

ATMI 2001 Conference Presenters and Abstracts

Bain, Reginald (University of South Carolina)
WebNHT: A Hypertext Approach to Nonharmonic Tones

WebNHT is a site dedicated to the study of nonharmonic (nonchord) tones, a traditional topic found in most tonal harmony and counterpoint texts. WebNHT is an interactive multimedia guide to nonharmonic tones designed specifically for university-level music theory students. It provides a means for self-paced study, review, and personal assessment beyond what is usually provided in course texts. Students work in a simple hypertext environment designed to provide convenient non-linear access to definitions of terms and musical examples with audio playback. The author has made every effort to create software that is both easy to use as well as compatible with a variety of currently popular theory texts.

Clemmons, Bill (Point Loma Nazarene University)
Patterns in Tonal Music: Music Fundamentals On-Line with Java 2

Java 2 provides a robust set of tools for the creation of rich, interactive web-based applications. With this in mind, it proved ideal for the creation of an on-line music fundamentals course, *Patterns in Tonal Music*. The course is made available to our freshmen in the Summer prior to matriculation, enabling them to improve their skills enough to enter directly into Theory I. Java's advantages are its ability to run identically across platforms, its independence from any one operating system, and its ability to create both server and client side applications. Its chief disadvantage is that for those of us involved in academia, it is still code and involves learning straight-ahead programming. The commitment to not only learning and staying current in our field, but having to learn programming skills at the same time, can be daunting. This presentation offers one strategy for using Java as well as a set of tools for anyone who wishes to set up a similar site.

Clifford, Dr. Robert (University of South Florida)
Adaptive Hypermedia and Basic Skills Instruction in Music Theory

Hypermedia applications allow instructors to deliver text, graphics, sound files, and interactive drills to students on their own computer, from a local server, or at a distance via the World Wide Web. This ease of access, and the rich multimedia environment, make these applications especially desirable for teaching basic skills in music theory. Within the larger realm of hypermedia is one specific type, adaptive hypermedia, that greatly enhances our ability to reach the needs of students with widely varying levels of proficiency. This presentation discusses adaptive hypermedia techniques, related research, and their application to the acquisition of basic music skills at colleges or universities. I also demonstrate my own web-based adaptive

hypermedium application, a program designed to provide instruction in basic concepts of music theory. Adaptive techniques can be appropriate at all levels of instruction, from first- or second-year students in need of some type of computer-assisted instruction to graduate students who need instruction only in selected areas. The challenge for developers, of course, is to write applications taking this diverse set of abilities into account, a task greatly facilitated by adaptive hypermedia.

Colletta, Sean M. (Rutgers University)
A Web-based Java Harmony Tutor

A Java web-based harmony tutor will be presented as a nearly complete work-in-progress. The tutor will provide exercise checking/correctional functions, as well as MIDI playback options, and full networking capacity for classroom participation and student-to-professor submission of exercises. Java was chosen as the programming language due to its platform-independent design and its easy incorporation into web pages. Thus, this program, when completed, could be accessed from any University, as well as independently of academia, with no software requirements other than a web browser. The first part of the presentation will focus on general features of the harmony tutor, providing an introduction to its form and content. In the second half an interesting aspect of its implementation will be discussed, including coding examples if time allows.

Chrisman, Richard (Rutgers University)

See Menoche, Charles (*Creating an Interactive Music Learning Center: Results of the Hybridization of a Non-Major Theory Course*)

Dalby, Bruce (University of New Mexico)
Ear Training Software Based on the Principles of Music Learning Theory

This session will consist of a demonstration of an ear training software program based on the theoretical assumptions and specific teaching methods and techniques of Music Learning Theory. Included are various means for practicing both the "parts" part of the music learning curriculum (tonal and rhythm patterns) and the "whole" part (music literature). The overall goal is development of audiation, the ability to hear music in one's mind with comprehension of its tonal and rhythmic characteristics.

Deal, John J. (University of North Carolina at Greensboro), Taylor, Jack (Florida State University)
The Status of Technology Integration in College Music Methods Courses: A Survey of NASM

Colleges and Universities

Having been involved in music technology for many years and having observed its evolution from the limited "drillmaster" concept to the nicely designed, interactive formats used in most music instruction applications, the authors were concerned about the infusion of this new technology and software into actual classroom environments. Are teachers integrating computer hardware and music software in their curricula? A recently completed national survey of music teachers (*Integrating Technology into the K-12 Music Curriculum: A National Survey*) found that only about 40% are using technology with their students, and that most of the teachers are self taught (some have attended one workshop). Furthermore, their use of technology is infrequent because of limited access to computers and software.

These results prompted the researchers to wonder about the college training K-12 music teachers have received. Are college faculty taking advantage of their student's skills in, and enthusiasm for, technology by using computers in their classes and also by teaching their students how to use technology? Judging from the results of our K-12 survey, our hypothesis was mostly negative; that is, it appeared that college music faculty may not be using or teaching technology in their classes, and thus their students enter the teaching profession with few skills or ideas for integrating technology in their K-12 classes.

This session presents the results of this survey of college music methods teachers and reports data in a number of areas, including demographics of respondents, experience and training in technology, respondent's use of technology in their methods courses, and the extent to which they teach students to use and incorporate technology in the music curriculum.

DeRidder, Jody (University of Tennessee)

See Murphy, Barbara (*Teaching Triads with Technology: A description of a web-based drill and practice module and analysis applet on triads*)

Dobbe, Dr. Kevin (University Center Rochester)

It Takes a Village to Raise a CD-ROM: The Creation of the "New Band Horizons" CD-ROM Project

New Band Horizons is a multi-year commissioning and education project created by the American Composers Forum. This project has commissioned 15 of America's finest composers and has aligned them with band students and educators from around the country to create works and electronic curriculum for early to middle level bands. This presentation will discuss how such a large project is organized; how the 15 CD-E's were created, and will briefly demonstrates the CD's and created web sites.

Dvorin, David (Sierra College/Emagic)

Score Music and Sound Effects to Digital Video the Easy Way: A Lesson Idea for Grades 4 through High School

Lesson idea utilizing state-of-the-art, entry level sequencing/digital audio software. Students (elementary, high school) compose a musical score to a QuickTime movie, exploring the relationship of sound to image. Demonstration covers the complete process, from acquiring/importing the digital video to the synchronization of sound with video to assembling the final product.

Dvorin, David (Sierra College/Emagic)

Interactive MIDI Performance

Hagen, Sara (Valley City State University)

The Effects of Computer-Assisted Instruction and Cognitive Style on Sight-Reading Among University Group Piano Students

The purpose of this study was to investigate the effectiveness of three practice methods, specifically two different computer-assisted methods and the traditional classroom method, on the ability to sight play at the piano in second-year group piano classes at Florida State University. Investigations were also made regarding the effects of cognitive style and gender on the ability to sight play. Questions of interest involved the main effects for, and interactions among, practice methods, field dependence/independence (FDI), and gender. Other variables included the subjects' history of piano lessons and their experiences in accompanying. Subjects (N = 40) were asked to rank their sight-playing ability and the importance of sight playing to their future work. Subjects in the computer groups were surveyed for attitude and experience as well as their beliefs about the efficacy of the computer programs used in the study. Both quantitative and qualitative examinations of preview protocols were also undertaken to explore possible connections between how subjects prepared to sight play and their sight-playing scores. The full factorial model did not reveal any significant differences; however, a t-test revealed a significant amount of growth across the sample, regardless of practice method or cognitive style from pretest to posttest. Finale(c) by Coda and Harmony(c) by MusicLab were used to test accompanying and chord drill practice methods. "Proceduralization" took place across all groups in the form of a weekly checklist and a "tips" handout. Significant differences were not found among the practice methods. Significant differences were not found for FDI in this study; however, the Finale(c) group was significantly different in a method/style model showing nearly equal benefits for both FD and FI learners. The other two methods were not as successful for FD learners. The Finale(c) group also had the highest mean composite posttest scores and reported the highest confidence ratings. The computer groups significantly outperformed the classroom for note accuracy but the classroom significantly outperformed the computer groups for rhythm accuracy. Two-thirds of the subjects believed the computer

improved sight playing. The results regarding remaining variables, protocol analysis, as well as suggestions for future research and pedagogy was discussed.

Hess, George J. (Central Michigan University)
eBand, the Central Michigan University Electronic Ensemble

eBand, an alternate controller ensemble performing original jazz and improvisational music.

Hosken, Dan (California State University, Northridge)
Sound Streams: A Methodology For Teaching Sound Composition To Visual Artists

Multimedia presentation spaces such as the internet, CD-ROMs, and live multimedia performances, are becoming an increasingly important artistic player in our culture. However, the sound aspect of multimedia is often created as a secondary priority by non-musicians or musicians of limited training. This scenario often results in sophisticated visuals accompanied by either stock audio or unimaginative new sonic creations. To address this problem I have developed an approach to teaching the rudiments of sound composition using digital audio editing techniques in tracks- and timeline-based programs (such as digital audio sequencers and other media editors) to reduce the required musical knowledge base. This approach is based on creating sound events made up of a set of musical parameters (e.g., pitch, rhythm, timbre, etc.) that change over time as defined by "trajectories" that the composer/artist creates. Multiple events are then combined and layered to create a composition. This approach has the advantage of converting an artist's already well-developed sense of gesture into a temporal design while introducing only enough musical concepts to define the basic parameters of a sound event. This compositional model bears a relationship to the work of Trevor Wishart and the European "Acousmatic" tradition.

Lipscomb, Scott D. (Northwestern University)
To stream or not to stream: Making sound files available on the internet

Focusing primarily on music-related educational materials, this presentation will provide a concise comparison and contrast of the various sound file types (WAVE, AIFF, MP3, Real Audio, Shockwave, Liquid Audio, Beatnik, QuickTime, and others), along with a delineation of the strengths & weaknesses associated with each. Specific step-by-step instructions for integrating each type of sound file will be provided. Advantages and disadvantages of streaming media vs. downloadable media will be addressed, including issues related to copyright infringement, user download time, general accessibility, and consideration of specific hardware, software, and/or platform requirements & limitations.

Lochstampfor, Mark (Capital University)

Using the BlackBoard Course Management software as an extension of the music classroom for student assessment of musical knowledge and skills

Course Management Software (CMS) is gaining popularity on campuses nationwide. Since the entry of this software several years ago, a number of institutions and academic divisions have adopted course management software into their information technology departments. The software is usually utilized as an extension of the classroom environment. In this way it is another instructional tool, but CMS such as BlackBoard can be incorporated as a useful tool for the assessment of students' knowledge and musical skills. This presentation will show how BlackBoard can be used as an assessment tool of musical skills for musicianship classes as well as student auditions for college admission.

McCord, Kimberly (Illinois State University)

See Reese, Sam (*Addressing Music Standards with Technology*)

Megill, David W. (MiraCosta College), Donald D. Megill (MiraCosta College)

Appreciation and Fundamentals Online-It Works!

Moving music classes online proves uniquely difficult because of media requirements such as notation and sound. To make these courses interactive proves even more complex and problematic. Because we are a niche discipline compared to mainline required academic areas like math and science, publishers are not encouraged to pour in the resources required for robust online music offerings. We therefore depend on those expert among us to develop and share tools for the new technical modality. In this workshop we offer such tools: interactive listening guides, interactive notation and audio applets for skill development and testing, as well as complete curricular contexts for common classes such as music appreciation and music fundamentals. As authors of high profile textbooks who have also been actively teaching for many years, we appreciate the need teachers have to customize any educational package they adopt to meet their own pedagogical intentions. The award winning online classes we will demonstrate offer such customization and are designed to be shared with any teacher interested in moving classes online in an expedient manner.

Megill, Donald D. (MiraCosta College)

See Megill, David W. (*Appreciation and Fundamentals Online-It Works!*)

Menoche, Charles (Rutgers University)

Metaphorically Teaching: Teaching Traditional Electro-acoustic Music Concepts and Skills in the Computer Era

This session will present a model for using software tools to teach a historically-informed electro-acoustic composition class. By carefully constructing lessons and assignments, it is possible to use various software applications to teach traditionally hardware-based topics without direct access to the hardware. This solution has proven to be practical, elegant, affordable, and pedagogically sound. Using computer applications which emulate traditionally hardware-centric concepts such as modular voltage-controlled synthesis and basic tape manipulation techniques, students learn fundamental principles of electro-acoustic composition. A software-based solution also offers additional teaching and learning resources not available with traditional hardware-based methodologies, including affordability, flexibility, and increased access. This presentation will trace the development of a software-based course at Rutgers University and highlight representative assignments, exercises, instructional tools, and teaching methods developed with the aid of commercial music software applications such as PeakLE and the recently-released Reaktor.

Menoche, Charles (Rutgers University), Matthew Riedel (Rutgers University), Richard Chrisman, (Rutgers University)

Creating an Interactive Music Learning Center: Results of the Hybridization of a Non-Major Theory Course

As part of an effort to improve instruction in our music theory curriculum, the Department of Music at Rutgers University has transformed our traditional non-major music theory class into an innovative and exciting hybrid course. A recent trend in higher education, hybrid courses combine the best features of traditional face-to-face teaching with on-line resources and activities. In order to achieve this transformation, our project has focused on the development of a web-based Interactive Music Learning Center (IMLC), which provides the requisite drill, practice, and feedback for music fundamentals. This website has replaced traditional paper-based assignments in some sections of our non-major theory course. The development, implementation, and assessment of the project has not been without some hurdles and challenges (including a hacker attack at the beginning of our fall semester). In our presentation we will discuss three key aspects of the project: 1. A brief overview of the actual IMLC website, 2. An implementation and progress report, and 3. An initial analysis of data collected during the 2000-2001 academic year.

Murphy, Barbara (University of Tennessee), Jody DeRidder (University of Tennessee)

Teaching Triads with Technology: A description of a web-based drill and practice module and analysis applet on triads

In this presentation, we will describe and demonstrate a new web-based module on triads used by music theory students for the first time in Fall 2001 at the University of Tennessee. This module includes informational handouts on triads and other chords (complete with aural examples), a chord notation drill and practice module, and an analysis applet for identification and analysis of chords in the context of examples from music literature. The on-line drill and practice module was written in Flash 5. In this drill, the student is given the bass note of the triad in either treble, bass or alto and is asked to notate the other notes of the chord. Using the analysis applet, the student can analyze a musical score in whole or part directly on the screen and submit the analyzed score to the teacher for grading. This applet is written in Server-side Java, MySQL, and perl (for password checking) and uses Real Player for sound generation.

Nord, Timothy A. (Ithaca College)

Using Director 8 and SequenceXtra to Create Realtime Interactive Music Notation for the WWW.

One of the weaknesses of most web-based music instruction is the absence of high quality truly interactive music notation. Most programs rely on image-swapping routines or some rather complex java programming to accomplish the illusion of actual changes in notation. Utilizing the imaging methods available in Director 8, along with the SequenceXtra, realtime notation can be accomplished either through MIDI input or via a "point-and-click" interface without having to predetermine the placement of any sprites onscreen. Through the use of some fairly simple Lingo scripts, input from a MIDI keyboard can be analyzed and translated into onscreen notation and any notation placed onscreen can be translated into a MIDI file and performed either through QuickTime or any connected MIDI keyboard. This capability opens up a whole new set of possibilities for online cross-platform instruction.

Post, Brian (Humboldt State University)

Offering Digital Video Editing in the College Classroom with iMovie 2.0 and QuickTime 4.1.2

Although QuickTime has become an industry standard for developing digital movies, it has always contained certain short-comings in the area of digital video (DV) editing and playback that until recently were not easily overcome without investing in expensive digital editing software. With the release of iMovie 2.0, entry level professional DV editing is now available for \$50.00. This demonstration will discuss the basic functions of iMovie 2.0 and then show how it can be used in conjunction with QuickTime 4.1.2 to teach DV editing techniques in a classroom situation. Digital video editing techniques that will be demonstrated include; digitizing film, converting digital movies to an analog format, creating QuickTime Movies, converting MIDI files to digital audio files, importing and mixing music tracks, sound effects and dialogue, and creating titles and credits.

Rees, Fred J. (Indiana University School of Music at IUPUI)

Using Internet-based Streaming Video and Course Management Tools to Address The Need for

Student/Teacher Interaction in Distance Learning.

This paper discusses the design, implementation and evaluation of an Internet-based video-streaming tool and course management system for teaching graduate students at a distance. Its purpose is to evaluate their effectiveness in addressing some of the current limitations of teacher/student interaction over the Internet - a critical factor for effective learning at a distance.

Reese, Sam (University of Illinois), Kimberly Walls (Auburn University), Kimberly Mc Cord (Illinois State University)

Addressing Music Standards with Technology

Addressing Music Standards with Technology will be presented by the editors of a new MENC "Strategies for Teaching" book. The panel will briefly discuss the background and organization of the book, and present music lesson plans (or strategies) submitted by elementary, middle, and high school teachers that incorporate technology. The session should be valuable for CMS/ATMI participants in that they will learn more about how music teachers are using technology in schools so that they can incorporate the ideas into their college courses (music education, ensembles, technology, composition, etc.)

Reese, Sam (University of Illinois at Urbana-Champaign)

Music Technology in American Public Schools: Implications for Teacher Education

This paper will summarize and report the results of recent survey research regarding the use of music technology in American public (K-12) schools. It will interpret the trends and issues revealed in these studies and summarize the status of technology in schools in order to derive implications for music teacher education curricula. The paper addresses the rapid increase in access to computer and networking technologies in K-12 American schools in the late 1990's and the consequent high level of demand for both pre-service and inservice teacher education in the effective use of technologies for music education.

Repp, Richard (Terra College)

High-End Digital Audio at a (Relatively) Reasonable Price Tag: The DIGI 001 with Pro Tools

Studio quality digital audio was once out of the scope of the average educator due to cost and steep learning curve. With the introduction of Digidesign's Digi 001 system, now anyone with a computer can produce a professional quality 24-bit multitrack recording for under \$1000. Issues such as hardware setup, software installation, multitrack recording, engineering, mastering, and burning a CD are discussed.

Riedel, Matthew (Rutgers University)

See *(Creating an Interactive Music Learning Center: Results of the Hybridization of a Non-Major Theory Course*

Riley, Dr. Raymond (Alma College)

QuickTime For The Online Music Educator: The Essentials

For music educators and multimedia authors, QuickTime is one of the most popular and user-friendly ways to deliver media on the Web. Whether integrating recorded sound, MIDI, text, still images, motion video, virtual reality, or interactivity, QuickTime can be delivered from any Web server, regardless of its operating system, and QuickTime movies play back equally well on Windows and Macintosh computers. This presentation examines the essential techniques and procedures for web delivery of QuickTime content with particular attention to understanding the EMBED tag and its long list of attributes for controlling the playback of movies in the web browser. Several tutorials will be demonstrated detailing the steps undertaken to create and deploy QuickTime media on the Web.

Spear, Lee S (University of Pittsburgh - Bradford)

An interactive on-line primer for basic musicianship, using Flash and Beatnik

When the "musically clueless" want to try a basic musicianship course, helping them reach an appropriate starting level requires constant oversight, patience, and humor. Our solution is an on-line primer that each student can access from any computer with an internet connection. With Flash and Beatnik to provide interactivity and realistic sound, the student gets to "play a piano," first with the mouse and then from the computer keyboard as they learn note names, intervals, and melodies.

Taussig, Peter Elyakim (Yamaha Corp. of America)

Musical Sculpting - Shaping phrases without playing an instrument

Musical Sculpting is a MIDI based system for learning to shape phrases without the need to play a musical instrument. The system utilizes routines that reduce musical expression to just three variables, the musical equivalent of the three primary colors. Learners can produce any conceivable phrasing effect by manipulating these three variables in a graphic environment. Musical Sculpting has two distinct uses, for music students and for general learners. Music students would use the system as a "phrasing tutor" in conjunction with a Yamaha Disklavier PRO acoustic piano . General learners will be using the system as an introduction to creative

music-making that requires no playing skills and requires no keyboard. Both application will be demonstrated.

Taylor, Jack (Florida State University)

See Deal, John (*The Status of Technology Integration in College Music Methods Courses: A Survey of NASM Colleges and Universities*)

Taylor, Stephen (Illinois State University)
Creating interactive multimedia with Max/MSP

Videogame and multimedia producers today are experimenting with different types of interactive music to accommodate user actions. Cycling 74's Max/MSP, an object-oriented musical environment for MIDI and digital audio, offers much greater flexibility than most other solutions, including filtering, algorithmically generated music, and changes in harmony, instrumentation, tempo, etc. An onscreen virtual environment (an excerpt from the author's multimedia work in progress, a kind of "video opera/game") will demonstrate some of the interactive capabilities of Max/MSP.

Walls, Kimberly (Auburn University)

See Reese, Sam (*Addressing Music Standards with Technology*)

Webster, Peter R. (Northwestern University), David B. Williams (Illinois State University)
Creating Music Technology Course Work for Higher Education Session I: Designing Introductory Courses and Performing Experiences

Session I will focus on approaches to developing introductory courses in the undergraduate and graduate curricula for college and university music programs as well as performing experiences for students to work with MIDI and digital sound technologies.

Webster, Peter R. (Northwestern University), David B. Williams (Illinois State University)
Creating Music Technology Course Work for Higher Education Session II: Multimedia and Web Design Courses

Session II will highlight the design of more advanced course work in multimedia and web

development for applications in music. We will present the case that such a course is a logical extension of the introductory course described in Session I and that this second course can be designed to appeal to a wide audience. The authors will present the results of a survey of schools of various sizes around the country and will use examples from this survey to provide an overview of exemplars. For both Sessions the presenters will develop a matrix showing the structure of the course for both quarter- and semester-system and the course content, a list of alternatives for the course design, and web links to appropriate resources and to the exemplars collected from the survey.

Welbourne, Todd (University of Wisconsin, Madison)

Performance for MIDI Keyboards & MAX

Williams, David B. (Illinois State University)

See Webster, Peter R. (*Creating Music Technology Course Work for Higher Education Session I: Designing Introductory Courses and Performing Experiences*)

Williams, David B. (Illinois State University)

See Webster, Peter R. (*Creating Music Technology Course Work for Higher Education Session II: Multimedia and Web Design Courses*)