Multimedia Laboratory Development and Integration

Robert Willey and Garth Alper

Abstract

Students in the School of Music desperately need more hands on opportunities and access to media labs. This proposal addresses these needs through an infusion of resources that should last for many years.

Multimedia draws from many disciplines and depends on the talents of a number of specialists in order to exploit its capabilities. The technology that is used to create projects provides a meeting ground, a common platform where specialized vocabularies and viewpoints can meet. Visual artists and musicians have traditionally had different orientations. The enhancement of the Resource Center will offer a space in which students and teachers from a variety of disciplines can meet together and collaborate. A series of open workshops will be offered to outline the lab's capabilities and opportunities for interdisciplinary collaboration.

The proposed project will provide an engine, creating opportunities for students to develop their own projects and collaborate in groups. Both these modes of work will be important for them to meet the changing world of music technology. Students need to be prepared to work with the Internet and DVD. The enhancement of our multimedia labs will provide the necessary tools upon which curriculum can be redesigned. The development and integration of our facilities will make our students' classroom experience much more practical and rewarding. It will also open the way for students to expand their vision and realize new types of projects that we can now only imagine.

Introduction

Students in the School of Music's growing media concentration are currently suffering from a critical lack of hands on training and practice in music production and mastering. There is hardly enough lab time available to do homework assignments let alone develop the fluency necessary to produce high quality creative projects. A proposal is made to increase the number of workstations in the present facilities and to create a new studio. This will greatly increase access, giving students time to master the operation of the necessary software and hardware, and to then use those skills to create art.

The School of Music currently has a Recording Studio, a MIDI Lab, and a Resource Center for study, each with their own specialized equipment. These facilities are incompatible in terms of hardware and software, creating a barrier from moving from one room to another to complete an assignment, and from applying skills learned in one class to the next in the sequence. Under this proposal the existing and new facilities will become tightly integrated. A student with a multimedia project will be able to capitalize

on the special capabilities of each room making lab time more efficient, moving from one room to another as needed. For example, a project could start with a basic synthesizer/drum foundation created in the Resource Center while listening with headphones, moved to the MIDI Lab for electronic additions, then to the Recording Studio for vocals, electric guitars, and horns, acoustic instruments on another day, and then finally mixed, edited, and mastered in the project studio. The strengths of each room can then be taken advantage of, and not tied up when not needed, freeing them up for other projects.

The present incompatibility of the present facilities is also a limitation for the series of synthesis, recording, and film scoring courses required by the Media concentration, which are taught in these labs. Techniques and skills learned in one class cannot be built upon the next semester in a different room. The integration of facilities made possible by the proposed expansion will provide a new environment in which the curriculum can be redesigned. Students will be able to take what they have learned in one class and develop it in the next, making the educational experience much more practical and rewarding.

Multimedia draws from many disciplines and depends on the talents and teamwork of a wide range of specialists in order to exploit its potential. The proposed project creates a significant resource for the College of the Arts and the University in general for the production of DVD's, a common platform where specialized vocabularies and viewpoints from a number of disciplines can meet. It will provide an engine, creating opportunities for students to develop their own individual projects and to collaborate in groups. Students need to become familiar with DVD production and the integration of the Internet.

A media program needs to be a multimedia program, combining music, video, text, graphics, and animation. The infusion of resources should benefit our programs for many years. The enhancement and integration of our multimedia labs will open the way for students to expand their vision and realize new types of projects that we can now only imagine.

a. Purpose of Grant and Impact to Student Body as a Whole

Present Conditions

- A growing number of students in the Music Media program.
- Extremely limited access to lab facilities for homework and original projects.
- Three incompatible laboratories are making it difficult to transfer skills between courses.
- Limited multimedia capabilities.

The Bachelor of Music program in the School of Music has five concentrations: jazz studies, piano pedagogy, performance, theory/composition, and music media. The music media is currently the largest and fastest growing segment with approximately sixty students and is designed to give students the skills they will need to succeed in today's rapidly changing music industry. It merges the Bachelor of Music degree with courses in music technology, recording techniques, film scoring, and music business and promises students extensive hands on experience in the School of Music's Recording Studio and MIDI Lab.

The capacity of the School of Music's music technology facilities has not kept pace with enrollment. Media students are required to take two MIDI courses, two arranging courses, two recording courses, digital editing, and two courses in film scoring, all of which necessitate or benefit from access and use of music technology facilities. The two studios presently in use (MIDI Lab and Recording Studio) are overloaded, and students get only one hour a week to do homework and projects. Sometimes, these projects must be done in groups to compensate for the number of students enrolled. One hour a week is not nearly enough time to learn how to operate all the systems involved, let alone to do any serious creative work or independent projects. Our observations, assessment questionnaires, and interviews with students have identified this as the biggest roadblock to the quality and growth of our program.

The School of Music also operates the Resource Center, a computing and listening lab open to all UL Lafayette students, where students go to do theory drills and music appreciation listening assignments. In addition to the problems created by limited access, the MIDI Lab, Recording Studio, and Resource Center do not share any compatible software and so work cannot be moved from one lab to another. Techniques learned in the MIDI Lab are not transferable to the Recording Studio for the same reasons of software and hardware incompatibilities, so experience in one course cannot be applied to the next.

The College of the Arts has recently funded the addition of a DVD Surround Sound workstation to the Recording Studio (http://www.louisiana.edu/~rkw3943/grants/spatial). DVD is the fastest growing electronic entertainment technology in history. We see DVD and the Internet as the key technologies upon which media will be developed over the short run, and the environment into which our students will emerge as they enter the job market. The production of DVD's with video, DVD-Audio, and Enhanced DVD (DVD for computer with added content such as interviews, articles, web sites, etc.) is a time consuming process and students will be able to only scratch the surface of what can be done given the present level of access.

Proposal

- Greatly increase access to laboratories for homework and original projects: add new workstations to increase capacity of current laboratories, expand and upgrade current facilities, and create a new project studio.

- Make laboratories compatible in order to make it easy to move between them to work on any assignment or project, and allow courses to build on skills learned previously.
- Develop powerful multimedia capabilities.
- Make media program complement other majors through DVD production.

We propose to greatly enhance the three existing laboratories and to create a new fourth facility with compatible hardware and software, so that work done in one can be continued in any of the other three. All four labs will be linked together by a new shared file system. Students will have the opportunity to work five to ten hours a week in the combined facilities, greatly increasing their level of expertise and possibilities for creative work. The study of music media must be hands on, as it currently is, in other concentrations in the School of Music and Visual Arts department. To make the program more effective we propose adding four new workstations and upgrading others. The key leveraging factor is that the systems will become compatible, so that homework can be started in one place and continued elsewhere, and that skills learned in one class can be incorporated into the next course in the sequence. Finally, we will have the capacity for students in the School of Music to continue with projects that will benefit their professional and artistic growth apart from any specific course.

There are three diagrams attached. The first shows the current conditions with three incompatible facilities: the MIDI Studio, Recording Studio, and Resource Center, and indicates the typical activities that take place there. The second diagram shows how the activities at the different stations will be enhanced by this grant. The last one shows where the proposed new purchases will go to make the systems work together as planned: four new workstations (three Macintosh G4's and one PC), the addition of a shared networked file system for student projects (the key to portability), hardware upgrades, MIDI equipment, and a number of software programs. Each station will subsequently contain the same capabilities as the other stations.

Our new DVD workstation will be placed in the control room of the Recording Studio, which shares its recording space with the orchestra and other ensembles, significantly reducing the number of hours it will be available for DVD production. It needs to be where it is in order to lend its hardware and software resources (i.e. Pro Tools) to improve students' multitrack recording experience and to compare surround sound and stereo mixes. After the music has been recorded, mixed, and edited, the process of DVD authoring and integration with websites will be a time consuming activity, drawing together a number of different information types. The full resources of the Recording Studio are not required as a student works on a multimedia project, i.e. writing text, manipulating graphics, mixing and editing sound files, etc. The new workstations and enhancing of the present system in the MIDI Lab, Resource Center, and Project Studio will greatly increase the options and access for students involved in DVD production, one of the experiences vital to the mission of the course of study in the Music Media concentration.

Video Capture

In order to enhance DVD production the proposal includes the purchase of a portable digital camcorder. We intend to collaborate with other departments and centers on the development of multimedia projects, such as the 2D/3D animation courses, computer science student programmers, the Center for Culture and Eco-Tourism, Acadiana Open Channel, KRVS radio, and the Department of Communications. However, we cannot depend on their interest and availability to film all the events that are of interest to us. The camcorder will be of value to all music students--documenting recitals and small groups, the Marching Band, Basketball Band, Wind Ensemble, Orchestra, Percussion Ensemble, Jazz Ensemble and combos, as well as vocal and brass groups. Providing audio feedback for groups has been a valuable part of the educational process, such as when rehearsals and concerts are recorded and listened back to. Adding the visual component will take the process to a higher level, and take advantage of the capabilities of the DVD platform, literally allowing "reviewing." Media students will become involved in the production of DVD documentation, promotion, and publishing projects of departmental groups, as well as their own projects such as original music videos, folk/roots music, and graduation portfolios drawing together course work from their entire college career.

A camera will serve all of the concentrations in the School of Music. In addition to seeing rehearsals and concerts played back, performers will benefit from being able to watch master classes with visiting teachers. The music industry survey course brings in a stream of professionals for guest lectures and panels. The piano pedagogy program would like to help student teachers analyze their work, and to share what is being done here with teachers at other schools. The incorporation of video will increasingly become a standard and expected part of recording projects as DVD becomes more common.

A camera is also an important part of extended multimedia DVD productions, giving students an opportunity to experience desktop video production in combination with graphics, text, audio, and animation. The DVD workstation currently being acquired includes video processing capabilities, so that scenes filmed can be manipulated by the same controls affecting the placement of music in a surround sound environment. It is expected that a number of student projects of original and regional music will be developed into prototypes for publication, and that collaborations will develop with music business students. It is the high density of video information streams that will require the inclusion of DVD in the convergence of technology (telephone, radio, TV, cable, satellite, wireless, newspapers, magazines) made possible by the Internet. Media students, if they are to be involved with multimedia, should be familiar with the capabilities and issues of video.

New Capabilities

Examples of class assignments that could be done in this environment:

- MIDI courses: score, sequence, and document original compositions, learn rudiments of Pro Tools (industry standard studio package) and DVD production.
- Recording courses: record, film, synchronize, mix, and edit music performance of a School of Music ensemble. Become adept at Pro Tools recording, mixing, and editing. Make an original music video and assemble on DVD.
- Film scoring: plan, film, compose, record, sync, and produce a commercial. Collaborate with a visual arts student, creating a sound track for an animation video. Apply MIDI and recording skills in the composition and production of music for movie scenes.
- Become involved with cultural projects: Cross Roads concert series, Festival International, Center for Culture and Eco-Tourism, KRVS artists. Make an enhanced DVD project documenting a rolk/roots group (interviews, video clips, cultural research). Use multimedia production skills to support regional culture and contribute to the development of music business infrastructure.

It is expected that a new Bachelor of Science major will be offered in the Fall of 2003 with a concentration in Music Business which will create new opportunities for developing products and starting up business activities.

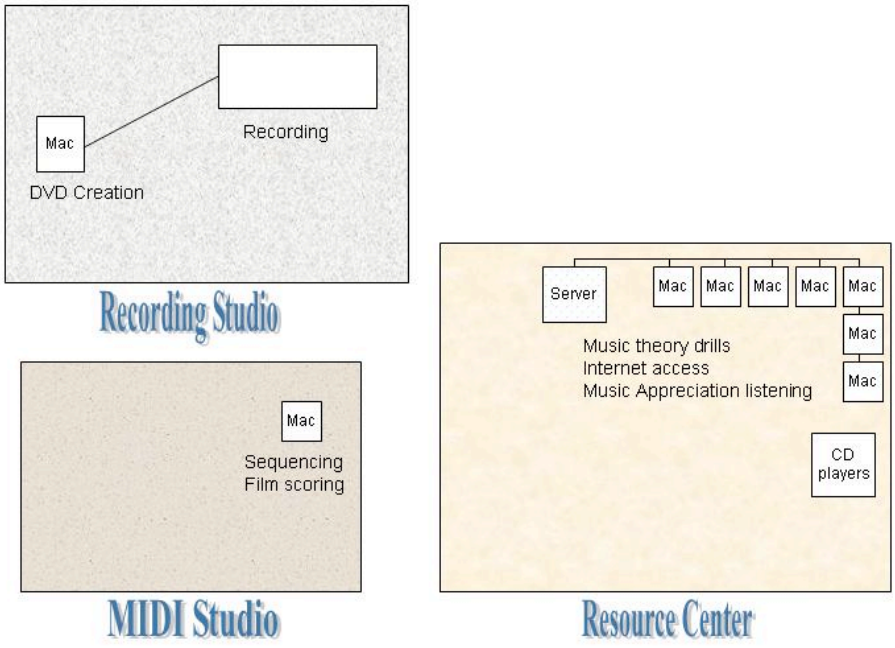

Diagram #1: Present state of three underpowered, incompatible facilities

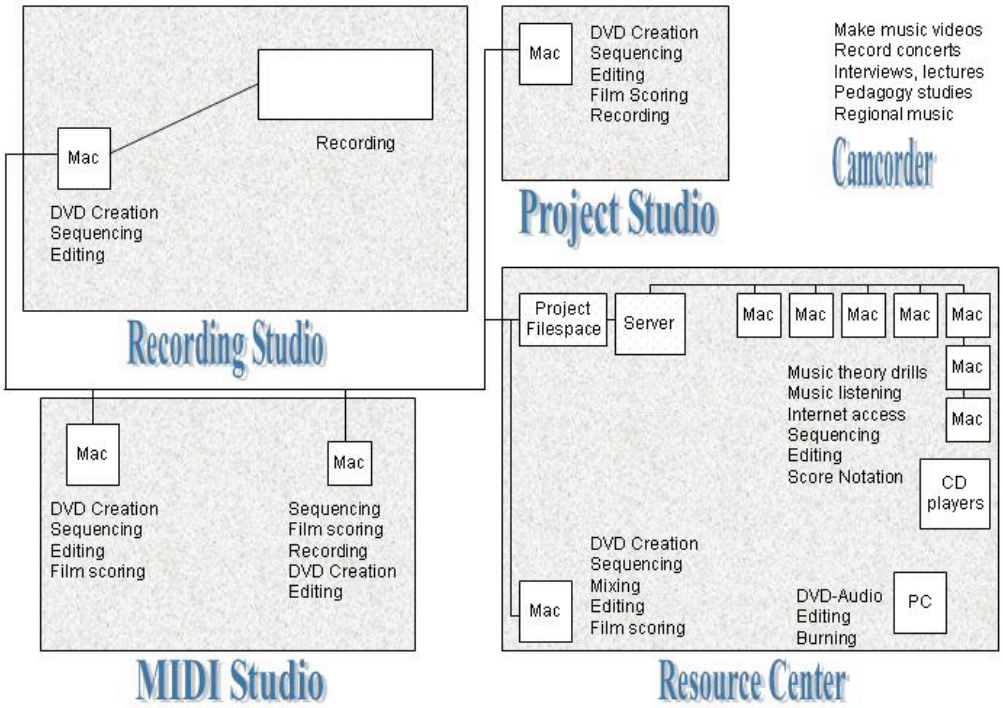

Diagram #2: New activities after development and integration

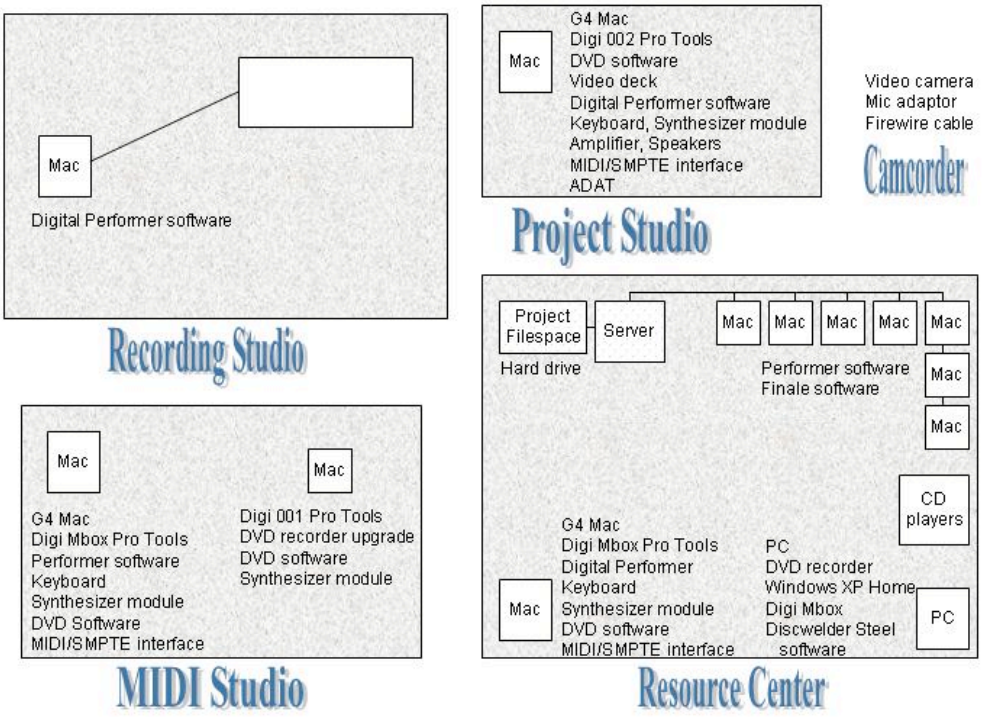

Diagram #3: Investments needed to support new activities

b. The projected lifetime of the enhancement is eight years.

c.i. The people responsible for implementation of the grant are Dr. Robert Willey and Dr. Garth Alper.

c. ii. The people responsible for the installation of the equipment are Dr. Robert Willey and Dr. Garth Alper.

c.iii. The people responsible for the maintenance of the equipment are Dr. Robert Willey and Dr. Garth Alper.

c. iv. The people responsible for the operation of the equipment are Dr. Robert Willey and Dr. Garth Alper.

c. v. The people responsible for the training of students on equipment are Dr. Robert Willey and Dr. Garth Alper.

Dr. Robert Willey has developed music technology at a number of universities in California, Brazil, and New York. He has been a pioneer in music performance systems since 1985, and teaches synthesis and recording at the School of Music. He is active in the production of recordings of music from south Louisiana.

Dr. Garth Alper has been the coordinator of the UL Lafayette Music Media division for five years. He received his Master of Arts degree in Jazz Performance from New York University and received his Doctor of Arts degree in Music Theory/Composition from The University of Northern Colorado, a leader in music technology instruction. Dr. Alper has been programming synthesizers and utilizing MIDI sequencing in performance and composition applications for the last twenty years.

d. Detailed Description of Each Budgeted Category

(note: For an equipment list organized by site, please see section 6 of this grant.)

1. Equipment

Item	Qty	Unit Price	Total
1. **Mac G4 Computer** Dual 1GHz 1GB Ram 80 GB Ultra ATA drive Apple Super Drive ATI Radeon 9600 Pro dual-display	3	$2,628	$7,884

keyboard, Mac OS			
2. **Second internal hard drive for audio files** IBM 120 GB 7200 RPM ATA/100 HDD 8.5 ms access, 2MB bugger, IDE drive compatible with Apple G4	3	180	540
3, **Viewsonic GS 790 Color 19" Monitor** .26 MM dot pitch, 1600 x 1200 resolution	3	329	987
4. **MIDI Interface** – synchronize video and multitrack audio Mark of the Unicorn (MOTU) MicroExpress Interface USB (Windows & Mac)	4	279	1116
5. **Roland XV-5080 Synth Module** General MIDI compatible 1024 patches 64 MB of ROM sound data	5	2299	11495
6. **Color television monitor**	4	350	1400
7. **Digi 002 Pro Tools** Firewire based Pro Tools mini studio with integrated controller – for Mac 8 analog inputs, 4 mic preamplifiers 48 V phantom power,8 analog outputs 8 channels of ADAT optical I/O, 2 channels of S/PDIF I/O, 24-bit / 96kHz converters, 8 touch-sensitive motorized faders, transport control	1	2199	2199
8. **Panasonic AG-DV1000 VTR** Mini DV Video deck compatible with digital camcorder allows for firewire transfer to computer	1	900	900
9. **Roland A-37 MIDI keyboard controller**	3	499	1497
10. **Kenwood VR-6050A/V Amplifier** 500 watt, Dolby 5.1 digital receiver 100 watts x 5 channels. Dolby digital EX DTS, Dolby Pro Logic II. 1 optical and 2 coaxial digital inputs. 3 audio and 5 A/V inputs including S-video one 5.1 channel pre-amp level back surround and subwoofer output six-channel analog audio input for discrete 5.1 connection	1	249	249
11. **Loud Speakers** (pair) Bose AM 6 speaker system 5 cube speakers, 5.5" woofer-200 watts speaker in bass module ($395)	1	395	395

12. **Wall bracket speaker mounts**	5	20	100
13. **Panasonic DVD RA 60S DVD player**	1	350	350
14. **ADAT XT-20 digital tape recorder** transfer recordings made in the Recording Studio. Alesis Corporation 8-channel digital recorder 20-bit converters compatible with present Recording Studio units	1	1339	1339
15. **Digidesign Digi001 Interface** with Pro Tools LE software 32-track., 1U rackmount module with PCI card two high-quality microphone preamps realtime plugin support 8 channels of analog I/O, 8 channels of optical I/O 2 channels of digital S/PDIF.	1	1000	1000
16. **Pioneer DVR-103 Superdrive** capable of burning CD-R and DVD	1	280	280
17. **Digidesign Mbox** 2 channel USB Pro Tools interface Pro Tools LE software Gets audio in and out of computer.	2	1000	1000
18. **Dell Dimension PC – 1** Pentium 4 processor, 60GB ATA hard drive 1 GB Ram, 19" flat CRT monitor Microsoft XP Professional Microsoft XP Office Professional Academic 4X DVD+RW drive, CD-RW Drive with Easy CD Creator Ethernet card, SoundBlaster Live 5.1 sound card stereo speakers, Dell Movie Studio Essential software Zip drive, AntiVirus software, dual monitor adapter Dell Education sales division (1-800-626-8286 x3)	1	3134	3134
20. **Ethernet hub,** 100 Mbit, 16-port. transfer of large audio and video files over the network between multimedia studios and other departments (i.e. visual arts, computer science)	1	199	199
21. **MIDI interface**. 1 in/ 1 out interface USB MIDISPORT 1x1 ($70).	1	70	70
22. **Scanner** USB connection.	1	200	200

23. **Digital Camcorder** – Canon GL1 (mini DV) Tripod Spare battery Carrying case MA-100 microphone adapter	1	2140	2140
24. **Raxxess workstation racks, computer desks** specially designed modular furniture integrating computers, keyboards, speakers and rack-mounted equipment	5	831	4155
25. **Assorted Cables, hardware**	1	750	750
26. **Sony MDR 7506 Headphones** allows for student collaboration at each workstation.	10	100	1000
27. **Alarm Lock DL-3000 computerized lock** will allow for student after-hours access to new project studio	1	800	800

2. Software

28. **Digital Performer** apply and develop sequencing skills learned in MIDI Lab	4	540	2160
29. **Performer license**	4	299	1196
30. **Apple DVD Studio Pro** motion/still menus, 99 video tracks, multiple stories 9 camera angles, eight audio streams, slide shows multiple language tracks. Handles audio from mono to 5.1 surround sound. Does Dolby AC-3 format encoding. Creates web links. Accepts and encodes MPEG audio. Supports NTSC and PAL formats. Supports 4:3 and 16:9 aspect rations. Accepts Quick Time, AIFF, Sound Designer, and WAVE format files for encoding. Outputs to Apple DVD_R drive or DVD-RAM)	4	499	1996
31. **Apple Final Cut Pro** combine with DVD Studio Pro for video editing and DVD authoring	4	299	1196

32. **Microsoft Front Page** creates and maintains web content for DVD+Internet content	3	70	210
33. **Adobe PhotoShop** industry standard image processing	3	299	897
34. **Discwelder Steel DVD-Audio software** Neither the DVD software that we have specified nor any other is presently capable of making DVD-Audio disks. DVD-Audio is presently the highest fidelity audio format and offers many interesting opportunities for music production.	1	495	495
35. **Apple OS X server** software for G4 computer allows for Mac and PC networking greater security, stability folder creation for student accounts	1	180	180
36. **Memory upgrade** – 1 GB for G4 computer	1	120	120
37. **iMac upgrades Memory upgrade** The Resource Center presently has 8 iMacs, four keyboards, and four synthesizer modules that are underutilized due to incompatibility with other facilities and lack of appropriate software. Four stations will be dedicated to sequencing and basic digital audio (Pro Tools Free), the other four will be used for score notation and word processing. All eight will be of use for theory drill and practice as well. 6 sets of upgradesm from 128 Mb to 512 Mb Will help run Digital Performer and other software. ($50 each, $300 total)	6	50	300
38. **Finale notation software** The industry standard for engraving-quality scores.	4	500	2000
39. **Microsoft WORD** We currently have no word processing packages.	4	40	160

5. Timeline

May 2003	Notification of Award
June 2003	Bids on equipment
July 2003	Installation of equipment
August 2003	Equipment use in classes

6. Additional information
Equipment request organized by site

Recording Studio – Enhance current facility

(1) Make current workstation compatible with other studios

Digital Performer software – apply and develop sequencing skills learned in MIDI Lab

MIDI Interface – synchronize video and multitrack audio - Mark of the Unicorn (MOTU) MicroExpress Interface USB (Macintosh)

MIDI synthesizer module – General MIDI (GM) compatible

Color television monitor – for DVD playback evaluation. This was left out of the currently funded workstation grant

Project Studio – Create new facility

(1) New workstation

Power Mac G4 (Dual 1GHz, 1GB Ram, 80 GB Ultra ATA drive, Apple Super Drive, ATI Radeon 9600 Pro dual-display, keyboard, Mac OS)

Viewsonic GS 790 Color Monitor (19" monitor, .26 MM dot pitch, 1600 x 1200 resolution)

Second internal hard drive for audio files (IBM 120 GB 7200 RPM ATA/100 HDD, 8.5 ms access, 2MB bugger, IDE drive, compatible with Apple G4)

Digi 002 Pro Tools – Firewire based Pro Tools mini studio with integrated controller – for Macintosh (8 analog inputs, 4 mic preamplifiers, 48 V phantom power, 8 analog outputs, 8 channels of ADAT optical I/O, 2 channels of S/PDIF I/O, 24-bit / 96kHz converters, 8 touch-sensitive motorized faders, transport control)

DVD software

Apple DVD Studio Pro (motion/still menus, 99 video tracks, multiple stories, 9 camera angles, eight audio streams, slide shows, multiple language tracks. Handles audio from mono to 5.1 surround sound. Does Dolby AC-3 format encoding. Creates web links. Accepts and encodes MPEG audio. Supports

NTSC and PAL formats. Supports 4:3 and 16:9 aspect rations. Accepts Quick Time, AIFF, Sound Designer, and WAVE format files for encoding. Outputs to Apple DVD_R drive or DVD-RAM)

Apple Final Cut Pro (combine with DVD Studio Pro for video editing and DVD authoring)

Web development and image processing software

Microsoft Front Page – create and maintain web content for DVD+Internet content

Adobe PhotoShop – industry standard image processing

Mini DV Video deck – Panasonic AG-DV1000 VTR – compatible with digital camcorder, allowing firewire transfer to computer
Digital Performer software

MIDI Keyboard controller – music keyboard for input performance (note: doesn't need internal synthesizer)

MIDI synthesizer module – General MIDI (GM) compatible. This is what synthesizes the MIDI part, synchronized with the digital audio in Pro Tools or Digital Performer.

A/V Amplifier (Kenwood VR-6050, 500 watt, Dolby 5.1 digital receiver. 100 watts x 5 channels. Dolby digital EX, DTS, Dolby Pro Logic II. 1 optical and 2 coaxial digital inputs. 3 audio and 5 A/V inputs including S-video, one 5.1 channel, pre-amp level back surround and subwoofer output, six-channel analog audio input for discrete 5.1 connection)

Loud Speakers (Bose AM 6 speaker system, 5 cube speakers, 5.5" woofer-200 watts, speaker in bass module)

Wall bracket speaker mounts (5)

DVD player for checking playback of authored material (Panasonic DVD RA 60S. DVD and DVD-Audio player.

Color TV monitor

MIDI/SMPTE interface - synchronize video and multitrack audio - Mark of the Unicorn (MOTU) MicroExpress Interface USB (Windows and Macintosh)

ADAT XT-20 digital tape recorder – transfer recordings made in the Recording Studio and in the field. (Alesis Corporation 8-channel digital recorder, 20-bit converters, compatible with present Recording Studio units)

MIDI Studio – enhance current facility

(1) Update current workstation

Digidesign Digi001 Interface with Pro Tools LE software

32-track. 1U rackmount module with PCI card, two high-quality microphone preamps, realtime plugin support, 8 channels of analog I/O, 8 channels of optical I/O, 2 channels of digital S/PDIF.

Replace CD drive with Superdrive (Pioneer DVR-103) – capable of burning CD-R and DVD ($280 when available)

DVD Software

Apple DVD Studio Pro (motion/still menus, 99 video tracks, multiple stories, 9 camera angles, eight audio streams, slide shows, multiple language tracks. Handles audio from mono to 5.1 surround sound. Does Dolby AC-3 format encoding. Creates web links. Accepts and encodes MPEG audio. Supports NTSC and PAL formats. Supports 4:3 and 16:9 aspect rations. Accepts Quick Time, AIFF, Sound Designer, and WAVE format files for encoding. Outputs to Apple DVD_R drive or DVD-RAM)

Apple Final Cut Pro (combine with DVD Studio Pro for video editing and DVD authoring)

MIDI synthesizer module – General MIDI (GM) compatible

(2) New workstation

Power Mac G4 (Dual 1GHz, 1GB Ram, 80 GB Ultra ATA drive, Apple Super Drive, ATI Radeon 9600 Pro dual-display, keyboard, Mac OS)

Second internal hard drive for audio files (IBM 120 GB 7200 RPM ATA/100 HDD, 8.5 ms access, 2MB bugger, IDE drive, compatible with Apple G4)

Viewsonic GS 790 Color Monitor (19" monitor, .26 MM dot pitch, 1600 x 1200 resolution)

Digidesign Mbox – 2 channel USB Pro Tools interface with Pro Tools LE software. Get audio in and out of computer.

Digital Performer software – apply and develop sequencing skills in MIDI and film scoring classes

Color television monitor – for DVD playback evaluation. This was left out of the currently funded workstation grant

MIDI Keyboard controller – music keyboard for input performance (note: doesn't need internal synthesizer)

MIDI synthesizer module – General MIDI (GM) compatible

DVD Software

Apple DVD Studio Pro (motion/still menus, 99 video tracks, multiple stories, 9 camera angles, eight audio streams, slide shows, multiple language tracks. Handles audio from mono to 5.1 surround sound. Does Dolby AC-3 format encoding. Creates web links. Accepts and encodes MPEG audio. Supports NTSC and PAL formats. Supports 4:3 and 16:9 aspect rations. Accepts Quick Time, AIFF, Sound Designer, and WAVE format files for encoding. Outputs to Apple DVD_R drive or DVD-RAM)

Apple Final Cut Pro (combine with DVD Studio Pro for video editing and DVD authoring)

Microsoft Front Page – create and maintain web content for DVD+Internet content

MIDI/SMPTE interface - synchronize video and multitrack audio - Mark of the Unicorn (MOTU) MicroExpress Interface USB (Windows and Macintosh)

Resource Center - enhance current facility

(1) New workstation

Power Mac G4 (Dual 1GHz, 1GB Ram, 80 GB Ultra ATA drive, Apple Super Drive, ATI Radeon 9600 Pro dual-display, keyboard, Mac OS)

Viewsonic GS 790 Color Monitor (19" monitor, .26 MM dot pitch, 1600 x 1200 resolution)

Second internal hard drive for audio files (IBM 120 GB 7200 RPM ATA/100 HDD, 8.5 ms access, 2MB bugger, IDE drive, compatible with Apple G4)

Digidesign Mbox – 2 channel USB Pro Tools interface with Pro Tools LE software. Get audio in and out of computer.

Digital Performer software – apply and develop sequencing skills in MIDI and film scoring classes

Color television monitor – for DVD playback evaluation. This was left out of the currently funded workstation grant

MIDI Keyboard controller – music keyboard for input performance (note: doesn't need internal synthesizer)

MIDI synthesizer module – General MIDI (GM) compatible

DVD Software

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Apple Final Cut Pro (combine with DVD Studio Pro for video editing and DVD authoring)

Web development and image processing software

Microsoft Front Page – create and maintain web content for DVD+Internet content

Adobe PhotoShop – industry standard image processing

MIDI/SMPTE interface - synchronize video and multitrack audio - Mark of the Unicorn (MOTU) MicroExpress Interface USB (Windows and Macintosh)

(2) New workstation (PC)

Media students have requested PC access. Some DVD authoring software only runs on PC, for example, DVD-Audio authoring software.

Dell Dimension PC – 1

Dell Education sales division (1-800-626-8286 x3)
Pentium 4 processor, 60GB ATA hard drive, 1 GB Ram, 19" flat CRT monitor, Microsoft XP Professional, Microsoft XP Office Professional Academic, 4X DVD+RW drive, CD-RW Drive with Easy CD Creator, Ethernet card, SoundBlaster Live 5.1 sound card, stereo speakers, Dell Movie Studio Essential software, Zip drive, AntiVirus software, dual monitor adapter

DVD-Audio software: Discwelder Steel. Neither the DVD software that we have specified nor any other is presently capable of making DVD-Audio disks. DVD-Audio is presently the highest fidelity audio format and offers many interesting opportunities for music production.

(3) Server upgrade

The Resource Center presently has a server for its iMac network, but it does not have enough space for student work. Its operating system needs an upgrade as well.

Filespace creation for student projects. This common depository will allow shipping of files from one lab to another. 120 GB internal, ATA drive for Macintosh G4

Apple OS X server software for G4 computer – allow Mac and PC networking, greater security, stability, and folder creation for student accounts

Memory upgrade – 1 GB for G4 computer

Ethernet hub, 100 Mbit, 16-port. Needed to handle the shipping of large audio and video files over the network, between our multimedia studios and other departments (i.e. visual arts, computer science)

(4) iMac upgrades

The Resource Center presently has 8 iMacs, four keyboards, and four synthesizer modules that are underutilized due to incompatibility with other facilities and lack of appropriate software. Four stations will be dedicated to sequencing and basic digital audio (Pro Tools Free), the other four will be used for score notation and word processing. All eight will be of use for theory drill and practice as well.

Memory upgrade (6 sets of upgradesm from 128 Mb to 512 Mb). Will help run Digital Performer and other software.

Performer sequencing software (4 copies) (instead of Digital Performer) – Note: license if possible.

Finale notation software, the industry standard for engraving-quality scores. (4 copies) – licence

Microsoft WORD (4 copies). We currently have no word processing packages.

MIDI interface. A simple 1 in/ 1 out interface (there are already three MIDI interfaces in the lab, only one is needed to complete four working stations). USB MIDISPORT 1x1 ($70).

(5) Scanner – USB connection. Useful for everyone in the department: all students and faculty. None currently available in the School of Music.

Portable Video equipment

Digital Camcorder – Canon GL1 (mini DV)

Tripod
Spare battery
Carrying case

7. Previous funded STEP projects

Dr. Garth Alper wrote and successfully implemented a STEP grant in 1999, which funded a professional quality sound reinforcement system (PA) for Angelle Hall Auditorium. The system has been in use for over a year and has been used for numerous university functions. The system has become an invaluable teaching tool for School of Music students.