hands of the student body.

Sincerely,

Johnathan Lyon

Understanding 3D software and hardware is already an essential skill in today's creative industries from motion graphics to audio engineering. Equipping students with the resources to learn and experiment in 3D is a wonderful idea, and DXARTS is a department perfectly suited to stewarding those resources and training students. As a working professional and a PhD candidate at DXARTS I heartily endorse this proposal.

Noel Paul

As an junior in the DXARTS program, I'm excited about the prospects of such practical high-end equipment becoming available to undergraduates. I know I'd personally get quite a bit of use out of the 3Space upgrade, and I'm sure my peers and everyone else involved in 3D work through CARTAH would benefit enormously as well. Jason Reinhardt

As DXArts BFA undergraduate students we enjoy the benefits of cutting edge technology, bleeding edge concepts and elite staff. Updating the 3D lab hardware and imaging capabilities is critical for sustained exploration into stereo and HAPTIC platforms and subsequent discovery of intersections in art and technology. Creating a space for developing and prototyping real-time sensing systems has been a missing element from the DXArts capabilities on campus and is essential to creating great installation art. Opening the current classroom into a fully enabled laboratory will encourage further cross disciplinary collaborations, and enable DXArts to continue as a world class Digital Art program.

The DXARTS curriculum is already ahead of the curve with its broad yet detailed exploration of stereo 3d modeling and animation. With the addition of the equipment in the proposal, the students and researchers will be able to focus more on creative expression and have to worry less about struggling with the software or hardware. I am currently doing an internship at a graphic design company and have learned that up-to-date equipment not only increases potential, but also boosts efficiency. This proposal is an investment that will certainly pay off in the long run.

Eddy Adams

This proposal is exactly what is needed to allow the 3d lab to become a place for true experimental work. A big part of doing experimental 3d work is the technology involved in its creation and this technology will truly enable all using the lab to innovate in new digital fields. I am very excited to have access to equipment that I could not access on my own and the possibilities associated with this new lab.

Thankfully,  
Matthew Kaplan

3D development, research, innovation, art, and the associated industries today are undergoing explosive exponential growth. The possibilities for the future of this field is virtually limitless. As a undergraduate student within the DXARTS program, I have absolute certainty that this program can open the doors to a future with skills rarely found even within the professional world. I wholeheartedly believe that the DXARTS program at the UW has the potential to be an integral catalysis to the development of far-reaching innovations, ideas, and technologies that will have revolutionary reverberations across the country and beyond. The current work that is being done within this program is truly staggering. Even with the modest offering of quickly aging computer systems and equipment found inside the DXARTS computer classrooms, students in the program are producing work with exceptional quality. If this program had access to a full bodied computer lab with current tools and technologies the potentiality of this program will multiply profusely. Being a student at the UW today is an exciting privilege and this university is lucky to have minds and talent such as those commonly found within the walls of DXARTS.

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