### Cover Page

**Proposal Title**: Advanced Arts Project Proposal

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**Proposal Abstract**

The exceptionally high demand for video and audio services by students has created a pressing need for both server equipment, and video and audio production workstations. This proposal addresses these new needs by requesting server equipment, especially RAIDs dedicated to video and audio work, a new suite of workstations to enhance the Computer Music Studio, and a post production video station.

**School/College/Unit**: CARTAH                                     Date: 1/26/00

| | Primary Contact | Approved By | Budget Coordinator | Concurrence |
|---|---|---|---|---|
| Name | Richard Karpen | | Michael Furr | |
| Title | Director/Professor | | Program Assistant | |
| Mailstop | 353680 | | 353680 | |
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| Telephone | 3-4218 | | 3-4218 | |

By entering information above, it is assumed support for this request has been given; signatures are not required

### Please answer the following questions

1. What is the total amount of funds being requested?   $ 149,035

2. Is this your first application for funding?   ☐ Yes ☒ No

3. How many UW students have access to your resources?

   <u>All</u> Undergraduate Students

   <u>All</u> Graduate/Professional Students

4. How will students access these resources if funded? Pick the best answer, and explain in the "Access" section of this proposal.

   ☐ No Restrictions

   ☐ Campus unit students get priority

   ☒ By Appointment only

   ☐ No access

5. Where will proposed resources be located?   35 Thomson Hall, Music 12

6. Is this funding proposal student-initiated?   ☐ Yes ☒ No

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Please describe your proposal using the following guidelines. Limit your discussion to 6 pages, including budget. Feel free to contact the STFC with any questions (techfee@u.washington.edu).

## Background

Discuss the context for the proposed project. Describe the population of students in your School/College/Unit and how they currently use technology to achieve their educational, teaching, and research goals.

CARTAH is a unique resource on campus, providing a wide range of advanced technologies and technical support to individual students from all departments.  CARTAH serves all undergraduate and graduate students attending the University of Washington, with priority access given to students in the arts and humanities.  CARTAH is a projects based lab.  Students come to us with research ideas that require equipment and expertise that is otherwise often only found in restricted labs, if it can be found at all.  CARTAH provides help and expertise in formulating and completing complex student based video, audio, publishing, and web based projects.  Over the years, students have engaged in a wide variaty of projects, with subjects ranging from developing personal Web pages to the creation of internationally recognized audio and video works.  We encourage an open and friendly environment for students to pursue their work.  Students work along side student, professors, and other researchers from a wide range of backgrounds and disciplines, often sharing knowledge and expertise with these other researchers.

## Benefits to Students

Discuss how students will benefit from this proposal. This might include how this proposal will increase students' marketability for future careers; how this proposal will meet computing needs not currently met by existing resources; how this proposal will enhance students' education, teaching, and research activities.

Over the past year CARTAH has seen a steady increase in the number of student projects, and a dramatic increase in the sophistication of these projects.  This has meant that demand for key resources at CARTAH has far outstripped supply.  This year has also seen the increased integration of the Computer Music Studios into CARTAH.  This has allowed CARTAH to give students access to state-of-the-art facilities for high-end computer music generation and digital sound post-production work, which was previously only available to students in the School of Music graduate programs.  This proposal has three goals: to substantially enhance the servers used for student based projects,  to provide full access to students who wish to pursue advanced audio and music projects, and to provide students with the ability to do post-production video and virtual reality modeling.  The proposal is divided into three sections: Server and Storage enhancements, Computer Music Studio Enhancement, and  a Post Production Video/VR Station.

Server and Storage Enhancements:  Video and audio projects often require enormous amounts of disk storage.  Ongoing video and audio projects typically require from 5GB to 25GB of storage each.  With over100 student video and audio projects in two locations, this has meant many projects have had to delay or scale back work, with new projects being turned away due to lack of storage space.  CARTAH encourages students to pursue long-term projects.  In the past students have been able to leave large amounts of data on the servers for as long as the student required, allowing students to work on projects at their own pace, and as their schedule permits.  Because of chronic space shortages, we can no longer do this making if far more difficult for

students to work on the very projects that are most valuable for academic growth and real world experience. There are four elements to this sub-proposal, given in order of importance.

1) A 200GB RAID Storage for student video capture and production which will help alleviate ongoing storage problems in 35 Thomson Hall that students are now experiencing

2) A server and 300GB RAID which will support the Computer Music Studio in 12 Music Building, allowing greatly enhanced access for students pursuing CARTAH projects.

3) An additional 200GB RAID to support student post-production video work in 35 Thomson Hall, that would also help ensure enough storage capacity for the near future.

4) A 650GB/1.2TB Digital Linear Tape Library system capable of backing up current storage devices, as well as anticipated additions.

Computer Music Studio Enhancements: The Computer Music Studio serves students from many departments. The lab supports a mix of individual and class assigned projects. Unlike departmental labs, including the current lab proposed by Music, no single department claims a majority of students using the facilities. This is a project based center the provides the technical and technological resources to students to pursue advanced work. This grant would greatly expand student access by replacing aging workstations, and adding much needed new workstations. Students from the computer music program have won numerous international computer music awards. Projects in the computer music studios have included creating films and animations scores, interactive and online media, as well as art installations and computer-assisted live performance applications. CARTAH is the only facility on campus providing student access to high-end audio production and post-production, advanced software synthesis systems, professional music notation software, and Red Book audio CD-R mastering. There are two elements to this project, given in order of importance.

1) Four Macintosh G4 workstations, which will be used to replace older machines, as well as expand current capacity. These computers will be availible to students to generate and edit computer based audio using existing advanced software and hardware tools.

2) Four Dell Xeon workstations, which will be used to create a network of Linux based audio stations capable of creating and manipulating complex computer generated audio

Post Production Video/VR Station: As the number and sophistication of video based projects has increased, the need for a computer that can provide dedicated post-production capabilities has become more important. A computer that is geared specifically to post-production tasks such as the titling, special graphical effects, and computer animation would mean many processor intensive and time consuming tasks that are currently being done by the already oversubscribed video capture and editing stations can be completed on a separate machine. This will help streamline video work and increase access to current video capabilities by eliminating many production bottlenecks. This workstation will also be used for virual reality modeling. There are three elements to this proposal, given in order of importance.

1) A Macintosh G4 Workstation with post-production software suite, which will provide the core of the post-production capablility.  It will also enable students to create virtual reality models useful for video, multi-media, and Web based projects.

2) A DVD development suite and DVD RW writer that will enable students to produce video and audio DVDs.  And unlike the cheaper DVD-RAM standard, these discs will be suitable for consumer class DVD video/audio players, as well as long term data archiving and large scale multimedia projects.

2) A Macintosh Cinama Display 24" 'letterbox' flat screen monitor, which will help with video and animation construction by providing a  larger visual canvas on which the students can work.

## Access
Describe who will be using or will have access to the resources being proposed. If this is not a general access resource (i.e. available to any registered student), discuss what restrictions will be placed on resource use. Include hours of availability. Note that the Tech Fee Committee strongly encourages proposals to include a mechanism to allow all students access.

Access to CARTAH is available to all students, faculty and staff of the University of Washington who submit a structured research proposal.  This can be done simply from CARTAH's web site.  Students are offered help in constructing cogent research proposals,  and virtually all student research proposals are accepted.  CARTAH is open from 8:30 to 4:30 every weekday.

## Resources
Discuss currently available financial, personnel, and space resources devoted to technology and level of support. Include dollar amounts if possible. Describe how these resources will leverage this proposal if funded.

With the new addition of the Computer Music Studio, CARTAH now consists of a three working labs in three buildings, 35 Thomson Hall, B015/B025 Communications, and 12 Music Building.  CARTAH provides three permanent technical support staff, a permanent office support person, three Graduate Student Assistants, and four workstudy students, all available to advise students and support the labs.  These labs already have extensive video, graphics, audio, and animation facilities funded through industry grants, CARTAH and univeristy funds, as well as previous STF grants. New equipment would be integrated into these labs, and would enhance an already successful program of independent student research.  CARTAH also has an annual supplies budget of $35,000 used to support these labs.

## Timeline
Provide a time-line showing how the proposed project can be completed during the support period. Note that the STFC is flexible regarding implementation delays due to issues such as space renovation.

CARTAH proposes to acquire the items listed as soon as funds become availible, and to make the new resources available as soon as it arrives, with all equipment available by Fall, 2000.

## Budget

Present a detailed budget for the requested funds showing items, quantities, and prices of required material. Please be aware that the STFC does not fund furniture, ongoing costs including paper and toner, or maintenance. The STFC does fund maintenance contracts on machines purchased in advance and does fund software. The STFC will fund servers and related services but will not fund ongoing costs related to them.

| Hardware | | | |
|---|---|---|---|
| Item (specs) | Cost Per Item | Quantity | Subtotal |
| Macintosh G4 450MHz Workstation | 5310 | 5 | $26,550.00 |
| Dell 410 Xeon 550MHz Workstation | 5320 | 4 | $21,280.00 |
| Promax DVD Studio Pro DVD development kit (software+hardware) | 10,250 | 1 | $10,250.00 |
| Dell PowerEdge Server | 3490 | 1 | $3,490.00 |
| 300GB RAID | 11950 | 1 | $11,950.00 |
| 200GB RAID | 10945 | 2 | $21,890.00 |
| 650GB/1.2TB DLT Tape Library | 26500 | 1 | $26,500.00 |
| Macintosh 24" Cinema Display | 4000 | 1 | $4,000.00 |
| Subtotal: Hardware | | | $125,910.00 |
| Software | | | |
| Item (specs) | Cost per item | Quantity | Subtotal |
| Audio (Asarte Jam Audio Software, Sibelius Audio Software) | 690 | 1 | $690.00 |
| VR (QuickTime VR, VR Toolbox, Poser 4.0, Bryce 4.0, Kai's PT) | 2060 | 1 | $2060.00 |
| Post Production(Director 7.0, Flash 4.0, Aftereffects 4.1 Production) | 1800 | 1 | $1800.00 |
| Subtotal: Software | | | $4,550.00 |
| Miscellaneous | | | |
| Item (specs) | Cost per item | Quantity | Subtotal |
| 35/70 DLT Tapes | 80 | 72 | $5,760.00 |
| Subtotal: Miscellaneous | | | $5,760.00 |
| | | Subtotal | $136,220.00 |
| | | Tax | $11,715.00 |
| | | Shipping | $1,100.00 |
| | | Total | $149,035.00 |

You may use the table above, or insert your own spreadsheet.

Include justification for any specialized items below. Indicate the source and amount of any supplemental or matching funds to be obtained for this proposal. It is assumed that actual hardware purchased may differ in order to take advantage of price drops and that educational discounts will be utilized where possible.

## Endorsements: Departmental

List all participating units and include the endorsements of the supporting deans and/or vice-presidents who will serve as the co-leaders of the proposed initiative. The STFC supports efforts to provide partial funding or external support for projects. Please describe any efforts in this area.

CARTAH is the only participating unit.  CARTAH is an independent computing center within the College of Arts and Sciences.  This proposal is endorsed by CARTAH's director, Professor Richard Karpen.

## Endorsements: Student

Add student-derived data supporting student need. This might include testimonials, polls, data regarding current use of services or student preferences. Discuss the choice of computing platforms (UNIX, MacOS, Windows) and relation to student needs.

Total student initiated projects conducted during the 1998-99 school year: 202.  Student video projects: 52.  Student animation projects: 8.  Student audio projects: 68.  These projects often require hardware or software tools only available on specific operating systems or platforms, such as Windows, Macintosh, Linux, and Irix systems.

It should be noted that many of these projects involve more then one student, and that CARTAH also has another 100 or so projects that are faculty initiated but have strong student participation. It should also be noted that most CARTAH projects, especially video and audio projects, take many hours.  It is not unsual for a project to take hundreds of work hours to complete.

Below are a sample of current projects that would be directly helped by this proposal taken directly from project projects submitted to CARTAH.

Carrie Whitney, Photo, xcarriex@nwlink.com

I am animating still photographs taken in sequence and syncing them to a soundtrack. I'm exploring movement and facial distortions through emotion. Which creates some scary results. The song (by Logic Probe, a local electronic band) is about 5 minutes long and therefore my footage will be that length. This project idea was inspired by a slide show assignment given to our class by Tom Lewis spring quarter 99.

Peter Bill, Art, pbill@u.washington.edu

Snipers Alley, a walking tour.  A QuictimeVR interactive tour of Sarejevo's Marshall Titka street, otherwise known as snipers alley.  The walk down a street lined by mosques, orthodox churches, and Catholic Cathedrals, is a mirror to history.  It also presented an ideal line of fire to the snipers occuping the hills around.

All projects can be found on our web site at http://www.washington.edu/cartah/projects

## Concurrence

Please list contact information for faculty and students supporting this proposal. Signatures are not required. It is assumed that the individuals listed below  are aware of and support this proposal.

| Name | Affiliation | Mailstop | E-Mail | Telephone |
|---|---|---|---|---|
| Paul Berger | Professor, Art | 353440 | peberger@u | 5-2796 |
| Paul Remley | Professor, English | 354330 | remley@u | 3-2690 |
| Aaron Montoya | Undergraduate, Comparative History of Ideas | 354300 | montoya@u | N/A |

**Thank you.** When you are ready to submit your proposal, please go to the STF website (http://depts.washington.edu/techfee) for further instructions. Do not mail this proposal in hardcopy form.

The STFC is interested in working with departments to bring technology to students; feel free to contact us (techfee@u.washngton.edu) with any questions regarding your proposal.