TALBERTRONIC FESTIVAL

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2017

◊◊ THE OBERLIN COLLEGE CONSERVATORY OF MUSIC PRESENTS ◊◊

Talbert ronic Festival

March 2-4, 2017
Oberlin, Ohio

Dear Friends,

The writer Bill Bryson observed that "few things last for more than a generation in America." Indeed, even in the slow-to-change world of academic institutions, it is often the case that non-traditional programs or departments come and go in a decade or two. And yet we gather this weekend in honor of John Talbert's retirement to celebrate the sustained energy and success of the TIMARA Department as it approaches the 50th anniversary of its origins. Our longevity has a lot to do with our adaptability, and our adaptability over the past 38 years has a lot to do with John. Even as he walks out the door, John remains a step ahead, always on the lookout for new methods and technologies but also wise in his avoidance of superficial trends.

Take a moment this weekend to consider the number and variety of original compositions, artworks, performances, installations, recordings, instrument designs, and other projects that John has influenced and help bring into being during his time at Oberlin. All the while, John has himself designed and built literally rooms full of unique and reliable devices that invite student and faculty artists to express themselves with sonic and visual media. Every bit

of the teaching and learning that transpires each day in TIMARA is influenced by John and will continue to be for years to come. Even when he knows better (which by now is just about always), he is willing to trust his colleagues, humor us faculty and our outlandish requests, and let students make personal discoveries through experimentation.

Please join me in thanking Tom Lopez for organizing these festivities, our wonderful TIMARA students for their help and participation, and the Conservatory administration for their support. Thanks especially to all of you who are celebrating with us, especially John's family and wife, Darlene, and those traveling from far and wide to be here in person, including TIMARA's former Chair and John's long-time collaborator, Gary Lee Nelson. We are grateful to have all of you in the TIMARA community, and the TIMARA community is forever grateful to John.

Peter Swendsen
TIMARA Department Chair
Associate Professor of Computer Music & Digital Arts

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John Talbert

My only musical training as a child was learning Gregorian Chant in Catholic grade school and piano lessons, first with the neighborhood piano teacher Mrs. Hutchinson, and then with Sister Carlisa at the grade school. During high school I played accompaniment for the school chorus under the stern eye of Brother Robert (Bear) Antonetti and with a Tijuana Brass Band Brother Robert put together for Hubert Humphrey Presidential campaign gigs.

Starting in 1969 at Indiana University, music was dropped for bit while I struggled with a Physics major and Math minor. Halfway through I thought it might be fun to go for a music degree too at the esteemed Indiana School of Music. I convinced them to let me in with an enthusiastic rendition of Chopin's Military Polonaise plus a convincing argument that I wanted to combine science and music studying in their electronic music department. In 1975 I was awarded a BS degree in "Music and an Outside Field" (the outside field being Physics).

In 1976, after a short government job at the Navy Yard in Washington DC, I received a graduate assistantship at the University of Illinois Electronic Engineering School. While there I was able to get an assistantship job with the Electronic Music Studio under the watchful eye of Scott Wyatt. My master's degree project was under Dr James Beauchamp building envelope generators for a minicomputer-controlled synthesizer.   In 1978 I was awarded a Masters Degree in Electronic Engineering.

In the fall of 1978 I started work as the Electronic Engineer for the TIMARA department of Oberlin Conservatory and have enjoyed 38 years there in the rapid,

ever changing field of Computer Music. Immediately after arriving at Oberlin I was presented with the task of interfacing a newly acquired Ohio Scientific desktop computer with the TIMARA department's Moog, Buchla, and Arp Analog Synthesizers and, for the first time in my life, I felt that I had found my place in the world. I dug into the task with relish designing and wire-wrapping a full set of computer programmable pulse outputs and inputs, control voltage inputs and outputs, timers and a cassette deck interface to store the programs. Analog synthesizers reached a kind of maturity with IC chip companies such as Solid State Music and Curtis Music. With these I am able to design and build an Octal VCA, a quad VCF, an expanded Aural Exciter, and a set of Analog Delays.

Over the years the Ohio Scientific interface was expanded to include connections with a Hybrid Synthesizer built by my predecessor, Sergio Franco and a Forth Language based programming package used to access all the devices. In 1980 Bell Labs donated their state-of-the-art prototype digital synthesizer, the "Alles Machine" which Professor Gary Lee Nelson and I worked on for several years. In 1983 MIDI arrived on the scene and I worked making MIDI interfaces for everything in sight -- the Ohio Scientific, Osborne Microcomputer (IEEE interface), Radio Shack computer, the Alles Machine, the Macintosh Plus. One very successful project was the MIDI Horn created in 1984 in collaboration with Gary Lee Nelson, one of the first MIDI wind instruments. In 1993, with a need for more MIDI control and some way to translate sensor data into MIDI commands, I completely reprogramed a Roland PG1000 slider box with its 56 sliders to output any MIDI command desired and attached an external box for connecting sensors.

In 1985, the college retired its Xerox mainframe and TIMARA was left without a host for our Xerox DACs. The department bought a Ridge 32C Minicomputer and I got the challenging job of interfacing all of our hardware devices with it. The Ridge Computer was eventually replaced with a slew of Macintosh desktop computers as I evolved into an IT Support Technician.

Over the years I have taught courses in both analog and digital circuitry. At the turn of the century a robust "Maker" movement grew out of microprocessors such as the Arduino. To take advantage of this movement, I revised my digital class material to cover the PicAxe and the Arduino. My most recent projects use the Arduino. I have connected old Game synthesizer chips to Arduinos. I've built all types of sensor boxes using the Arduino Micro to translate the sensor data to USB MIDI. The "Euro Mega Controller" is a rebuild of my very first project in TIMARA with the Ohio Scientific, only this time using an Arduino Mega and Euro Card format.

People ask me why I've stayed here for so many years in an age where people readily jump from job to job in their careers. My first thought goes immediately to all the great people I have had the pleasure of working with at Oberlin, both faculty and students. My second thought is that this job was always new and different from year to year. The changes in music technology were so fast and furious I sometimes wished that it would just stop for a year so I could catch my breath; but mostly, the changes were so amazing and exciting that I had a blast collaborating with the TIMARA faculty to move the program ever forward from year to year.

—John Talbert

TIMARA

Founders Olly Wilson and the late John Clough started teaching electronic and computer music at Oberlin Conservatory in 1969. The name TIMARA (Technology in Music and Related Arts) was adopted in 1973 by Ronald Pellegrino, Robert Moore, and Edward J. Miller. When Gary Nelson arrived at Oberlin in 1974, TIMARA was relatively new. It was also still a niche pursuit. By 1978, the program was expanding with exclusive faculty and a brand new dedicated engineer, John Talbert. In 1987, Oberlin created a freestanding TIMARA major. This was the first of two critical steps establishing the department's unique place in the world. Second was the dramatic 1989 overhaul of the facility itself. A few small rooms half-filled with HVAC equipment were transformed into a set of flexible studios packed with production and recording technology, including video tools. In 1999, Tom Lopez returned to his alma mater to teach computer music and digital arts. "There are no graduate students, so the undergraduates have complete access to all our resources," Tom explains. This, in his opinion, helps distinguish the TIMARA Department as "one o the leading programs of electronic and computer music for undergraduate students."

Festival Schedule

Thursday, March 2	3pm	**Workshop I**	Sky Bar
	8pm	**Concert I**	Clonick Hall
Friday, March 3	9am	**Workshop II**	Sky Bar
	4pm	**Lecdem I**	Clonick Hall
	5pm	**Reception**	Sky Bar
	8pm	**Open House**	TIMARA Studios
Saturday, March 4	12pm	**Lecdem II**	TIMARA Studio 2
	1:30pm	**Lecdem III**	Stull Recital Hall
	3pm	**Concert II**	Stull Recital Hall
	8pm	**Concert III**	Fairchild Chapel

ONGOING: ------------------- the studios are available for playing!

announcements will be posted in the TIMARA Studios Lobby

TIMARA Talbertronic Festival Workshop I

Sky Bar – 3pm – Thursday, March 2nd, 2017

Tocante Synth-Building Workshop   Peter Blasser

The Tocante line of musical instruments is "about" and "touching" the materials of electronics. Each touchpad represents a pitch according to industry "preferred numbers," chosen by old wartime engineers for non-musical purposes. Here they form a unique and haunting musical scale, not unlike that of a gamelan or the neutral intervals of Persian music. Beyond these base pitches, three golden *sandrodes* flank each touchpad; touching these androgynous nodes yields intermodulation, pitch and timbral shifts, and emergent chaotic masses. The instruments come in three flavors: thyris the triangle, bistab the square, and phashi the circle. The oscillators sound like a bowed string, a most powerful clarinet, and a howling serene whistle, respectively. Each responds to touch differently. Solar panels charge the onboard batteries that power the oscillators and a speaker. They are the perfect self-contained instruments for nightly music at the campground.

TIMARA Talbertronic Festival
Concert I

Clonick Hall – 8pm – Thursday, March 2nd, 2017

Mecxpression study 1   Steven Kemper
         CADI (configurable automatic drumming instrument) and live processing

Sift   Peter Swendsen
         stereo fixed media

Shadows no. 6   Aurie Hsu
         Aurie Hsu, *belly dancer*

Triptych   Tom Lopez
         digital video & vinyl record

State River City Stream   Travis Johns
         Travis Johns, *laptop*

TIMARA Talbertronic Festival Workshop II

Sky Bar – 9am – Friday, March 3rd, 2017

Solar Sounder Synth-Building Workshop   Peter Blasser

The sun energizes a solar panel on a box with an analogue synthesizer in it to sound out a speaker. Without batteries, the box reacts to gestures of shadow on its face and full darkness silences it. It sounds different on hazy days, cloudy days, sunny days. Outfitted in a thick-wall cardboard box, the acoustic object plays itself. I call it a "solar sounder".

In a recent order to my solar panel dealer, I purchased a couple of larger panels to prototype solar sounders. I found that 9 V at 3 W power a "speaking voice" speaker and a bit of circuitry to synthesize the sound. An electrolytic capacitor stiffens the current for the amplifier, but the box still reacts to changing light. Besides their solar panels, the boxes have no other playing interface such as knobs or switches; the art is not in the action of playing them, but placing them in the sun and listening. I think of these not as musical instruments, but installation tools.

Instead of offering a universal palette of sounds, the circuits focus on specific acoustic sounds. In this work, the analysis of three "voices" begins the task of emulation. For a solar-modified sonic environment, I chose a bird, Tibetan monks and the trains I hear at night. Consider the sound-making apparatus of each — a throat for the monk and the bird, and a horn for the train. Imagine its interface, how to control it and how it makes sound, to conceive a model for its timbre. Then consider the triggering brain and what triggers it to sound — territorial concerns, meditation, emergency or other contingencies. In the emulating medium (circuits or code), work backward from the brain, ending with the physical sound becoming electronic.

These three acoustic studies and their circuit emulations ask compositional questions: How closely to imitate? How far "off" can the imitation stray so as to evoke only a poetic allusion to the original? These questions inspire synthesizers in this piece, to excite a "hackerspace" that is enthusiastic for the many and varied implementation possibilities. Here, we hack not an object of technology, but an existing sound.

Solar power is a compositional constraint for these boxes; without batteries or a "stiff" voltage source, the circuit components can bend the sounds. The result reveals idiosyncrasies between designs and even between "exact replicas". As the sun moves through the day, the units change their sound under its influence; the shadows of trembling leaves make the sound rise and fall in the wind, and a passing cloud causes it to wilt.

In a solar sounder workshop, participants build and customize the following bird, monk and train circuits. The resulting ensemble reveals the unique properties of each piece; leveraging their differences, they paint a spectral smear around the emulated voice. A performance gesture arises from their response to sun and shade with sound and silence. The workshop organizer must curate a special space, with well-lit tables for solder working and sunny, reverberant spaces for the energy work.

Workshop participants can customize the sound of each box by changing capacitors, which set frequency and timing characteristics. In this way, the emulation alludes to the breadth of variation in virtual voices. For example, an electronic bird calls mournfully slow, beyond the physical capabilities of its living counterpart. Customizing the circuits by their capacitors contrasts with voltage control of synthesizer parameters: the physical choice and placement of components restricts each box to a certain range and mode of recitation.

TIMARA Talbertronic Festival

Lecdem I

Clonick Hall – 4pm – Friday, March 3rd, 2017

An Engineer's View of the TIMARA Department   John Talbert

In four decades with Oberlin's TIMARA department, John Talbert has gone from floppy discs to Arduino microcontrollers. This lecture / demonstration will introduce the various technologies that John has mastered during his tenure as the studio engineer.

Demonstrations of Talbertronic instruments by TIMARA students:

Jackie Milestone, *MIDI Horn*
Mary Fischer, *delay lines box*
Joe Misterovich, *TeleTalk arduino box*
Evan Deyak, *Majestic Radio arduino box*

TIMARA Talbertronic Festival Reception

Sky Bar – 5pm – Friday, March 3rd, 2017

Please join us for food in drink in the Sky Bar following John's lecture / demonstration in Clonick Hall. Everyone is welcome as we celebrate John's retirement from Oberlin College.

TIMARA Talbertronic Festival

Open House

TIMARA Studios – 8pm – Friday, March 3rd, 2017

Alles Machine   Judy Jackson
TIMARA lobby

The Wookie, Springboard, Instruments from Un[natural]   Kyle Hartzell
TIMARA lab

Video Reel   Gary Lee Nelson
TIMARA Studio 1

Robotic Percussion Demonstration   Steven Kemper
TIMARA Studio 2

The Goldberg Variation   Helen He, Daniel Marcus, Julia Mills, Liam Smith
TIMARA Studio 2

The Wishing Goat   Lyn Goeringer
TIMARA Studio 3

Raro and beyond: blending sculpture and electronics in gallery settings   Travis Johns
TIMARA Studio 4

Freedom   Will Johnson & Sage Jenson
TIMARA Studio 5

TIMARA Talbertronic Festival

Lecdem II

SonoMorphs   Gary Lee Nelson

At the largest dimension of our music we are concerned with something I call "phrase structure" (and used to call "event type"). This refers to the state, combination and role of all musical parameters as they define the character, mood and energy in a section of music or an entire composition. We ask and try to answer the question, "how does each parameter contribute to and define our music?" Variations of the parameters can be expressed on a sliding scale between extremes. The power of this approach is that such things are difficult to define and they are subject to individual artistic goals and tastes. It is what allows us to make music our own. What we can recognize between two phrase structures is simply that they are different and those differences can be chosen, combined and cast as characters in larger musical utterances. In the outline below, I have ordered the extremes of each parameter from simple to complex. My task with SonoMorphs is to find ways to express the ranges of each parameter numerically. Some of these expressions are simple. Others resist codification. My aim is always to have the output of SonoMorphs deserve the term, "musical."

TIMARA Talbertronic Festival

Lecdem III

Acoustic Experimental Instruments: Methods & Materials   Kyle Hartzell

Materials and methods used to make modern acoustic and electroacoustic experimental instruments and what these instruments are capable of in new music and sound design.

Thinking about Acoustics   Peter Blasser

Upgrade Available   Julia Christensen

Upgrade Available is Julia Christensen's current, ongoing body of work about how memory is changing as we become increasingly reliant upon our personal electronics. Our fluid relationships with smartphones, laptops, hard drives, and tablets allow us to offload more cognitive memory to our electronics than ever before, while uploading our lived experience to unseen servers. Ultimately our web of personal devices becomes an electronic system encoded with our memory, identity, and legacy. What happens to this electronic extension of our lives when our devices become obsolete, when we are finished using them, or when we die? One thing we know: these electronics and recordings become very complicated pieces of trash.

Upgrade Available investigates what we do with our slide collections, VHS tapes, computers, digital image files, laptops, tablets, and iPhones when we are finished using them, and/or when they become obsolete. A lot of this stuff sits in storage waiting for upgrades that rarely come to pass, while even more of it winds up in e-waste dumps around the world. The resulting pieces— *Burnouts*, *We Share Our Pictures*, *Hard Copy*, *The Chuck Close Tapes,* and *The Big Feed* (in progress)—each explore our relationships with obsolete electronic devices and recordings. This body of work includes photography, video, drawings, sculpture, and installation. Christensen's research has additionally led her around the world to document both formal and informal e-waste processing centers in India.

This presentation tells the story of Christensen's international e-waste expeditions, and the resulting art works. There will be time for Q&A at the end of the presentation.

TIMARA Talbertronic Festival
Concert II

Stull Hall – 3pm – Saturday, March 4th, 2017

Daddyo's Tape Disk   Cory Arcangel & Jacob Ciocci
stereo fixed media

Multifungi   Paulina Velazquez Solis
Paulina Velazquez Solis, *live animation*

Repeater, slow   Philip Raath
Patrick Richardson, *live electronics*

CTA 102   Aaron Dilloway
Aaron Dilloway, *tapes, percussion & voice*

Whorl   Gary Lee Nelson
video fixed media

Touch   Joo Won Park
Joo Won Park, *synthesizer & found objects*

TIMARA Talbertronic Festival

Concert III

Fairchild Chapel – 8pm – Saturday, March 4th, 2017

Bone Mother   Lyn Goeringer
Lyn Goeringer, *cow bones, microphone & computer*

Improvisation   Hunter Brown
Hunter Brown, *Plumbutter & Rolzer synthesizer*

Analogs to Nausea   Patrick Richardson
Patrick Richardson, *analog synthesizers*

The Temporal Sounds of the VauxFlores Sound System   Travis Johns
Travis Johns, *electronics*

Tocantes Ensemble   Peter Blasser
Natty Baker-Salisbury, William Bertrand, Lucas Brecher, Mary Fischer, Lyn Goeringer,
Helen He, Judy Jackson, Rachel Katz, Tom Lopez, Elie McAfee-Hahn,
Margaret McCarthy, Zaid Milefchik, Jackie Milestone

Reaction Study   Sarah Snider
Sarah Snider, *tablet*

Impromptu   Talbertronics Quartet
Evan Deyak, *Majestic Radio*; Mary Fischer, *delay lines*
Jackie Milestone, *MIDI horn*; Joe Misterovich, *TeleTalk*

Biographies

Cory Arcangel (b. 1978, Buffalo, NY, class of 2000) is a fine-artist based in Stavanger, Norway who makes work in a wide range of media. He recently opened the touring two-person show, "Asymmetrical Response" with Olia Lialina at the Kitchen in New York and the Western Front in Vancouver, and published the paperback, "The Source Digest" under the auspices of his publishing and merchandise imprint, Arcangel Surfware. His work is included in many public collections, including the MoMA in New York, the Tate in London, Berlin's Neue Nationalgalerie, and the Migros Museum für Gegenwartskunst in Zürich.

Peter B, designer and builder of synthesizers. The instruments work by touching pins, flexing cases, and radio fields. In a visiting workshop, participants perform a sonification of the local architecture with synthesizers they assembled. Most of Peter B's life is spent soldering instruments: Sidrax and Tetrax organs, Plumbutter drum machine, Cocoquantus sampler-mangler, a computer music squisher called the Shnth, modules by leaskul F. Mobenthey, Tocante knobless touchers... Some paper circuits can be downloaded from his website, printed out and assembled to yield sound objects. The cybernetic interface uses the subtleties of touch, through discrete components, often "woven" together geometrically, to simulate intuitive patterns and chaotic sophistication. Philosophical concepts spur his designs, which acquire a narrative as they refine into essential analogue synthesizers. Peter completed his undergraduate studies in 2002 at Oberlin College with Tom Lopez, Gary Lee Nelson and Pauline Oliveros. In 2015, he completed a Masters in Composition at Wesleyan University, where he studied with David Behrman, Anthony Braxton and Ron Kuivila.

Hunter Brown (www.hunterbrown.net) is a multimedia artist, audio engineer, and percussionist based in Oberlin, Ohio. Hunter's work is concerned with the visceral nature of sound and connecting sonic and visual media through the use of technology. He is currently employed as an audio engineer with Oberlin Audio Services. His activities as a percussionist focus around collaboration with composers in creating new works for percussion and electronics. Hunter is earning his Bachelor's of Music in Percussion Performance with a Minor in Technology in Music and the Related Arts at the Oberlin Conservatory. He studies percussion with Michael Rosen and electronic music with Aurie Hsu.

Julia Christensen is an artist whose work explores systems of technology, consumerism, landscape, and memory. Her work has been exhibited at venues such as the Walker Art Center (Minneapolis, MN), Ronald Feldman Fine Arts Gallery (NYC, NY), Lincoln Center (NYC, NY), Eyebeam (NYC, NY), Museum of Contemporary Art Cleveland (Cleveland, OH), and Carnegie Museum of Art (Pittsburgh, PA). Her work has been shown internationally in France, Finland, Greece, Croatia, and beyond. Christensen is the author of Big Box Reuse, published by MIT Press in 2008. Big Box Reuse won several book awards (including the American Association of University Press's "Best of 2009" award in non-fiction) and received reviews and features in publications such as *The New York Times*, *New York Magazine*, *Bookforum*, *The New York Review of Books*, and *The Washington Post*. Christensen's work has been included in the "Highbrow and Brilliant" quadrant of *New York Magazine*'s "Approval Matrix;" *Make Zine* recently said that "Christensen's work is a stunning demonstration of the tremendous potential for creative expression using technologies we might otherwise throw away;" *The Washington Post* once said that "Christensen has seen the future." She has been an invited guest on many radio shows featuring her artwork, such as *All Things Considered* (NPR), *On Point with Tom Ashcroft* (NPR), and *Marketplace* (CBC). Her writing has additionally appeared in a range of publications, such as *Print*, *Architect*, *Hyperallergic*, and *Cabinet* magazines. Christensen is a recipient of the Creative Capital Fellowship (Emerging Fields, 2013), the Ohio Arts Council Individual Excellence Award (2015), and Turbulence Net Art Commission (2008). She has been awarded artist residencies at the MacDowell Colony, Wexner Center for the Arts, and the Experimental Television Center. She is Associate Professor of Integrated Media Art at Oberlin College, and previously taught at Stanford University, Pratt Institute, California College of the Arts, and other universities. She has spoken widely about her work at a range of venues, including Yale University, Columbia University, Carnegie Mellon University, Idea Festival, Machine Project, and the National Arts Club.

Jacob Ciocci (b. 1977 Lexington, KY, class of 2000) is a fine artist currently based in Oberlin, OH who makes art and music in a variety of formats and venues. Ciocci was a founding member of the art collective Paper Rad and has shown work and performed at the New Museum, the Museum of Modern Art in New York, Tate Britain, and elsewhere. Recent activity includes a comprehensive screening of his video work at Microscope Gallery and solo exhibits at Interstate Gallery in Brooklyn, NY and And/Or Gallery in Los Angeles.

Aaron Dilloway is an experimental musician born in 1976. He is an improvisor and composer originally from Brighton, Michigan who works with the manipulation of 8-Track tape loops in combination with voice, tape delays and various organic and electronic sound sources. A founding member of the

industrial noise group Wolf Eyes (1998 - 2005), Dilloway now resides in Oberlin, OH where he runs Hanson Records and Mailorder.

Lyn Goeringer (http://lyngoeringer.com/portfolio) is a sound artist who works with video, sound, and light and she creates video art for gallery installation, live performance, and dance. Her work is often playful but complex, engaging with everyday objects towards abstract results. Her academic research interests engage with sound, power, infrastructure, space, place, and the everyday. Currently, she is an Assistant Professor in the Department of Music and the Film Studies Program in the English Department at Michigan State University. She taught in the TIMARA program at Oberlin Conservatory from 2012-2015.

Kyle Hartzell (kylehartzell.com) is a sound designer and artist based in Cleveland, Ohio. He is the digital media engineer for cinema studies and studio art at Oberlin College and is currently pursuing an MFA with a concentration in sound art at Vermont College of Fine Arts. In the past he has worked for public radio's StoryCorps, as a multimedia engineer for Princeton University, and as a freelance sound designer.

Aurie Hsu ('96) is a composer, pianist, and dancer. She composes acoustic and electronic music, performs her own piano music, and collaborates with musicians, choreographers, and musical robots. Aurie performs with the Remote electroAcoustic Kinesthetic Sensing (RAKS) system, a wireless sensor interface for belly dance. She has presented at NIME, ICMC, MOCO, SEAMUS, SIGCHI, Pixelerations, Third Practice Festival, the Logos Foundation, and the *Cite International des Arts*, and her pieces have been performed by the Da Capo Chamber Players, Relâche, the Talujon Percussion Quartet, among others. Aurie is a Visiting Assistant Professor in TIMARA at the Oberlin Conservatory (2015-2017).

Judy Jackson currently attends Oberlin College and Conservatory where she is a Double Degree student in the TIMARA and Computer Science departments. She enjoys applying her coding skills towards creating new sound palettes and devices for the performance of electronic music. Her performance brings precision and detail to live electronic music performance. She also loves audio synthesis and spends much of her time working on the ARP 2600 and in MaxMSP. Judy's work has been recognized by the Schubert Club of Minnesota, Third Practice Electroacoustic Music Festival, and Minnesota Public Radio. She has studied with Wynn-Anne Rossi, James Dillon, Lyn Goeringer, Lewis Nielsen,

Peter Swendsen, and Aaron Helgeson. She currently studies with Aurie Hsu. When she's not composing, Judy works as a sound engineer for Oberlin College Concert Sound, where she does live sound for visiting musical acts and guest speakers.

Sage Jenson is a multimedia artist interested in constructed realities. A member of the class of Oberlin College and Conservatory '17, Sage is majoring in mathematics, computer science, and TIMARA (technology in music and related arts). They work with interactive media, dance and movement, video art, and sound spatialization. Sage's academic interests include computer graphics and physical simulation, with papers including "Organic Mesh Creation through Particle-Based Simulation," published in Bridges Conference '16. After Oberlin, Sage will pursue a PhD in computer graphics and massively parallel computing.

Travis Johns is a composer and sound artist currently active in the United States and Central America. Using processed field recordings, prepared instruments and homebuilt analog electronics, he creates pieces that blur the lines between performance, composition and installation, often using the environment and biological processes as inspiration for his works. He holds a B.M. in Technology in Music and Related Arts from the Oberlin Conservatory of Music, as well as an MFA from Mills College in Electronic Music and Recording Media. He has participated in residencies at such places as the Atlantic Center for the Arts and RPI's Create @ iEar, and has had work featured by el Museo Centroamericano de Arte Video (MUCEVI), the Electronic Music Foundation, Berkeley Art Museum/Pacific Film Archive (BAMPFA), and the Bienarte 8 Costa Rican Biennial, and in January 2013 represented Costa Rica alongside visual artist Paulina Velazquez-Solis at the Biennial of the Central American Isthmus, in Panama City, Panama. He currently lives in Baltimore, Maryland where he teaches at the University of Baltimore, and also helms the audio electronics company VauxFlores that specializes in the design and manufacture of electronic instruments and effects for creative musicians.

William Johnson is a composer and visual artist from Bowling Green, KY. Musically, Will is interested in noise, ambiance, improvisation, and the physiological effects of sound. His debut cassette CRAWL is available on Holy Page Records. Will is also part of a folk duo, Fawn, who just released their first EP: "Neither Dog Nor Car." Will expects to graduate from Oberlin Conservatory in 2017 with a degree in Technology in Music and Related Arts. After Oberlin, Will plans to move to Boston where he can devote time to Fawn, and pursue a career in audio engineering.

Steven Kemper (www.stevenkemper.com) creates music for acoustic instruments, instruments and computers, musical robots, dance and video. His compositions have been presented at numerous concerts and festivals around the world. Steven's research has been presented at ICMC, NIME, and KEAMSAC, and published in *Organized Sound*. He is a co-founder of Expressive Machines Musical Instruments, a musical robotics collective, and co-designer of Movable Party, a bicycle-powered system for interactive electroacoustic music. Steven received a Ph.D. in composition and computer technologies from the University of Virginia and is currently Assistant Professor of music technology and composition in the Music Department at the Mason Gross School of the Arts at Rutgers University.

Tom Lopez (www.tomlopez.org) composes music for soloists, ensembles, electronics, video, and dance. Tom has received awards from the National Endowment for the Arts, the Fulbright Foundation, the Aaron Copland Fund, the Betty Freeman Foundation, and Meet the Composer. He has appeared at festivals and conferences around the world as a guest lecturer and composer. Tom has been a resident artist at numerous international centers and his compositions have received critical acclaim and peer recognition including releases by Innova, Centaur, Vox Novus, SCI, SEAMUS, Hanson Records, and the Oberlin Label.

Tom is faculty in the Contemporary Music Division at the Oberlin College Conservatory of Music and a Teaching Artist with Avivo, a community of artists dedicated to cultivating creativity through music. Tom feels grateful to have studied with influential composition teachers: Gary Nelson, Conrad Cummings, Morton Subotnick, Sal Martirano, Russell Pinkston, and Stephen Montague; and he is especially proud to have learned from a great many talented students.

Julia Mills is a third year psychoacoustics major, an interdisciplinary study between the TIMARA, physics, and neuroscience departments. Also a violinist and guitarist, she is interested in blending acoustic and electronic sounds to create music that is simultaneously both and neither.

Gary Lee Nelson joined the Oberlin faculty in 1974 when TIMARA was a tiny star on the horizon. During the first two decades, we climbed a steep and rocky road that we shared with Jazz. Gradually and grudgingly, the Conservatory accepted that these two upstarts were the coming thing and that they were not going away. Now TIMARA is among the brightest stars in a constellation that can be seen around the world.

At ICMC 1978, Nelson was identified as one of the pioneers of computer music along with Iannis Xenakis and Lejaren Hiller. During his days at Oberlin, he

presented over 300 concerts and convention papers at venues both here and abroad. He taught and did research at the University of Melbourne, IRCAM in Paris, Bell Laboratories, Taiwan, Hong Kong, Singapore and the Peoples Republic of China. From 1985 to 1992, he chaired the music theory and composition department at the Interlochen Arts Camp.

Nelson left Oberlin in 2008. After pruning a long list of places to "be," Santa Fe called the loudest. He teaches composition seminars at the Santa Fe University of Art and Design. In January 2017, he started a pilot course in film making and film scoring at the New Mexico School for the Arts. NMSA is a magnet high school based in Santa Fe. Some of NMSA's recent graduates already haunt the halls of Oberlin. We plan to send some soon to TIMARA.

He now works in his home studio where he continues making music and films. When he arrived in 2010, he fell into some bad company – visual artists. He is applying some of his key frame design to art that can hang on the wall. He'll be presenting some of that art this weekend in a kiosk. You can get an advanced look on www.garyleenelson.com.

Joo Won Park (joowonpark.net) wants to make everyday sound beautiful and strange so that everyday becomes beautiful and strange. He performs live with toys, consumer electronics, kitchenware, vegetables, and other non-musical objects by digitally processing their sounds. He also makes pieces with field recordings, sine waves, and any other sources that he can record or synthesize. Joo Won draws inspirations from Florida swamps, Philadelphia skyscrapers, his two sons, and other soundscapes surrounding him. He has studied at Berklee College of Music and the University of Florida, and currently teaches Music Technology at the Wayne State University. Joo Won's music and writings are available on ICMC DVD, Spectrum Press, MIT Press, PARMA, Visceral Media, MCSD, SEAMUS, and No Remixes labels.

Philip Raath was a student in the TIMARA program from 2002 - 2004. He is currently working as a software developer in Denver, Colorado.

Patrick Richardson graduated from Oberlin (BA Psychology) in 2004. He worked as a freelance live sound engineer before studying audio digital signal processing and music interfacing/gaming at Drexel (MS, electrical engineering, 2010). He now balances time between the work of teaching adjunct courses or maker-space workshops in sound system thesis and the play of hosting private drum lessons and trying to design more sensitive analog drum triggers, more improvisatory MIDI rhythm machines, and tastier breakfast sandwiches.

Patrick credits John Talbert's TIMARA courses in Analog- and Digital circuit design in 2004 as a primary catalyst to this path.

Sarah Snider is a composer and visual artist from Rockville, Maryland. She studied Technology in Music and Related Arts (TIMARA) at Oberlin Conservatory and will be receiving her Bachelor of Music in May 2017. She was exposed to the world of computer music and experimental composition at The Walden School 's Young Musicians Program over the course of five summers, where she also studied John Cage. Today, his music and philosophies remain a heavy influence in her sonic and visual works. She also books experimental music at Oberlin as a part of Modern Music Guild. In 2015, she founded Pretty Records, a record label dedicated to uplifting and releasing music by marginalized voices. She hopes to relocate to The Big Apple after graduating to continue her art and arts activism pursuits.

Paulina Velázquez Solís (1981 México/Costa Rica lives and works in Baltimore, Maryland) is a visual artist working with media such as installation, sculpture, video and animation with which she references everyday elements with playful aesthetics that transform the familiar into uncanny. With her project Multifungi she works with experimental music and live animation performance where she creates narratives
within improvisation.

In 2010 she obtained an MFA in New Genres from San Francisco Art Institute, under a Fulbright and PEO Peace Scholarships, and in 2008 she obtained her Licenciatura in Art and Visual Communication in Printmaking from Universidad Nacional in Costa Rica.

Her work has been presented in places like Museo de Arte y Diseño Contemporáneo, Teor/éTica, Alianza Francesa e Instituto México in Costa Rica. She has shown internationally at the Taipei Fine Arts Museum in Taiwan, ExTeresa Arte Actual in México DF, Museo de Arte in San Salvador, Torino Contemporanea in Italy, La Casa de las Américas in Habana, the Museum of the Americas en Washington DC, UCLA Biennial in Los Ángeles, SUNY Gallery in New Paltz, New York, the Mission Cultural Center, Root Division, Luggage Store Gallery, The Lab and the Berkeley Art Museum in the San Francisco Bay Area, as well as various film festivals.

Her work has been recognized in events like Bienarte 2005, where she was awarded to participate in the Central American Biennial BAVIC 2006 en el Salvador. That year she received the First Prize from Union Latina for Young Creators. In 2011, in collaboration with sound artist Travis Johns they where awarded at Bienarte 8 to participate at 8a. BAVIC in Panamá in 2013.

Peter V. Swendsen ('99) (www.swendsen.net) is interested in creating a sense of place for performers and listeners, often by using field recordings and real-world processes in music that combines acoustic instruments with electronics. Several such pieces are featured on his recent CD, *Allusions to Seasons and Weather*. Swendsen studied at Oberlin, Mills College, and the University of Virginia, and spent a year in residence at the NoTAM studios in Oslo as a Fulbright Fellow. He has created over forty scores for dance, including recent collaborations with David Shimotakahara at Ground Works Dance Theater in Cleveland and Amy Miller at Gibney Dance in New York City. His most recent project, *What Noises Remain*, is an evening-length piece inspired by Shakespeare's *The Tempest* and made in collaborations with percussionist, Jennifer Torrence ('09).

Program Notes

Analogs to Nausea (Patrick Richardson)

Analogs to Nausea includes a sound collage of recordings made from week in which both my friend and my dog (at the time) fell very ill. The vet let me record Gus's belly as the animal Ipecac took effect. My friend led me record him vomiting oatmeal in a bathroom. These events interrupted construction of the two analog oscillator-boxes played live (both based on the TI 4046 chip), designed as projects for students to build in my Advanced Electronics class.

Freedom (Sage Jenson & William Johnson)

Freedom is an immersive installation created by Will Johnson '17 and Sage Jenson '17. Geographically centered around the Owens Valley, CA, the installation draws on themes including displacement, internment, and curatorial facades. *Freedoi m* uses physically-based synthesis and 3D scans recorded on site to transform geometry into an interactive sounding medium. This project was made possible through a Flint Initiative Grant from the Oberlin Conservatory.

The Goldberg Variation (Helen He, Daniel Marcus, Julia Mills & Liam Smith)

The Goldberg Variation is a Ruth Goldberg Machine-inspired installation that sonifies the movement of marbles, dominoes, and ping-pong balls using John Talbert sensors and MaxMSP.

Mecxpression study 1 (Steven Kemper)

Mecxpression study 1 explores the concept of "mechatronic expression," the idea that mechatronic/robotic instruments are capable of producing musically expressive gestures that differ from those of human performers. This study features the robotic percussion instrument CADI (Configurable Automatic Drumming Instrument), designed by Expressive Machines Musical Instruments. *Mecxpression study 1* highlights CADI's mechanical gestures, including rapid attacks, repetitive patterns, and mechanical noise. Amplification of mechanical actions through contact microphones attached to CADI's solenoids and live

electroacoustic processing augment the acoustic sound of the instrument.

Multifungi (Paulina Velázquez Solís)

Multifungi is a project of live animation and sound as performance, where handmade (drawings and found objects) aesthetic is combined with technology to bring it to life. Using narratives that oscillate between the foreseen and improvisation with characters that find their own destruction. Multifungi performs with other artists, and currently collaborates with VSLS (Travis Johns) as M+V. https://multifungi.com/work/multifungi/

Reaction Study (Sarah Snider)

Reaction study in chance, an improvised performance.

Repeater, slow (Philip Raath)

I recall that I was fiddling with speed settings on an Electrix Repeater, discovered a texture that was really compelling, and followed my nose for a few hours until there was a piece.

The seed of the piece was the texture, but it was composed as much in the mix as in the harmonic motion. There was a lot of fine tuning of delay, tremolo, and filtering to create a sense of motion and build to a crescendo in tandem with the harmonic changes.

Many thanks to John Talbert for his help and enthusiasm during my time at Oberlin.

Shadows no. 6 (Aurie Hsu)

Shadows no. 6 is a piece for belly dancer, RAKS (Remote electroAcoustic Kinesthetic Sensing) system, CADI, the Configurable Automatic Drumming Instrument, from EMMI (Expressive Machines Musical Instruments), and computer·generated sound. The RAKS system is a wearable wireless sensor interface designed specifically for belly dance in collaboration with composer Steven Kemper. Sensors used in *Shadows no. 6* include a flex sensor in the corset and an accelerometer in the belt. The movement vocabulary is rooted in tribal style belly dance, which originated in the U.S., but is derivative of *Raqs Sharqi*

(Middle Eastern dance). Torso waves, hip isolations, and upper and lower body layering are just a few characteristics of the dance form. Combined with strategic mapping in the software, the system allows the dancer's movements to influence melodic contour as well as control CADI arms for rhythmic variation. The mode of interaction between the dance and music references the slow improvised, meterless *taqāsīm* and the quick drum solo, two Middle Eastern genres that feature a dancer and drummer where the lines between leader and follower become indistinguishable. In *shadows no. 6*, the RAKS system enables a solo performer to create this illusion.

Sift (Peter Swendsen)

Sift—the light tree the wood creak
—the light. Weight, weight pours
from left to sift. The light tree—
the light creaks. Weight from left
to sift. Loosen. From left
to loosen—creak. Loose the light.
Sift the light. To right—
right to sift. To creak. To
leak the light—to shift.

Poem by Jan Trumbauer ('10) · Read by Alice Rhee ('12)

State River City Stream (Travis Johns)

State River City Stream represents a convergence of two projects I am currently working on. The first, entitled Digital White, is a collection of visual art prints derived from improvisations conducted either on software I've written or analog electronics I've built. These improvisations, recorded in real-time are converted to raw data files and re-interpreted as digital prints intended for gallery display as a commentary on the desire for ephemera in music in a time when a majority of the medium is shifting towards cloud-based services and the general need for physical belongings wanes. The second piece this composition is derived form is my Hydroprinting performances conducted in San Francisco and the Marin Headlands in the summer of 2014. While preparing this piece, I had begun writing a backing track for the performance in the event that mechanical failure of the devices assembled in preparation for this piece hindered the overall intended purpose of using sound-driven transducers to create visual art prints. Unfortunately, due to time constraints and the fact that my wife and I were well into the third trimester when this performance took place, the sketches recorded were left unfinished until recently. In the case of this track, the source material

for the Hydroprinting compositions, consisting of compositional snippets recorded on digital synthesizers and sounds realized on home-built analog devices have been re-imaged as an improvisation in Max/MSP as another addition to the Digital White series.

The Temporal Sounds of the VauxFlores Sound System (Travis Johns)

I started building analog synths about a decade ago while I was living in a tent in the Rocky Mountains in the winter in an attempt to keep warm while I was finishing my thesis. Generally speaking, using a soldering iron connected to a small solar array as a source of heat isn't the best of ideas, but it was that cold and it was worth a shot – and when I left my mountain solitude, walking over 5 miles in chest-deep snow before coming to the nearest road, I had my first home-built synth in my pack along with the usual survivalist essentials. After that experience, I kept building – researching schematics, modifying designs, hunting components and assembling instruments that I would play until I got a better idea, needed money or felt the urge to build another; often using the proceeds of the sale of the last instrument to fund the next, naming each instrument sequentially. I think at the moment I'm up to Number 52. Not to say that I didn't keep a couple of my favorites for good measure and nostalgia. Then, about a year ago while attending a conference on legal scholarship, I was somehow inspired to adapt several of my surviving instruments into a standard format, creating a unique and expandable, as well as entirely home-built and primarily self-designed modular system that's inspired equally by the likes of David Tudor as it is King Tubby, with just a twist of Don Buchla and Peter B for good measure. For this performance, I would like to demonstrate this system live for you in hopes that by doing so it will generate discussion, expand repertoire and facilitate ideas – not only with regard to the future direction of this system, but also to the sounds of others in attendance.

Touch (JooWon Park)

Touch is a piece for found objects, computer, and a synthesizer. The sound of various ways of touching is amplified and enhanced with a custom music program. The title of the piece comes from a piece by Morton Subotnick, who is a big influence on my music.

Triptych (Tom Lopez)

Triptych was created in Oberlin, Ohio (2015). The video has three sections. The first two were created by Anita Pantin and the third by Tom Lopez. The sound

design in this performance is played from an LP released by Hanson Records: *Je ne suis pas mon pays* by Tom Lopez and *That's Quiet Alright* by Stephen Sloan & Alx Lopez.

      I: Triptico
      II: Ventana
      III: Ojo

**Untitled** (Peter Blasser)

After assembling these instruments in a Thursday afternoon workshop, we created a loose grouping of the instruments and their new masters. For this interlude, let's allow them to speak in their own way· as an experiment, listening to them exploring this instrument by touching it. The resulting tension should make a great performance!

The Tocante line of musical instruments is "about" and "touching" the materials of electronics. Each touchpad represents a pitch according to industry "preferred numbers," chosen by old wartime engineers for non·musical purposes. Here they form a unique and haunting musical scale, not unlike that of a gamelan or the neutral intervals of Persian music. Beyond these base pitches, three golden sandrodes flank each touchpad; touching these androgynous nodes yields intermodulation, pitch and timbral shifts, and emergent chaotic masses. The instruments come in three flavors: thyris the triangle, bistab the square, and phashi the circle. The oscillators sound like a bowed string, a most powerful clarinet, and a howling serene whistle, respectively. Each responds to touch differently. Solar panels charge the onboard batteries, that power the oscillators and a speaker. They are the perfect self·contained instrument for nightly music at the campground.

Whorl (Gary Lee Nelson)

This is a new version of a film I first composed in 2015. The images were made with ArtMatic. The video presents a continuous evolution of multi·colored "cosmic" threads. The soundtrack was made with a Max control surface driving samples in Abelton Live. The samples were rendered with MetaSynth by sonifying keyframes from the film.
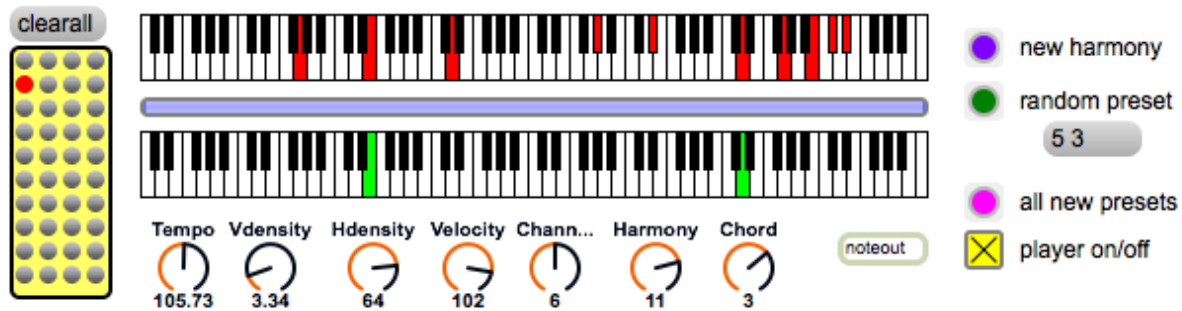
The control surface "composes" by randomly setting dials and sliders. The settings are stored in a Max preset object. The next step is to edit the presets until a small collection of finely-tuned "phrases" are available to improvise the piece. The performance involves selecting presets in an ordered sequence while watching the film. Selecting a preset causes a smooth crossfade of parameters from the old to the new.

The yellow box on the left holds 40 presets. The red keyboard displays the notes that "might" be played. The green keyboard displays the notes that are playing as I improvise. The blue stripe between the keyboards filters the range of the red keyboard to determine the notes that "can" be played.

This was my midterm submission for a class I was taking at the local community college. It got a B- because I was supposed to use Live exclusively.

The class covered Live and Reason. I have owned both for years but never got around to learning them. The Live interface was a bit of mystery to me. In addition, I shied away from what I saw as a serious style bias toward beats, grooves and loops. The class reinforced my shyness but I found Live to be a fabulous sample player. With my control surface, I could send computer keyboard codes and midi to fully navigate the complex Live interface – invisible fingers if you will.

At midterm, we finished Live. The night before we started in with Reason, I read the manual cover-to-cover and found lots of old friends who were introduced to me decades ago by Bob and Don. I thanked the instructor and told him I would not be continuing with the class. Eight weeks later, I got my report card. I failed the class! I was so preoccupied that I forgot to formally withdraw. I framed the report card and hung it between my PhD diploma and my honorary membership certificate to Pi Kappa Lamda.

This experience made me miss, even more, the openness and diversity of musical utterances from Oberlin, and particularly, TIMARA.

Acknowledgements

A festival like this can only come together with the concerted efforts of many, many individuals: