Plugged In

Learning Electronic Percussion

by Arthur Nelson

A Student's Guide

I t's a little surprising when you think about it. Electronic percussion instruments have been around for quite a while, MIDI is pushing 20, and every year technology more drastically changes the way we create, perform, and experience music. One might think that by this time, electronic percussion instruments would have taken their place alongside traditional percussion instruments in our institutions of higher learning, but that doesn't seem to be the case, at least not at every school.

While many colleges and universities include a drumKAT, malletKAT, or V-Drums kit in their studio's inventory, surprisingly few percussion programs take the leap to include electronic percussion curriculum. Plenty of trade schools specialize in emerging technologies for the arts, but where can you go to get a broad musical and general education (along with an accredited degree), and still find a percussion studio that is electronic percussion friendly?

After putting out the word in the educational grapevine, we found a number of schools that integrate new technologies into their students' educational experience. Our list examines some unique ways that college and university percussion programs add technology to an already busy student schedule.

KENT STATE doesn't have a dedicated electronic percussion program, yet it requires all music majors to take a course called Acoustics and Technology in Music, where students get into a Mac-based computer lab equipped with keyboard workstations, sound modules, and a good selection of software.

Percussion professor Ted Rounds makes sure percussionists can also go further into technology, and assigns percussion ensemble parts that include electronics. Nearly everyone in the studio has had some experience playing on the Roland V-Drum electronic kit and the malletKAT (which is also used often at steel band gigs).

"Anybody who expresses the least interest in using the gear gets my full attention." Rounds says. "My favorite lesson comes after students have had a chance to play with the kit often enough so it begins to get recreational. At about lesson number three, I unhook the whole thing, leave the manual out, go take a break, and return to find out if the student

could get everything hooked back up."

The studio's computers offer students a chance to become acquainted with some of the more popular music software packages such as Finale, Sibelius, MicroLogic, and Sound Forge. "Band In A Box has become a favorite of students who take the opportunity to use the MIDI accompaniment system I installed," Rounds adds.

UNIVERSITY OF ALASKA FAIRBANKS gives percussion students lots of cool gear to play with. A sampling of the hardware in their technology lab includes two Mac G4 computers, a Dell Pentium 3 PC, a video projector, three Mackie boards, a pair of Alesis active monitors, three Kurzweil K2600 samplers, a malletKAT Pro, two drumKAT Turbos, an Alesis DM5 module, a Roland JV 1080, three Kurzweil K2600 XS's, a Roland JV 8080, a MOTU 896 audio interface, a MOTU 828 audio interface, and an Emagic Unitor 8-channel MIDI interface.

Scott Deal, Associate Professor of Music, says that his students have a wide variety of options for exploring music technology. "Our students are able to work on MIDI and electro-acoustic solos, which include tape and percussion pieces, as well as solo works for malletKATs and drumKATs with sound modules. They've performed works by composers such as Emma Lou Diemer, Robin Cox, John Van der Slice, John Luther Adams, Scott Deal, and the catalog of works that are available commercially."

Courses at the University of Alaska Fairbanks include Introduction to Music

Technology, Learning Logic Audio, and Music Technology Practicum – where learning how to use the gear and software is treated like learning a traditional musical instrument, with lessons, master classes, and an individually designed learning track created in cooperation with Dr. Deal.

A new and exciting application of technology comes by way of the Internet 2 network. Scott says: "We are developing distance delivery with Internet 2 in cooperation with a consortium called the Access Grid, and within that group, a sub group called Art on the Grid. This spring we will be hosting a group of master classes that will be conducted with multiple sites internationally. Artists currently slated to give sessions are still in a state of flux, but will certainly include players and educators of the highest quality."

DEL MAR COLLEGE is a two-year junior college in Corpus Christi, Texas. It boasts a full complement of music programs and degrees, and was in fact the first junior college to be accredited by the National Association of Schools of Music.

At Del Mar there are four courses that percussionists take, even though they are not required by the degree program: Electro Acoustics 1 and 2, Recording Techniques, and Music for Multimedia. The EA courses cover all of the basics: MIDI, digital audio, music

> "Access to technology is an absolute must when you live in the middle of a cornfield and the University of Iowa makes certain that we have what is needed to succeed."
> —*Dan Moore*

notation, sequencing, and programming. Other courses are more highly specialized and advanced.

Students have the opportunity to work with software such as: Logic Audio Gold, Sibelius, Sound Diver, Reason, Final Cut Pro, and Pro Tools. The main gear in the lab includes a Kurzweil PC-88 (used primarily as a controller), and JV-2080, Ultra Proteus, and E-mu 6400 sound modules. Del Mar owns a good variety of percussion-based controllers, and students have access to the V-Drums, malletKAT, or drumKAT as needed for projects. In addition, students use the software synthesizers/samplers built into Logic Audio

such as the ES1 and EXS24.

Student projects are very liberal in terms of sonic content, but controlled by the use of required parameters. Percussion professor Paul Bissell told us about a typical two-week assignment called "Freeform Plus." It's an original composition or arrangement of a song using various banks of the JV-2080 and/or Ultra Proteus.

Assignment parameters include: 1) Use of Logic Audio environment with multiple arpeggiators, delays, transformers, instruments (as targets), channel splitters. 2) The student must be able to explain cabling and what each object does and how it affects the other objects along that cable chain. 3) Final sounds must be 50 percent originally found (not from template) within the JV2080 or Ultra Proteus. 4) Quantization, loop, and transposition must be used on some sequence objects where needed. 5) Use volume and panning automation in the sequence. 6) Minimum of three logical screen sets showing needed information. 7) Environment objects should be named to represent what they are. or what they do. 8) Reason loops may be used to augment the primarily MIDI composition.

Bissell says that whenever Del Mar students get started in digital audio projects, their creativity really shines: "One of the best I remember was a student combining Abe's 'Memory of the Seashore,' Pearl Jam, Hindemith's 'Symphonic Metamorphosis,' and much of the melodic material from Hollinden's 'Whole Toy Laid Down.' At first the material was used in isolation like motives, but at the end, he presented *all* the material in time and in key. It was brilliant! This student now works for Apple Computer."

THE UNIVERSITY OF IOWA studio houses its own computer-based digital recording system built around a Mac G4 running Pro Tools 6.1, along with a variety of hardware and software sound processing, sequencing, and sampling tools. An excellent collection of microphones and enough hard disk space to record several hours of 32-track audio round out the studio's arsenal.

To date, Iowa Percussion has released two full-length recordings that were created completely in house. Students also utilize the studio to develop audition materials, demo projects, and to create original compositions or performance materials for use in recitals. Past projects have included original compositions for live percussion with audio accompaniment, as well as preparation of performance materials for works such as Steve Reich's "Vermont Counterpoint" and Paul Smadbeck's "Rhythm Song."

UI Senior percussion major Matt

1. Members of CrossTalk in the studio recording "Alias"

2. The Alaska Media Arts Center at the University of Alaska Fairbanks

3. The DrumTechs from Georgia Tech

4. Dan Moore and Matt Grundstad at the University of Iowa

Grundstad was recently awarded first prize in the Sabian North American composition contest called the "Ballad of the Dogman," in which contestants were asked to create an original composition to the provided text about a man with superhuman hearing who selects cymbals for Sabian. For his winning composition Grundstad won a trip to the Sabian Factory in Canada and a dream set of cymbals. Grundstad completed the recording using the UI studio.

In addition to the digital recording equipment, Iowa Percussion makes use of a variety of MIDI controllers such as the Zendrum, drumKAT, malletKAT, the Yamaha DTX drum trigger system, and a one-of-a-kind MIDI-marimba (developed by Iowa music professor Dan Moore). A variety of samplers, sound modules, and a state-of-the-art sound reinforcement system complete the percussion inventory.

For some 40 years Iowa has been home to Iowa Electronic Studios. They've produced a collection of free musical instrument samples that can be found at their website: http://theremin.music.uiowa.edu/index.html

GEORGIA TECH doesn't offer a music degree, but has a strong music program and a large number of gifted engineers with musical talent. Georgia Tech came up with a unique solution to a unique problem: how do you satisfy the creative needs of the engineer who is also a musician?

Seven years ago, the DrumsTechs formed as a traditional MIDI ensemble with keyboard

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—*Norman Weinberg*

synths and percussion controllers, performing arrangements of traditional pop, jazz, and classical works. A happy coincidence occurred that changed the direction of the group. Chris Moore, the group's director, describes the group's genesis like this: "Around the same time, a new course called Music Interface Design, surfaced through collaborations with music department professors and research scientists from the IMTC [Interactive Media Technology Center] at Tech. This convergence would prove to be a key movement in the development of our new instrumental ensemble. The Industrial Design major could design the aesthetic, the Mechanical Engineer could build the physical, the Electrical Engineer could run the wires, and the Computer Science major could program it. It

was a perfect marriage."

With so much creative juice oozing from the engineering sector, it's no surprise that the group makes most of its controllers from scratch. They design and perform with instruments that use an infrared sensor to measure the distance from a mallet or hand to the playing surface, and created three 8' x 10' MIDI panels wired with triggers. One of their most creative controllers is the MIDI couch – a pullout sofa with 25 triggers and built-in speakers (subwoofer included) – designed to create deep grooves while watching TV!

"The intention of this group from its inception has been to build on percussive musical content and provide an alternative way to experience a percussion ensemble concert," Moore says. "Musical content and musicality of performance is always at the forefront of each conception as we give the students the compositional and creative freedom to create a total performance from the tools they have learned in their engineering courses and their studies in music."

THE UNIVERSITY OF ARIZONA in Tucson has two faculty members that teach percussion technology to students in the program. Norman Weinberg is the Coordinator of Percussion Technology and Robin Horn is an Artist in Residence who specializes in drum set and electronic drum set applications. Together they co-direct CrossTalk, the UA electronic percussion group.
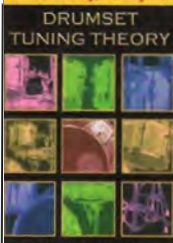
While playing drumKATs, malletKATs,

trapKATs, Zendrums, HandSonic, and DTX electronic percussion systems, this nine-member group is shredding the envelope of electronic percussion. The group doesn't play traditional percussion ensemble literature electronically. Instead, the philosophy of the ensemble is to create and perform new works and offer unique musical opportunities and experiences to its members and their audience. Both Weinberg and Horn compose original music for the group, have commissioned several composers to write works, and two student group members wrote pieces that have become part of CrossTalk's repertoire.

"In CrossTalk, students ranging from freshmen to DMA candidates work together with the very latest digital music hardware and software," Weinberg says. "Students are responsible for programming their MIDI controllers and designing the sounds they will play. Students are encouraged to create, compose, and approach their music in new ways with new tools."

CrossTalk has performed at several significant musical events. They have been featured performers at the Toronto 2000: Musical Intersections Conference; state percussion festivals in Arizona, Nevada, and California; and have presented Showcase Concerts at two Percussive Arts Society International Conventions (1999 and 2003). In 2002, CrossTalk produced both an audio CD entitled *Alias* and a 30-minute video documentary that has been distributed throughout the world. If you want to hear and see this group in performance, portions of the video can be downloaded at the Alternate Mode web site by going to alternatemode.com/videos.Shtml.

CrossTalk rehearses twice a week as a group, and both Weinberg and Horn meet with students outside of rehearsal to offer individual instruction on programming, sound design, and MIDI techniques and troubleshooting. "While we've taught electronic percussion concepts in a classroom-style setting, we've found that getting the students to dive right in and get their hands dirty with the gear has resulted in a better learning experience," Weinberg explains. "Since students are performing with their peers in front of large audiences, there is a strong desire to produce the highest quality production they can."

If a student enters the group as a novice, they are required to get all the basic electronic percussion concepts down quickly. Students that already have a good knowledge of electronic percussion are encouraged to go even further and experiment to push their abilities and the technology. Some of the students in CrossTalk have gone the extra mile and won grants to commission original compositions for solo drumKAT and included their own

original electronic percussion compositions on their student capstone recitals.

BERKLEE freshmen are now required to purchase a G4 laptop, with an Oxygen 8 keyboard controller, upon entrance to the school. All students get the software synthesis program Reason with this purchase and, additionally, different departments have different software requirements and configurations. Currently the percussion department has no fixed configuration, although they are in the process of determining the future music software needs of the drum set and percussion principal.

Steve Wilkes currently teaches electronic percussion both at Berklee, where he is a full-time Associate Professor, and at the New England Conservatory. In addition to his expertise in electronic percussion, virtually all of the Music Synthesis Department teachers and a few of the Music Production and Engineering Department faculty at Berklee have some degree of electronic percussion savvy.

"Berklee Percussion Department students who enroll in the Contemporary Electronic Percussion course study in a lab equipped with multiple workstations," Wilkes says. "These workstations all contain a drumKAT – each with a 4.0 chip – a Korg Triton rack unit, an Alesis DM PRO or DM 5, various effects processors, a Mackie mixer, and MOTU MIDI patch bay. Students have the option of incorporating their own laptops into the mix. Over the course of the class they learn electronic percussion basics and steadily build on this knowledge until, for the final project, they perform an original solo composition on the drumKAT. At their best, these final projects are all goose bumps and grins. They are truly inspiring and gratifying."

NEW ENGLAND CONSERVATORY'S Electronic Percussion class encompasses an entire school year and also uses workstations with drumKATs paired with Korg and Alesis sound modules. This class is required for all graduate percussion students and optional for all undergrads. In April of this year, the class will perform in NEC's Jordan Hall as part of the annual percussion recital.

Wilkes is thrilled with the dedication and enthusiasm his students have for his courses. "It is important to note that virtually without exception, all of the students who enroll in these classes are *really* into it," he says. "Happily, I have been seeing higher and higher enrollments each school year. At Berklee, the Contemporary Electronic Percussion course usually reaches the maximum limit in population and we have sometimes had to open more than one section. This is good news for all lovers of electronic music!"