

CREATE, MAT, and UCSB Music present

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# $\pi$ and beyond

**12 April 2012**  
**8 PM, Lotte Lehmann Concert Hall, Music Building**  
**University of California**  
**Santa Barbara**  
**USA**

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**1** *G.meta* (2012) CREATE Ensemble [10:00] Matthew Wright (Director), Ori Barel, George Blake, Anthony Garcia, Charlie Roberts, Tim Wood, Karl Yerkes

Live Coding is a genre of performance in which code is written, evaluated, debugged, and refined on stage. The code defines processes that synthesize audio for musical performance. We start with a blank page, writing all of the software for each performance from scratch. Each performer has a laptop for writing code to contribute to the performance. Performers send blocks of code to a central computer, which generates the sound everyone hears and also projects code additions in a scrolling view for audience members to follow. We use Charlie Roberts's Gibber as a live coding environment. Gibber runs inside of Google's Chrome web browser. Try it at <http://www.charlie-roberts.com/gibber>

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**2** *microwind* (2010) Kiyomitsu Odai [12:00]

is based primarily on the analog technique called "microwind synthesis," in which one generates continuous electronic sounds by sucking up a microphone with a vacuum cleaner. The sounds gained out of the action are mostly noises, but the spectra of them can be altered by delicately changing the distance or angle between the hose of the vacuum and the microphone. All the analog parts of the recording process for *microwind* are based on the vacuuming action, and the signals out of it is then digitally processed in real time and non-real time for compositional purposes. This piece is divided into two sections. In each section, eight different takes are recorded into discrete monaural tracks and mapped onto the eight-channel sound system. In the first section, a condenser microphone is used and the raw recordings out of it are multi-tracked along with some ornamental granulated sounds; in the second section, multiple contact microphones attached to paper are employed, and the signals from them are processed in real time through a digital dynamic compressor with a high compression ratio so that it generates a feedback loop which causes a high creaky tone over the noise texture. In addition, the machinery noise of the vacuum has a strong bias in its frequency domain that peaks sharply at 530 Hz, which functions as the "tonal center" of the piece and is exposed at the beginning of the second section. In order to match the isolated sine tone, the recordings from the contact microphones are all phase-vocoded and their magnitude threshold values are enveloped so that they begin with the single creaky sound out of the feedback loop and go back to the very noisy sound mass. All the digital processing units used in *microwind* are written in SuperCollider 3. The composer received Sherrill C. Corwin Metropolitan Theatre Award 2010-2011 (first place in electroacoustic music) for this piece.

**Kiyomitsu Odai** (b. 1978) is a composer/piano improviser born and brought up in Tokyo, Japan. After receiving a BA in law from Waseda University in Tokyo, he moved to the USA. His very systematic approach to composition and quite intuitive one to improvisation, as an integrated will, have aimed at wisdom beyond system. He has studied with Don Malone, Hilda Paredes, Roscoe Mitchell, and Clarence Barlow, and is currently pursuing a PhD in music composition at University of California, Santa Barbara.

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### **3 Couplings (2012) Thom Blum [6:35]**

Independent and distinct threads of sound come into contact, or "couple," at the exact instants at which they strongly exhibit either complementary or common sonic attributes. These are transient moments in which the different sounds might have been one. Initially these couplings are expressed abruptly, as if a switch was encountered that forced a change in the sounds' established courses or behaviors. Approximately midway into the piece the coupling takes the form of a fusion of these sounds, creating a new and singular sound that is defined by the combination of the input sounds' dominant, or most perceptible, attributes. This marks a unifying moment in the piece and continues to define the work until the near-end, at which point some of the components detach and separate from the fused sound and reestablish their presence and independence.

**Thom Blum** has been composing electroacoustic music since 1972. His teachers and mentors include James Tenney, Ingram Marshall, and Curtis Roads (California Institute of the Arts, 1972-1974), Thomas Whitney and Charles Csuri (Ohio State University, 1975-1977). His works are presented internationally in concerts, festivals, radio broadcasts, and galleries. Some recent performances include The 2011 and 2012 San Francisco Tape Music Festivals, The Logos Tetrahedron Theater 2011 concert series (Ghent, Belgium), a sound installation (*Timepiece*) at Ohrenhoch der Geräuschladen gallery (2010 Berlin, Germany), and compositions for *group A* dance company's performance of *FIELDS4* (2009 San Francisco). In 1978 he cofounded The International Computer Music Association (ICMA), and he is a member of the San Francisco Tape Music Collective. website: [www.thomblum.com](http://www.thomblum.com)

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### **4 The Princess of the 9 Cave (2011) Jeremy Haladyna [12:44] In three movements [electronic tracks in "scale 2012:" lowest note 3114 B.C., highest note 2012 A.D., scale by Jeremy Haladyna] Anthony Paul Garcia, Marjan Riazzi/4-hand marimba; Allison Bernal/vocal**

This three-movement piece takes place all underground. I recorded its dripping ambience in an actual Belizean cave, St. Herman's on the Hummingbird Highway. But Guatemala, not Belize, provides the legend that proved the impetus to its creation. At the time of the Conquest, Iximche [Quiche, "Kumarcaaj"] was the capital of the Quiche Maya nation. The pending arrival of Pedro de Alvarado during his subjugation of Guatemala had the Maya so full of foreboding that they hid their women and children in a man-made cave under the city. Today, this cave counts 9 altars as one progressively descends, presumably to match the 9 levels of the Mayan underworld. One Quiche princess was deemed so special that she was secluded in a special cavern underneath the main floor level, some fifteen feet below, which required she be lowered down with ropes. Alvarado, upon arriving, became so suspicious of the situation that he burned the Quiche chiefs at the stake, which broke the national resolve and assured his victory. As for the princess, she died down in the darkness of the cave. But the legend is one of her redemption: her spirit, far from defeated, exits the cave up into the roots of a tree and from there infuses the wood—the very wood from which the first marimbas will be made. And so the Princess and her spirit speak through the music of the Guatemalan marimbas! [source of legend: Ronald Wright: *Time Among the Maya*] I have long wanted to produce music in a scale that reflects the larger periods of Mayan time in a telescopic way, from the Mayan single year, through the periods of 20, 400 and 5200 ceremonial years. This is that music, cast now in a 37-note, non-octaviant system. The key to its development came by way of a mysterious Mayan time cycle that stands utterly outside those heard here. I'm speaking of the 819-day count, which is the

multiple of  $7 \times 9 \times 13$ . We're still not entirely sure how this count functioned, but note the number 9 as a principal factor! This is how the nine levels of the cave become salient, built into the very heart and soul of the mathematics you are hearing. The marimba, of course, is not able to alter its tuning, but therein, no quandary. This is the only one of my 3 Mayan scales that can peacefully coexist with equal temperament, there being at least one close cognate for each of the 12 common pitches of our common Western system. I allowed a one-tenth of a tone discrepancy [Mayan scale to Western scale] but no more. And so the marimba music had to be very carefully written to "chime in" on those equal tempered notes that would resonate well with their Mayan note-cousins. And this same alignment ordained Db as the key of the folk-sounding music I would write to conclude the piece.

**Jeremy Haladyna** is Director of UC Santa Barbara's *Ensemble for Contemporary Music*, holds prizes and academic qualifications from three countries. A laureate of the Lili Boulanger Prize and diplômé of the history-rich Schola Cantorum on Paris' Left Bank, he also holds advanced degrees from the University of Surrey (UK) and the University of California. He has taught undergraduate composition at UCSB since 1991, and was named to its permanent faculty in March 2000. His own past teachers include William Kraft, Karl Korte, Eugene Kurtz, Jacques Charpentier, and Joseph Schwantner. In addition to active performing, Jeremy teaches orchestration and is a senior faculty member of the College of Creative Studies, UCSB. In 2009 an integral album release entirely from the "Mayan Cycle" appeared on the *innova* label; a second album is currently in 2012 release.

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**5 From the Shadows (1987 revised 2012) Richard Boulanger [14:00], for Electric Violin, Radio Baton, Csound For Live. Performers: Richard Boulanger - Radio Baton, Takahiko Tsuchiya - Electric Violin with Custom Sensors Thomas Hass - CsoundForLive**

*From the Shadows* is a three movement chamber sonata (mvt1), concerto (mvt2), and duet (mvt3) that showcases an Arduino-based sensor violin developed and performed by Takahiko Tsuchiya, and CsoundForLive – the latest Max/MSP-based plugin version of Csound (using the `csound~` external) and running in Ableton Live (via MaxForLive), which is performed live on the Korg NanoKontrol by Thomas Hass and on the Mathews Radio Baton, by Richard Boulanger. All of the electronic accompaniment sounds in the work and the acoustic virtual orchestra are rendered in real-time in Csound and the Electronic Violin is also processed in real-time by Csound as well. A feature of the 2012 revision of the work is the way that the violin at times, actually plays itself and how Takahiko does some of the "bowing" by waiving his hands in the air. The context of movement one is that of a traditional violin sonata - yet a quite futuristic one in sound and technique. The context of movement two is more of a chamber concerto and in the middle the baton not only plays the string parts, but takes over as "violin" soloist which the "air" violin plays on it's own. The context of the third movement is a violin duet, or better, a violin duel.

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**6 Commercial Music (2012 World Premiere) Richard Boulanger [10:00], for 3 EuroRack Modular Synthesizers featuring MakeNoise, ADDAC, SnazzFX, Intellijel, Doepfer, and TipTop Audio Modules, especially the Phongene, Ardcore, WavePlayer, and Theremin. Performers: Richard Boulanger - EuroRack Modular, Thomas Hass - EuroRack Modular, Lee Ray - EuroRack Modular**

*Commercial Music* is a work for Three Custom EuroRack Modular Synthesizers performed by Lee Ray, Thomas Hass, and Richard Boulanger. Two of the players have ADDAC System Voltage Controlled FM Radio Modules and WavePlayer Modules and MakeNoise Phonogene Modules (granular samplers) in order to "capture" the Radio "commercials" and "commercial music" which becomes the basis of the work. Processing of the capture, granularized and triggered FM Audio will be done with The Harvastman and Doepfer VoltageController BitCrushers/Sample-Rate Reducers, and Intellijel Balanced Modulators. To control these 2 "racks", both player will be using a Doepfer Theremin and a MakeNoise Pressure Point

Module. The Third "rack" has more of a tonal/harmonic focus. Under the control of a Doepfer Trautonium, an ADDAC Nunchuck, and a MakeNoise René, a Synthesis Technology CloudGenerator and Morphing Terrarium, a Harvastman Piston Honda, a WMD Gamma Wave Synthesizer, a Flame Talking Synth, and some TipTop Audio Z3000 and Intellijel Dixie's passed through TipTop Z2040, an Intellijel Dr.Ocrtature and Korgasmatron, a Harvastman PolyVoks and a Topobrillo MULTI Filters. Randomization of these "harmonic clouds" comes from The ADDAC Systems Complex Random, Doepfer Quantized/Stored Random, MakeNoise/Wiard Wogglebug, and the SnazzyFX DreamBoat Chaos Generator. All three racks have voltage controlled DSP modules - A couple of Tip Top Z-DSPs and a Z5000 plus a couple of Doepfer VCDSPs. A feature of this piece is the premier of the SnazzyFX Ardcore Module - running Arduino "sketches" from Boulanger's Audio Programming Book! Can we find the music in the noise - the noise in the music? Where's the beat?

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**7 Remembering Max (2011 revised 2012) Richard Boulanger [6:00], for Electric Violin, Radio Baton, csGrain. Performers: Richard Boulanger - Radio Baton, Takahiko Tsuchiya - Electric Violin with Custom Sensors, Thomas Hass - csGrain for iPad**

*Remembering Max* is a lovesong for the father of computer music - the now patron saint of computer music.

**Lee Ray** is a musician, recording engineer and producer. His compositions have been heard in films, media art, recordings and live performances. Current projects include adaptations for harp of prepared piano music by John Cage, a documentary about Cage's "Song Books", a staging of "La lontananza nostalgica utopica futura" for violin and pre-recorded sounds by Luigi Nono and collaborations for live performance. His PhD, in computer music, is from the University of California San Diego.

**Thomas Hass** is a composer and software developer. His passions are electronic composition and developing tools that will inspire musicians to create meaningful sounds. He spent his childhood in the SF Bay Area where he met his wife April. Thomas is currently studying at The Berklee College of Music where he is majoring in Electronic Production and Design. He is the 2012 TDK award recipient at Berklee and will complete his degree in the summer of 2012. Currently he has been developing Csound-based Music and Music Therapy software for the iPad. His most recent app, which is featured in this concert, is "csGrain" and was one of the top 10 paid music apps in its first week of release.

**Takahiko Tsuchiya**, from Japan, is an undergraduate student at The Berklee College of Music majoring in the Electronic Production and Sound Design. Prior to Berklee, he studied Liberal Arts and Ethno-Musicology at International Christian University in Tokyo. At the age of 15, he won the first place in the JYDA Creative Ideas Contest, with over 8000 contestants, giving him a full scholarship for high school exchange program in the United States. At Berklee, he was granted the department award and scholarship, the Roland award, twice in consecutive years. As a violinist, Tsuchiya has played in several professional orchestras and chamber groups in the U.S., Japan and Ireland. He has also traveled to Germany with Dr. Richard Boulanger, where they performed electronic chamber piece for the violin and radio baton. As a technologist/developer, Tsuchiya has developed various musical tools, including research tools for Berklee's Music Therapy faculty that integrate bio-sensors and a custom playlist/recorder, as well as intelligent music software for blind musicians. He has also created a set of unique software instruments, called Table-Morphing synths, for the CsoundForLive project that are commercially available and that he and Dr. Boulanger will be using in the concert tonight.

**Richard Boulanger** <[rboulanger@berklee.edu](mailto:rboulanger@berklee.edu)> was born in 1956 and holds a PhD in Computer Music from the University of California at San Diego. There he worked at the Center for Music Experiment's Computer AudioResearch Lab (CARL) and composed the first ever CMUSIC composition entitled "Two Movements in C." At various times since then, he has continued his computer music research at Bell Labs, CCRMA, The MIT Media Lab, Interval Research, Analog Devices, and IBM. Over

the years, he has collaborated, performed, lectured, and published extensively with the leading figures in Computer Music: Max Mathews (The "father" of computer music and inventor of The Radio Baton), Barry Vercoe (the principal author of MIT Csound and Extended Csound for Analog Devices & OLPCsound for the OLPC laptop – <http://laptop.org>), John ffitch (developer of Csound5 – <http://csounds.com>), and BT (aka Brian Transeau - author of Stutter Edit, Break Tweaker & Sonifi). Boulanger is mostly known around the world for his work with and evangelization of Csound - one of the most powerful software synthesizer and signal processors developed at MIT. Recognized as an alternate controller virtuoso, Boulanger has premiered his interactive compositions at the Kennedy Center and appeared onstage performing his Radio-Baton and MIDIGlove concerto with The Krakow Philharmonic and The Moscow Symphony, and most recently with the TIMI Ensemble in Beijing. His music is recorded on the NEUMA, Centaur, and Stanford labels <<http://csounds.com/boulanger>>. Boulanger has been teaching at The Berklee College of Music for more than 25 years now; and the music and sound design of his students is all over the TV, radio, blockbuster films, and the top computer games. At Berklee, "Dr.B." is a Professor of Electronic Production and Design. His contributions and work have been recognized and honored with Berklee's first Distinguished Faculty of the Year Award and the President's Award. With his former students, Boulanger has started two companies: Audivation and Boulanger Labs and has commercially released Csound-based production and performance software for Macintosh, Windows, and the iPad. The most recent products are "CsoundForLive" <http://www.csoundforlive.com/> and csGrain <http://www.boulangerlabs.com/>. Boulanger is also known for his pioneering work in signal processing where in 1982 he was the first to do soundfile convolution and to realize its potential as a new form of morphing spectral synthesis and resynthesis. His *Dynamic Spectral Intersection* technology (the DSI Synth) is after 30 years finally today possible to realize in both hardware and software and is finally coming to market. Boulanger has published articles on computer music education and composition in major electronic music and music technology magazines, and has lectured worldwide. For The MIT Press, Boulanger has authored and edited two of the foundational textbooks in the field of computer music: *The Csound Book* (2000) and *The Audio Programming Book* (2010).

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NOTE SPECIAL WORKSHOP TOMORROW – FREE ADMISSION – LIMITED SEATING

LECTURE/DEMO ABSTRACT - Friday April 13 April 2012 3-5 PM, Studio Xenakis/Music 2215

### **Csound - Yesterday, Today, Tomorrow or... Cloning a Dinosaur**

Dr. Richard Boulanger, Takahiko Tsuchiya, and Thomas Hass  
Berklee College of Music  
Boston

In this lecture/demonstration, Dr. Richard Boulanger and two of Berklee's most brilliant and talented students will present an overview of Csound and show how even today, after 30 years, it both preserves the past and points to the future. Csound lives. In fact, Csound is arguably more alive today than it ever was. With the help of Takahiko Tsuchiya (who will focus on CsoundForLive), and Thomas Hass (who will focus on Csound for iOS), and the help of the students and faculty from UCSB, we will design, tweek, compose, and jam using only Csound and playing from USB MIDI Controllers, Wireless OSC-based Nintendo WiiMotes, Mathews Radio Batons, and Apple iPads, and together explore and possibly discover how Csound can be both one of the oldest and arguably one of the newest of computer music languages.