TWO NEW COURSES IN COMPUTER MUSIC PERFORMANCE @ BERKLEE: ALTERNATE CONTROLLERS AND THE TECHNO/RAVE ENSEMBLE

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Abstract

At the Berklee College of Music in Boston, and with generous support from The Interval Research Corporation, I have added two new classes to the Music Synthesis curriculum – Research in Alternate Controllers for Performance and the Techno/Rave Ensemble. These performance-oriented courses balance my current advanced elective offerings in sound design and composition: Sound Design and Synthesis Theory with Csound; DSP-based Composition and Remixing with SoundHack, Hyperprism, Peak, Pluggo, and Csound; Interactive Multi-Media System Design with Max/MSP; ElectroAcoustic Composition & Aesthetics; and the Over the Edge concert series. In this studio report, an overview of the curriculum for the Alternate Controller class will be presented and several student projects will be showcased. Also, my “spin” on coordinating, managing and “writing” for the Berklee Techno/Rave Ensemble will be discussed and some video and audio footage from their Underground Ambient and Pure Voltage concerts will be featured.

INTRODUCTION

The Berklee College of Music is the world’s largest independent music college and regarded internationally as the premiere institution for the study of jazz, pop, rock, film and electronic music. The emphasis at Berklee is on “making it” – building a successful career in one of the many areas of the music industry. Performing, writing, arranging, producing, recording, managing, marketing, teaching and programming are but some of the career paths for which the Berklee student is trained.

More than a music college, Berklee is a mirror image of the music industry. In state-of-the-art recording (Figure 1), film/Foley (Figure 2), post-production studios, and several open-access MIDI and media labs, the 3000 full-time students, from over 75 countries, work day and night under the guidance of an expert technical staff of over 200 graduates and 300 full-time and 100 part-time “gigging” faculty members.

At Berklee, there are four divisions: Technology, Education, Performance, and Writing. Under these, one can choose from 22 majors, or choose to declare as a 5-year dual major (Figure 3).
Music Technology: Music Production and Engineering

In the Music Technology Division, the Music Production and Engineering Department offers students the opportunity to build and hone the skills required of today's music producers and engineers under the tutelage of a Grammy and gold record winning faculty (Figure 4). The department's 12 recording studios contain professional-level equipment and support a busy roster of classes (Figure 5), faculty demonstrations, visiting artist clinics, and nearly 10,000 hours of hands-on student projects. For Music Production and Engineering majors, the department coordinates an internship program and assists with career guidance.

Music Technology: Music Synthesis

Under the guidance and supervision of leading industry professionals, the Music Synthesis major receives computer-based training on analog, digital, and hybrid systems in one of 5 multi-station synth labs (Figure 6).
The major offers five areas of concentration: 1. Performance – focuses on developing the fundamentals of synthesis and performance skills through participation in ensembles and the preparation and performance of a major recital. 2. Production – emphasizes the creative and technical decisions necessary in synthesis and production for studio environments, while affording you the opportunity to build a portfolio of original work comprised of the sounds you create. 3. Sound Design – explores the world of electronic sound creation and manipulation and offers you an opportunity to build a portfolio of original synthesized or processed sounds for a variety of musical situations and instrumental combinations. 4. Multimedia – teaches the fundamentals of audio production for CD-ROM, DVD and the Web, and includes introductions to video and programming concepts that will enable you to work collaboratively with other multimedia professionals. 5. Computer Music – emphasizes computer programming skills and their application toward innovation in sound design, performance and composition (Figure 7).

**ALTERNATE CONTROLLERS**

For five semesters now, I have been offering a research-oriented class in alternate controllers and C++/Max programming at Berklee. Between 6 to 10 students have enrolled each semester. Their specific performance and programming interests always had something to do with the final projects that they undertook to realize, but they were not given total freedom to devise and pursue their own research. Rather, they were presented with weekly demonstrations and, for most of the semester, were required to do a series of “etudes” based on the presentations (Figure 8).

In addition to these studies, each student is required to do an in-class presentation on a commercial alternate MIDI controller such as the DrumKat, MalletKat, ZenDrum, Guitar and Wind controllers. And each student is required to develop one of their “topical etudes” into a musical composition, installation, performance, improvisation, etc., and give a 15 minute lecture/demonstration on my Beyond MIDI lecture series in the Music Synthesis F12 recital hall (Figure 9).

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**Figure 6.** Music Synthesis Faculty at Berklee.

**Figure 7.** Music Synthesis Courses at Berklee.

**Figure 8.** Alternate Controller Lecture Topics

**Figure 9.** Music Synthesis F12 Recital Hall. The photographer is standing in front of a wall of synthesizer, signal processing, mixing, recording gear and computers along the left and back walls of the stage.
THE TECHNO/RAVE ENSEMBLE

One of the more popular, interesting and controversial classes that I offer and direct is the Techno/Rave Ensemble. In fact, this class is actually offered in Berklee’s Ensemble department. At Berklee, every student is required to declare a principal instrument, take two years of private lessons at the college on that instrument and play in various ensembles during those first two years as well. All students are given ensemble ratings every year, based on their entrance audition, and yearly performance proficiencies. Performance majors generally have ratings of 7’s. (Players with 8’s are usually gigging with Gary Burton!) Most average musicians have ratings of 3’s and 4’s. Ensembles in the college focus on musical genres and artist’s repertoire. The better ensembles are featured in concert performances with the best being features in the artist’s repertoire. The better ensembles are featured in concert performances with the best being features in the Berklee Performance Center.

Since the Music Synthesis Department has our own concert hall (Figure 9), my Techno/Rave Ensemble has a regular venue; Our goal is two live interactive multimedia shows per semester – Underground Ambient and Pure Voltage. The first is more sound-object oriented. The second more illbient, drumnbass, house, and dub.

I do not require specific ratings for my ensemble. Rather, I expect them to know the genre, to have done some production and composition in the style, and to have taken my Composition, Max, or Alternate Controller classes. Further, unlike the other ensembles, that play traditional charts or do pop, funk, jazz, metal, new age, hip-hop, and fusion covers or arrangements, all the music performed by the Techno/Rave Ensemble is collaboratively composed originals by the students in the group. For weekly rehearsals and meetings, my ensemble has access to two large “ensemble rooms” that are outfitted with computers, two 5-foot racks of MIDI, Sampling and Recording gear, a stereo PA, 4 guitar amps, turntables, a drum kit, and three MIDI keyboards. Students from the ensemble can sign out these rooms and compose/rehearse their pieces every night of the week from 6-midnight. (And they do!) They are also allowed to sign-out bring downstairs any of the department’s “floating” synth and signal processing gear – MIDI guitars, drums, radio-batons, Nords, Rolands, Arps, Korgs, Kymas, Yamahas, etc.

During class time we meet, talk, listen, and analyze favorite compositions by Brian Eno, Bill Laswell, Paul Miller, Richard James, Simon Posford, Trent Reznor, Moby, Kim Cascone, BT, Future Sounds of London, Panasonic, Lamb, Underworld, and Orbital. We jam for a few weeks to get to know each other a bit and then we begin to form composing duos and trios that schedule evening and weekend writing sessions and rehearsals. Several weeks before the concert, these core groups bring back their ideas and expand them by adding other members from the group and getting group feedback on the form, structure and content. An all night rehearsal two days prior to each show usually does the trick to work out the program order and the patching and mixing logistics.

In the Music Synthesis Department, all our labs and concert halls are equipped with ceiling mounted color LCD projectors. As you might well know, psychedelic lights are pretty important for a successful rave. So, from the very beginning, the idea of accompanying the performance with graphics from Xpose, Nato, Max, Cathuga, Bomb, Pixel Toy and student prepared video collages done for from their Multimedia classes in Premiere is encouraged. These always add a nice complimentary element to all the live tweaking, and spinning on stage during the show.

CONCLUSION

For more than twenty years now, I have been personally involved in alternate controller research and interactive computer music performance. But in my fifteen years of teaching Music Synthesis at Berklee, I could do little more than demonstrate these exciting and important capabilities in an occasional faculty seminar. Finally, because of the generous support of Interval Research I was able to purchase some “esoteric” Radio-Baton prototypes and some less “mainstream” PC hardware, Lightning and Thunder MIDI controllers, etc., to support student research in this area. Further, the belief in the “commercial” value and career potential of undergraduate research as evidenced by the support of the new Berklee Provost, Harry Chalmiers and VP Dave Mash have allowed me to lay the groundwork for some exciting new directions at Berklee.

Acknowledgements

Thanks to the Music Synthesis students at Berklee for their inspiring and creative music, programs and performances. As always, their musical works are the proof that my courses work. Thanks to Berklee VP David Mash for his constant and continued support of my “ideas” and Provost Harry Chalmiers for bringing his “new vision” to Berklee and allowing me to be a small part of it. Thanks also to Bill Verplank from Interval Research, and to my good friend Max Mathews from Stanford University whose input, feedback, advice, and inspiring lectures, have been instrumental in this exciting new curricular initiative. Finally, thanks to Interval Research, Inc., whose financial support made possible many of these new approaches to teaching music technology at Berklee.