

Curriculum vitae

SETH SHAFER

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EDUCATION

2013-17 **Ph.D. Music** composition, computer music and media, University of North Texas
 Composition studies with Andrew May, Jon Christopher Nelson, and Panayiotis Kokoras
 New Media Art studies with David Stout
 Art/Science studies with Ruth West

2009-12 **Master of Music** composition, Cole Conservatory of Music, CSU Long Beach
 Composition studies with Martin Herman, Alan Shockley, and Robin Cox

2001-06 **Bachelor of Music** composition and performance, magna cum laude. CSU Long Beach
 Composition studies with Justus Matthews, Carolyn Bremer, and Perry LaMarca
 Tuba studies with John Van Houten

Additional Lessons and Master Classes

Chaya Czernowin, Harvey Sollberger, Keith Kirchoff, Elainie Lillios, Jonty Harrison, Madeline Shapiro, Carl Stone, Aaron Cassidy, Christian Wolff, Michael Daugherty, Robert Dick, and Brian Eno.

TEACHING EXPERIENCE

2017- **University of Nebraska at Omaha – Assistant Professor of Music Technology**
Classroom Teaching

2019- **Advanced Topics in Music Technology: Digital Signal Processing for Audio Applications** NEW CLASS
 DSP design for musicians, composers, and producers using rapid prototyping tools (JUCE, Faust, Max) to create audio effects and audio instruments.

2018- **Technology-Assisted Performance Ensemble (TAPEnsemble)** NEW CLASS
 A performer-composer collective utilizing electronic and acoustic instruments to perform music that defies traditional boundaries.

2017- **Music Technology Now** RE-DESIGNED CLASS
 Weekly meeting of all Music Technology majors with guest lectures, student presentations and critique, and recording and sound reinforcement opportunities.

Introduction to Music Technology

An overview of computers and music with a focus on broad themes of people, procedures, data structures, software, hardware, and computer music environments.

Audio Recording Techniques I

Basic instruction in analog and digital audio recording. Topics include acoustics, microphones, analog and digital audio, mixers, software DAW, and basic production.

Audio Recording Techniques II

Advanced instruction in sound recording and digital audio production. Topics include microphone technique, analog audio hardware, digital audio software, and advanced production techniques.

Audio Recording Techniques III RE-DESIGNED CLASS

Advanced instruction in sound mixing, digital audio editing, audio post-production and mastering. Topics

include advanced digital audio editing, audio signal processing techniques, analog signal processing hardware, automation, and final product authoring and mastering.

Music Capstone Project RE-DESIGNED CLASS

Individual research advising for undergraduates completing a BA in Music with a concentration in Music Technology or Music Entrepreneurship.

Non-Classroom Teaching

Music Technology Guest Lecturer Series NEW INITIATIVE

Creation of a public lecture series of internationally recognized artists, teachers, and professionals in the field of music technology. Guests work with students, interact with the community, and present their work. Previous guests: Fernando Lezcano-Lopez (Stanford), Martha de Francisco (McGill), Chris Schlarb (BIG EGO recording studio), Cory Metcalf (Cycling74), Michael Joly (OktavaMod Microphones), Calliope Duo (Elizabeth McNutt & Shannon Wettstein), Prince Charles Alexander (Berklee), Nicolas Collins (SAIC), and Meg Schedel (Stony Brook).

Recording Studio System Design and Installation NEW INITIATIVE

Design, selection of equipment, management of \$250k budget, and installation of a state-of-the-art 96-channel recording studio. Features include large-format recording console, immersive 8.1 surround sound, compliment of microphones, outboard hardware processors, recording and processing software, comprehensive routing, studio instruments (including grand piano, upright piano, vintage drawbar organ and speaker cabinet, vintage electric keyboards, monophonic, polyphonic, and modular synthesizers, guitar and bass amplifiers), audio-over-IP connections to performance venues, fully-repositionable camera system, and large displays to facilitate instruction.

2013-17

University of North Texas – Graduate Teaching Fellow

Intermedia Performance Arts Graduate Assistant to David Stout

Lectures on interactive audio/video, intermedia art repertoire, historical context, intermedia composition, computer music media, and interactive theater. Technical support of class performance. Graduate and undergraduate students.

Sophomore Composition Seminar Teaching Assistant to Kirsten Broberg

Seminar lectures on contemporary composition including topics of atonality, complexity, indeterminacy, alternate tuning systems, spectralism, computer-assisted composition, and electroacoustic music.

Intermediate Composition Lessons Teaching Fellow (teacher of record)

Individual mentoring of undergraduates through the composition process including concept development, instrumentation, instrumental technique, score/part making, working with musicians, and recording sessions.

Introduction to Electroacoustic Music Teaching Fellow (course design, teacher of record)

Lectures on the history of electroacoustic music, general acoustics, principles of analog and digital audio, MIDI, synthesis, sampling, and interactive music software design. Student work includes writing, composition projects, and final class concert. Graduate and undergraduate students.

Beginning Composition II / Class Composition II Teaching Fellow (co-teacher of record)

First-year composition course covering extended notation, advanced rhythm, music as process, indeterminacy and aleatory, minimalism, post-tonal theory, electronic music, postmodernism, timbre, texture, and space.

Beginning Composition I / Class Composition I Teaching Assistant to Joseph Klein

First-year composition course covering standard notation, melodic and harmonic variation, text setting, polytonality, and twelve-tone theory.

Computer Music Notation Teaching Fellow (course design, teacher of record)

Seminar and lab on notation and its modern production through the computerized engraving program Finale and vector graphics editor Adobe Illustrator.

2007-13 **Cypress College – Adjunct Faculty****Audio Production for Film I** Adjunct Faculty (course design, teacher of record)

History and technique of creating a polished soundtrack for film. Projects and lectures focus on dialog, sound effects, and musical elements.

Introduction to Music Technology Adjunct Faculty (course co-design, teacher of record)

Wide focus on application of technology in music including MIDI, synthesis, notation, and sampling.

Audio Production for Film II Adjunct Faculty (course design, teacher of record)

Advanced study of postproduction processes including ADR, location sound, Foley, orchestration, and multichannel surround sound mixing.

Recording Studio I Adjunct Faculty (teacher of record)

Introduction to studio concepts, practices, and theories with guided projects in lab.

Recording Studio II Adjunct Faculty (teacher of record)

Advanced recording engineering using Pro Tools, Logic, and the Control 24 console, including theoretical discussion and practical application.

Recording Studio Lab Adjunct Faculty (teacher of record)

Individual instruction in-studio on topics including signal flow, microphone placement, equalization, compression, gating, bussing, and side chaining.

2009-13 **Cole Conservatory, CSU Long Beach – Graduate Teaching Associate****Composition with Interactive Technologies** Co-Instructor with Martin Herman (course co-design)

Presented lectures and demonstrations in laboratory/seminar environment. Graduate and undergraduate students.

Laptop Ensemble Assistant Director (course co-design)

Composed music, conducted rehearsals, supervised technical setups, coached performers and composers. Graduate and undergraduate students.

Writing About Music Teaching Associate (teacher of record)

Online course exploring research methods, bibliography, attribution, and general writing improvement.

Introduction to Basic Music Technology Teaching Associate (teacher of record)

Online course on digital audio, recording, sequencing, and computer notation.

Music and Film Graduate Assistant to Roger Hickman

Paper reading and assessment for course on the history of music in film.

RESEARCH EXPERIENCE

University of Nebraska at Omaha

2019- **University of Nebraska Center for Music Technology** PI

An interdisciplinary research center, innovating new ways to research and practice music, broadly conceived, through technology. The Center seeks the following outcomes: develop innovative approaches to the understanding of music, sound, and technology; promote new applications of technology and music for performing arts and beyond; partnerships with public and private sectors in Nebraska, the nation, and abroad; provide a cutting-edge research training environment; and expand human creative potential. The Center engages in four primary research axes: (1) Instruments, Devices, and Systems; (2) Music Informatics; (3) Music Cognition and Perception; and (4) Expanded Musical Practice.

2017- **Sonification of Solar Harmonics (SoSH) Project** PI

Data sonification of the Michelson Doppler Imager (MDI) and Helioseismic and Magnetic Imager (HMI) dataset in collaboration with Stanford University's SOLAR Center and the University of North Texas's Initiative for Advanced Research in Technology and the Arts. See the SoSH webpage at <http://solar-center.stanford.edu/SoSH/>.

University of North Texas

2013-17 **Center for Experimental Music and Intermedia (CEMI)** Graduate Assistant to Andrew May (2013-16) and Panayiotis Kokoras (2016-17)

Intermedia concerts and festivals including ICMC 2015, ICEM 2014, Electric LaTeX 2014, and CEMIcircles 2013. Technical experience with mixing board, live audio diffusion, computer audio and video, lighting design, equipment maintenance, 24.3-channel theater, three 8-channel studios, and two 2-channel studios.

2014-17 **Initiative for Advanced Research in Technology and the Arts (iARTA)** Graduate Assistant to David Stout

Design, construction, and installation of interactive floor projection system, technical director for iARTA Symposium 2015, and Hybrid Arts Lab (HAL) technician.

2015-16 **xRez Art + Science Lab** Research Intern for Ruth West

Assist in conducting TxHATS conference, Art + Science Rendezvous Symposium, and general lab meetings.

Cole Conservatory, CSU Long Beach

2005-12 **Recital Hall Technician** College of the Arts, CSU Long Beach.

Audio technician, recording engineer, and lighting designer for music and theatre departments.

INVITED TALKS & WORKSHOPS

2019 ***Making Music with Data*** Sundry Workshop, Omaha Under the Radar. July 22, 2019.

2017 ***Embracing Ephemerality and Multiplicity: Recent Approaches to Real-Time Notation*** University of North Texas. April 24, 2017.

New Modes of Interactivity Using Higher Order Ambisonics and On-Screen Notation University of Nebraska at Omaha. April 6, 2017.

Acoustics and Psychoacoustics Glendale Community College, AZ. February 21, 2017.

Creative Applications of On-Screen Scores and Real-Time Notation Baylor University. January 19, 2017.

PUBLICATIONS

2019	<i>The Sonification of Solar Harmonics (SoSH) Project</i>	June 24, 2019	Proc. of the 2019 Int'l Conf. on Auditory Display http://hdl.handle.net/1853/61544
	<i>The Sonification of Solar Harmonics (SoSH) Project</i>	June 19, 2019	Proc. of the 2019 Int'l Computer Music Conf. ISSN: 2223-3881
	<i>Soundtrack+: Measuring, Predicting, and Applying Affect of Multichannel Patterns into Composition</i> (co-author Connor Kirts and Jeremy Baguyos)	June 17, 2019	Proc. of the 2019 Int'l Computer Music Conf. ISSN: 2223-3881
2018	<i>T-Shaped Music Tech Curriculums: Preparing Music Tech Students for the 21st-Century Creative and Technology Workforce</i> (co-author Jeremy Baguyos)	March 26, 2018	Proc. of the Sempre MET2018 Int'l Music Ed. Research Centre University College London ISBN: 978-1-905351-37-4
	<i>New Behaviours and Strategies for the Performance Practice of Real-Time Notation</i>	February, 2018	eContact! Journal of Canadian Electroacoustic Community 18.4 http://econtact.ca/
2017	<i>Terraformation: for Violin or Viola and Computer</i>	August, 2017	Proceedings of the 2017 Int'l Conf. on Technologies for Music Notation & Representation
	<i>Performer Action Modeling in Real-Time Notation</i>	August, 2017	Proceedings of the 2017 Int'l Conf. on Technologies for Music Notation & Representation
2016	<i>Performance Practice of Real-Time Notation</i>	May, 2016	Proceedings of the 2016 Int'l Conf. on Technologies for Music Notation & Representation ISBN: 978-0-9931461-1-4
2015	<i>VizScore: An On-Screen Notation Delivery System for Live Performance</i>	September, 2015	Proceedings of the 2015 Int'l Computer Music Conf. ISSN: 2223-3881

RECORDINGS**Concert**

2014 **40th Int'l Computer Music Conference** September 15, 2014 Int'l Computer Music Assoc.
Pulsar [Variant II] (Glen Gray, horn)

Popular

2018- **A. Wesley Chung** arranger, keyboards, tuba, engineer, mixing
Portents Summer 2020
Neon Coast May 18, 2018 LP Records (Glasgow)

2013- **The Great Albatross** songwriter, arranger, keyboards, tuba, engineer, mixing
Asleep in the Kaatskills May 12, 2017 LP Records (Glasgow)
Roots [7-inch] May 30, 2014 Count Your Lucky Stars
Into It. Over It. / The Great Albatross [split] August 2, 2013 Struggletown Records

2013 **Vampire Weekend** tuba
Modern Vampires of the City May 6, 2013 XL Recordings
 (Grammy: Best Alternative Music Album, 2014)

2010 **Chris Schlarb/Psychic Temple** arranger
Psychic Temple November 23, 2010 Asthmatic Kitty

2008-11 **Boris Smile** songwriter, arranger, tuba, keyboards, engineer, mixing, mastering
My Love Powered by 10,000 Practice Amps February 22, 2011 Count Your Lucky Stars
Rockets [EP] March 16, 2010 Count Your Lucky Stars
Beartooth [EP] November 4, 2008 Count Your Lucky Stars
Young and It Feels So Good February 26, 2008 self-released

2010-11 **Paulie Pesh** tuba, mixing, mastering
Post Mortem [EP] April 5, 2011 self-released
Shining Stars [EP] November 1, 2010 self-released

2009 **Korey Dane** mixing, mastering
For the Kite Flyers November 10, 2009 self-released

Film

2013 **Circle the Wagen** composer Ryan Steven Green, dir.
 (Columbia Gorge International Film Festival 2013: Best Documentary Feature)

2012 **Snow Jacket** sound re-recording mixer Derek Wibben, dir.

2010 **Between the Upper Lip and Nasal Passageways** composer Ryan Steven Green, dir.
 (Festivus Film Festival: Best Documentary Short)

2008	Run Run Run composer (Campus Movie Fest 2008: Best Picture)	Emmanuel Bageris, dir.
2007	Across the White Line composer	Marlowe Green, dir.
2006	The Breed orchestrator	Wes Craven, prod.
2005	El Paletero composer	Bryan Thompson, dir.
2004	The Gravediggers composer	Bryan Thompson, dir.

Radio

2017	Comp Talk, episode 01 invited guest	October 29, 2017	KNTU 88.1, Dallas, TX
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LIST OF WORKS (SINCE 2009)

In Progress	[untitled helioseismology installation] Fulldome Theatre in collaboration with Elaine DiFalco (University of North Texas) and Tim Larson (Stanford)
2019	Blue Sky Catastrophe piano and computer [real-time notation], 10' in collaboration with Martin Herman commissioned by Vicki Ray
	Amber Lambents mandolin, computer, and electronics [live electronics], 7'
	Shaken to the Core found objects, computer, and electronics [live electronics], 14'
	13 Fruitcakes Finale laptop ensemble, 5' in collaboration with Gihieh Lee and Los Angeles Laptop Collective
	Vis Vitalis laptop ensemble, 3'
	Polytera II flute, piano, and computer [real-time notation], 9' commissioned by Calliope Duo (Elizabeth McNutt and Shannon Wettstein)
	All the Words laptop ensemble, 12' in collaboration with TAPEnsemble
	Brandenburg Concerto No. 3 after Wendy Carlos laptop ensemble, 11'
2018	...stimulated by water... laptop ensemble, 8'
	Cornelius Cardew's Treatise [page 1] laptop ensemble, 10'
	Radio Music for Knobs interactive multimedia installation
	Instrument One Antarctic Night VR intermedia installation in collaboration with Ruth West, xREZ Art + Science Lab, and the Antarctica Schmidt Telescopes project
	Phoenix and Firewhip ambisonic audio [fixed media], 7'
	Silent Swan clarinet, cello, percussion, and fixed audio/video, 4' part of by Alexander Schubert and Decoder Ensemble's <i>Silent Posts</i> project
	Heirlooms [fayth] alto sax and vibraphone, 7' commissioned by Corey and Amy Robinson
2017	Ultramarine harp, 10' commissioned by the 4 th Annual Costello Competition for Composition
	Strange Attractors generative pseudo-hologram installation
	Polytera I viola, bass clarinet, and marimba, 12'
	Terraformation viola and computer [real-time notation], 15' commissioned by Michael Capone

- death is not always the enemy** a cappella SATB, 9'
for Roomful of Teeth
- 2016 **Everything Will Be Shaken** ambisonic audio [fixed media], 14'
Digital Drum Circle interactive multimedia installation
- 2015 **Double Helix** interactive projection and generative 2-channel audio installation
Hookean Elastics 2-channel audio [fixed media], 8'30"
Law of Fives viola, bass clarinet, marimba, and computer [real-time notation], 9'45"
Sol Invictus 5-channel projection installation
Ursa Minor euphonium and computer [animated notation], 8'30"
commissioned by Tom Mahovsky
- 2014 **Pulsar [Variant II]** trumpet and computer [animated notation], 10'
WHATAREYOULOOKINGAT live data mining, samplers, and interactive projection, 22'
Night in Arcturus Stream harp, 8'30"
- 2013 **Seized at the Root** multimedia for fixed playback & installation, 5'30"
Piute/Emerson/Bach soprano sax, alto sax, bassoon, trumpet, violin, and double bass, 10'
Dark Star 2-channel audio [fixed media], 6'
Making Music With Everyday Sounds interactive multimedia installation
Upon Return to Earth (rev. 2014), laptop quartet, 4'
Silbertöne horn, violin, and laptop quartet [animated notation], 6'
Pulsar [Variant I] horn and computer [animated notation], 5'
Finale, In Praise of Immaculate Data Structures laptop quartet [animated notation], 8'
Dance Movement (Noise Drum) laptop quartet, 7'
- 2012 **Gravity Well** laptop quartet [animated notation], 10'
The Truth About Butterflies dancer and 2-channel audio [fixed media], 11'
for Johnna Wickstrom
Just One Dance music for film, 6'
Superchoir laptop quartet [animated notation], 6'
Ego Sum Lux Mundi a cappella choir, 5'
Music for Knobs (installation), interactive sound installation
Wangany Rulu Korg DDD-1 drum machine, 6'30"
Satellites music for film, 16'
Cage Songs No. 17 & 43 vocalist and laptop quartet, 12'
for Jacqueline Bobak and Vir2Ual Cage
Music for Knobs II four performers with giant knobs [animated notation], 7'
Music for Knobs I four performers with giant knobs [animated notation], 7'30"
- 2011 **Anomaly** solo flute, electronics, oboe, clarinet, horn, trombone, vibraphone, violin, and double bass, 16'30"
Two Channel Music Tape: Spring/Fall 2-channel audio [fixed media] for Nam June Paik installation, 32'20"
for The Getty's Pacific Standard Time Initiative
in collaboration with Zach Lovitch and Andy Zacharias
Weird Birds wind ensemble, 8'30"
Water, Falling Upward (rev. 2013), flute, clarinet, and bassoon, 2'
Like a Spear from the Earth three performers [open instrumentation] and computer, 9'

Three flute, piano, double bass, and computer [animated & real-time notation], 15'
in collaboration with Zach Lovitch and Andy Zacharias

Sad Divisions flute, oboe, bass clarinet, violin, cello, and piano, 1'30"
for the Definiens Ensemble

2010 **We Interrupt This Broadcast** laptop quartet, 7'
The Avi Box live sampling improvisation environment
The 20th Century Motor Company string quartet, 7'
Meeting At Night tenor and piano, 3'
Letting in the Jungle tenor and piano, 8'
Imprint 2-channel audio [fixed media], 2'
Coldwater Canyon string trio, 1'30"
for the Mojave Trio

2009 **Quasar** three brass quintets, 7'
Bio-Glow percussion quintet, 6'
Pulsar trombone and computer, 7'30"
The Oaks of Righteousness a cappella choir, 3'30"

SELECTED PERFORMANCES (SINCE 2009)

2019 **Amber Lambents** Electronic Music Midwest Festival, Kansas City Kansas Community College. September 5, 2019.
Polytera II Sounds Modern, Modern Art Museum of Fort Worth. August 3, 2019. [Invited]
Amber Lambents Omaha Under the Radar Festival. July 26, 2019. [Juried]
Shaken to the Core Omaha Under the Radar Festival. July 26, 2019. [Juried]
Law of Fives TENOR 2019, Monash University, Melbourne, Australia. July 25, 2019. [Juried]
13 Fruitcakes Stonewall at 50, La Mama. June 13-16, 2019 (4 performances). [Invited]
collaboration with Byungkoo Ahn, Gihieh Lee, and Los Angeles Laptop Collective
performances of **Vis Vitalis** and **13 Fruitcakes Finale**
All the Words OutrSpaces, Omaha. April 26, 2019.
...stimulated by water... OutrSpaces, Omaha. April 26, 2019.
Brandenburg Concerto No. 3 after Wendy Carlos OutrSpaces, Omaha. April 26, 2019.
Silbertöne OutrSpaces, Omaha. April 26, 2019.
Polytera II University of Nebraska at Omaha. April 8, 2019.
Phoenix and Firewhip SEAMUS 2019, Berklee School of Music, Boston. March 21, 2019. [Juried]
Terraformation Open Circuit Festival 2019, University of Liverpool, UK. March 16, 2019. [Juried]
Phoenix and Firewhip CEM|cirlces Festival 2019, University of North Texas. March 2, 2019. [Juried]

2018 **...stimulated by water...** Bancroft Street Market, Omaha. December 5, 2018.
Cornelius Cardew's Treatise [page 1] Bancroft Street Market, Omaha. December 5, 2018.
Upon Return to Earth Bancroft Street Market, Omaha. December 5, 2018.
Silbertöne Bancroft Street Market, Omaha. December 5, 2018.
Silent Swan LICHTHOF Theater, Hamburg. September 22, 2018. [Invited]
Radio Music for Knobs Generator Series, Noise, KANEKO, Omaha, NE. September 15, 2018 [Invited]
Instrument | One Antarctic Night SIGGRAPH 2018, Vancouver. August 12–16, 2018. [Juried]
Everything Will Be Shaken ICMC, Daegu, South Korea. August 5, 2018. [Juried]

- Silent Swan** GARBICZ Festival, Poland. August 2, 2018. [Invited]
- Everything Will Be Shaken** SMC, Rialto Theatre, Limassol, Cyprus. July 6, 2018. [Juried]
- Silent Swan** Klang, Copenhagen. June 3, 2018. [Invited]
- Silent Swan** Faktor, Hamburg. May 25, 2018. [Invited]
- 2017 **Heirlooms [fayth]** North American Saxophone Alliance Conference. March 8, 2018. [Invited]
- Law of Fives** New Music Collective, Ohio State University. October 25, 2017. [Invited]
- Everything Will Be Shaken** EA Music Festival Ecos Urbanos, Mexico City. November 11, 2017. [Juried]
- Hookean Elastics** ICMC/Shanghai EMW, Shanghai Conservatory of Music. October 16, 2017. [Juried, withdrawn]
- Everything Will Be Shaken** Toronto International Electroacoustic Symposium. August 11, 2017 [Juried, withdrawn]
- Everything Will Be Shaken** NYCEMF, Abrons Arts Center, New York. June 24, 2017. [Juried]
- Pulsar [Variant II]** Splice Festival 2017, Western Michigan University. June 13, 2017. [Invited]
- Terraformation** TENOR 2017, Universidade da Coruña, Spain. May 25, 2017 [Juried].
- Terraformation** University of North Texas. April 24, 2017.
- Ursa Minor** Electrobrass Festival, Tennessee Technological University. April 8, 2017 [Juried].
- Polyera I** University of North Texas. April 3, 2017.
- Gravity Well** University of Southern California. February 27, 2017 [Invited].
- Silbertöne** Kulturhaus alte feuerwache Studiobühne, Berlin. January 18, 2017 [Invited].
- Upon Return to Earth** Kulturhaus alte feuerwache Studiobühne, Berlin. January 18, 2017 [Invited].
- Silbertöne** Hamburger Sprechwerk, Hamberg. January 16, 2017 [Invited].
- 2016 **Upon Return to Earth** Hamburger Sprechwerk, Hamberg. January 16, 2017 [Invited].
- Silbertöne** Cole Conservatory, CSU Long Beach. November 30, 2016.
- Upon Return to Earth** Cole Conservatory, CSU Long Beach. November 30, 2016.
- Everything Will Be Shaken** Diffrazioni Multimedia Festival, Florence, Italy. November 21, 2016. [Juried]
- Ursa Minor** University of Texas, Austin. Electric LaTeX Festival. November 5, 2016 [Invited].
- Everything Will Be Shaken** CCRMA, Stanford University. October 5, 2016. [Invited]
- Hookean Elastics** SMC, Hamburg, Germany. September 1, 2016. [Juried]
- Hookean Elastics** NYCEMF, Abrons Arts Center, New York. June 19, 2016. [Juried]
- Everything Will Be Shaken** University of North Texas. May 12, 2016.
- Night in Arcturus Stream** University of North Texas. April 26, 2016.
- Sol Invictus** Perot Museum of Nature and Science, Dallas. April 22, 2016. [Invited]
- Digital Drum Circle** Perot Museum of Nature and Science, Dallas. April 22, 2016. [Invited]
- Hookean Elastics** University of North Texas. February 15, 2016.
- 2015 **Strange Attractors** iARTA Lab Preview, University of North Texas. December 8, 2015.
- Double Helix** xRez Lab Preview, University of North Texas. December 4, 2015.
- Gravity Well** Cole Conservatory, CSU Long Beach. December 2, 2015.
- Law of Fives** Shanghai Conservatory of Music Electronic Music Week. October 20, 2015. [Juried]
- Pulsar [Variant II]** ICMC, University of North Texas. September 30, 2015. [Juried]
- Pulsar [Variant II]** The Engine Room Sound Art and Electronic Music Symposium, Morley College, London. July 18, 2015. [Juried]
- Sol Invictus** University of North Texas. April 20, 2015.
- Ursa Minor** University of North Texas. March 23, 2015.

- 2014
- Pulsar [Variant II]** University of North Texas. March 2, 2015.
 - Dark Star** Audio Art Festival, Kraków, Poland. November 20, 2014. [Invited]
 - Quasar** True Brass Choir, Lakewood, CA. October 19, 2014.
 - Dark Star** ICMC/SMC, Athens, Greece. September 18, 2014. [Juried]
 - Pulsar [Variant I]** ICMC/SMC, Athens, Greece. September 15, 2014. [Juried]
 - Dark Star** NYCEMF, Abrons Arts Center, New York. June 7, 2014. [Juried]
 - Pulsar [Variant II]** University of North Texas. May 9, 2014.
 - Upon Return to Earth** Cole Conservatory, CSU Long Beach. April 27, 2014.
 - WHATAREYOULOOKINGAT** University of North Texas. April 14, 2014.
 - Pulsar [Variant I]** University of North Texas. April 6, 2014.
 - Dark Star** University of North Texas. March 24, 2014.
 - Upon Return to Earth** Julio Cortázar Conference, CSU Long Beach. March 21, 2014. [Invited]
 - Upon Return to Earth** LA Art Stream, Live Webcast. February, 26, 2014.
 - Silbertöne** LA Art Stream, Live Webcast. February, 26, 2014.
 - Dark Star** National Student Electronic Music Event (N_SEME), Georgia Southern University. February 21, 2014. [Juried]
 - Circle the Wagen** Whole Foods Tribal Gathering, Austin. February 21, 2014.
 - Circle the Wagen** Boulder International Film Festival. February 13, 2014.
- 2013
- Water, Falling Upward** Federal University of Goiás, Goiânia. December 11, 2013.
 - Water, Falling Upward** University of Brasília, Brasília. December 9, 2013.
 - Circle the Wagen** United Film Festival, Tulsa. December 8, 2013.
 - Circle the Wagen** Highland Park Film Festival. December 7, 2013.
 - Water, Falling Upward** Fundação Casa França-Brasil, Rio de Janeiro. December 7, 2013.
 - Silbertöne** Cole Conservatory, CSU Long Beach. December 4, 2013.
 - Upon Return to Earth** Cole Conservatory, CSU Long Beach. December 4, 2013.
 - Piute/Emerson/Bach** Nova Ensemble, University of North Texas. November 21, 2013.
 - Pulsar** Electric LaTex Festival, Tulane University. October 26, 2013. [Invited]
 - Circle the Wagen** Austin Film Festival. October 26, 2013.
 - Circle the Wagen** Orlando Film Festival. October 19, 2013.
 - Music for Knobs I** OK Electric Festival, Living Arts, Tulsa. October 19, 2013. [Invited]
 - Silbertöne** Long Beach Soundwalk. October 5, 2013. [Invited]
 - Upon Return to Earth** Long Beach Soundwalk. October 5, 2013. [Invited]
 - Pulsar [Variant I]** CEMlircles Festival, University of North Texas. October 5, 2013. [Invited]
 - Making Music With Everyday Sounds** Perot Museum of Nature and Science, Dallas. October 4, 2013. [Invited]
 - Circle the Wagen** Columbia Gorge Film Festival. August 15, 2013.
 - Circle the Wagen** Topanga Film Festival. July 20, 2013.
 - Circle the Wagen** Downtown Film Festival, Los Angeles. July 18, 2013.
 - Love and Dream Painted with Song** Festival dei Due Mondi Spoleto. July 9-12, 2013 (4 performances).
collaboration with Byungkoo Ahn and CSU Long Beach Laptop Ensemble
performances of **Silbertöne** and **Upon Return to Earth**
 - Circle the Wagen** Albuquerque Film and Media Experience. June 9, 2013.
 - Pulsar [Variant I]** Cole Conservatory, CSU Long Beach. May 14, 2013.

- Finale, In Praise of Immaculate Data Structures** University Art Museum, CSU Long Beach. May 8, 2013.
- Dance Movement [Noise Drum]** University Art Museum, CSU Long Beach. May 8, 2013.
- Finale, In Praise of Immaculate Data Structures** Cole Conservatory, CSU Long Beach. April 21, 2013.
- Dance Movement [Noise Drum]** Cole Conservatory, CSU Long Beach. April 21, 2013.
- 2012 **Ego Sum Lux Mundi** Grace Brethren Church Long Beach. December 9, 2012.
- Gravity Well** Cole Conservatory, CSU Long Beach. November 18, 2012.
- Gravity Well** University Art Museum, CSU Long Beach. November 15, 2012.
- Superchoir** Arts Month, Gamboa Theater, Long Beach. October 26, 2012. [Invited]
- Cage Songs No. 17 & 43** Arts Month, Gamboa Theater, Long Beach. October 26, 2012. [Invited]
- Weird Birds** Cole Conservatory, CSU Long Beach. October 18, 2012.
- The Truth About Butterflies** Martha Knoebel Dance Theater, Long Beach. October 11-13, 2012 (3 perf.).
- Cage Songs No. 17 & 43** Long Beach Soundwalk. September 1, 2012.
- Superchoir** Long Beach Soundwalk. September 1, 2012. [Invited]
- Music for Knobs (installation)** Long Beach Soundwalk. September 1, 2012. [Juried]
- Just One Dance** Dance Department, CSU Long Beach. August 31, 2012.
- Knobs Improv** (improvisation) Convoke!, Cole Conservatory, CSU Long Beach. May 17, 2012.
- Music for Knobs I & II** Altered Reality Festival, University Theater, CSU Long Beach. May 8, 2012. [Invited]
- Cage Songs No. 17 & 43** Cole Conservatory, CSU Long Beach. April 7, 2012.
- Like a Spear from the Earth** University Art Museum, CSU Long Beach. April 5, 2012.
- Music for Knobs I** University Art Museum, CSU Long Beach. April 5, 2012.
- Waggany Rulu** Cole Conservatory, CSU Long Beach. April 3, 2012.
- Like a Spear from the Earth** Merge Festival, Long Beach. March 31, 2012. [Invited]
- Music for Knobs I & II** Merge Festival, Long Beach. March 31, 2012. [Invited]
- Between the Upper Lip and Nasal Passageway** The International Moustache Film Festival 2012, Portland. March 30, 2012.
- Like a Spear from the Earth** Graduate Recital, Cole Conservatory, CSU Long Beach. March 9, 2012.
- Bio-Glow** Graduate Recital, Cole Conservatory, CSU Long Beach. March 9, 2012.
- Anomaly** Graduate Recital, Cole Conservatory, CSU Long Beach. March 9, 2012.
- The 20th Century Motor Company** Graduate Recital, Cole Conservatory, CSU Long Beach. March 9, 2012.
- Music for Knobs I** Graduate Recital, Cole Conservatory, CSU Long Beach. March 9, 2012.
- Quasar** Graduate Recital, Cole Conservatory, CSU Long Beach. March 9, 2012.
- Pulsar** Graduate Recital, Cole Conservatory, CSU Long Beach. March 9, 2012.
- Cage Songs No. 17 & 43** Cole Conservatory, CSU Long Beach. February 20, 2012.
- Cage Songs No. 17 & 43** Vir2Ual Cage, CalArts, February 5, 2012. [Invited]
- 2011 **Music for Knobs I & II** Cole Conservatory, CSU Long Beach. November 20, 2011.
- Knobs Improv** (improvisation) Cole Conservatory, CSU Long Beach. November 8, 2011.
- Two Channel Music Tape: Spring/Fall** Long Beach Museum of Art. October 7, 2011 – February 12, 2012.
- Water, Falling Upward** Wine & Wheels, Hollywood. June 5, 2011. [Invited]
- Suppressed Composers Project**, orchestrator. Concert of music by composers displaced by fascism in the 20th century. First Congregational Church of Los Angeles. May 1, 2011.
- Like a Spear from the Earth** Cole Conservatory, CSU Long Beach. April 26, 2011.
- Three** Cole Conservatory, CSU Long Beach. April 26, 2011.
- Sad Divisions** Definiens Ensemble, Cole Conservatory. CSU Long Beach, February 28, 2011.

- 2010 ***We Interrupt This Broadcast*** Cole Conservatory, CSU Long Beach. December 14, 2010.
The Avi Box Day of the Arts, CSU Long Beach. November 17, 2010.
Quasar University Brass Ensemble, Cole Conservatory, CSU Long Beach. November 3, 2010.
Meeting at Night Cole Conservatory, CSU Long Beach. October 11, 2010.
Between the Upper Lip and Nasal Passageway Columbia Gorge International Film Festival, Vancouver. August 21, 2010.
Letting in the Jungle Cole Conservatory, CSU Long Beach. May 19, 2010.
Imprint Cole Conservatory. CSU Long Beach, May 18, 2010.
Between the Upper Lip and Nasal Passageway Indie Spirit Film Festival, Colorado Springs. April 23, 2010.
Coldwater Canyon Mojave Trio, Cole Conservatory. CSU Long Beach, March 15, 2010.
Between the Upper Lip and Nasal Passageway Dam Short Film Festival, Boulder City, NV. February 11, 2010.
Between the Upper Lip and Nasal Passageway Greater Colorado Short Circuit Film Series, Colorado Springs. January 27, 2010.
Between the Upper Lip and Nasal Passageway Festivus Film Festival, Best Documentary Short, Denver. January 14, 2010.
- 2009 ***Pulsar*** Cole Conservatory, CSU Long Beach. December 2, 2009.

GRANTS AND FELLOWSHIPS

- 2019 **Nebraska Research Initiative** PI, \$57,569 to outfit the Nebraska Center for Music Technology makerspace for innovating at the intersection of music and technology. The makerspace includes facilities for PCB circuit prototyping, instrument building with laser engraving and CNC machines, and VR content development. The space is acoustically treated and includes a 16-channel loudspeaker array.
- Cultural Enrichment Grant Spring 2019** \$2,625 to fund presentations/performances by Prince Charles Alexander and Nicolas Collins as part of the University of Nebraska at Omaha Music Technology Guest Lecturer Series.
- Big Ideas Initiative** PI, \$25 million (shortlisted, unfunded) to launch the Nebraska Center for Music Technology.
- 2018 **University Committee on the Advancement of Teaching Grant 2018-19** \$750 to re-design the online-only section of MUS 3170 Introduction to Music Technology at the University of Nebraska at Omaha.
- University Committee on the Advancement of Teaching Grant 2018-19** \$496 to purchase components to build a studio electronics repair station for the Audio Recording Techniques courses at the University of Nebraska at Omaha.
- Cultural Enrichment Grant Fall 2018** \$3,342 to fund presentations/performances by Michael Joly and Caliope Duo (Elizabeth McNutt and Shannon Wettstein) as part of the University of Nebraska at Omaha Music Technology Guest Lecturer Series.
- CFAM Dean's Funds 2018-19** \$5,277 to fund the purchase of a 32-channel A/D/D/A converter (Lynx Aurora (n) HD for use in Studio 153 at the University of Nebraska at Omaha.
- Cultural Enrichment Grant Spring 2018** \$1,720 to fund presentations/performances by Chris Schlarb and Cory Metcalf as part of the University of Nebraska at Omaha Music Technology Guest Lecturer Series.
- 2017 **College of Fine Arts and Media High Tech Committee Grant 2017-18** \$2,760 to purchase 12 audio interfaces and 12 headphones for the Music Technology lab at the University of Nebraska at Omaha.
- University Committee on the Advancement of Teaching Grant 2017-18** \$490 to purchase a field recording package to supplement the Audio Recording Techniques courses at the University of Nebraska at Omaha.

- Cultural Enrichment Grant Fall 2017** \$1,720 to fund presentations by Fernando López-Lezcano and Martha de Francisco as part of the University of Nebraska at Omaha Music Technology Guest Lecturer Series.
- 2013-17 **Graduate Assistant Tuition Scholarship** for “superior academic achievement and exceptional promise for scholarly success in graduate studies,” University of North Texas.
- 2017 **Craig B. Raupe Travel Grant** for attending TENOR 2017, A Coruña, Spain.
- 2016 **Craig B. Raupe Travel Grant** for attending SMC 2016, Hamburg, DE.
Toulouse Graduate School Travel Grant for attending SMC 2016, Hamburg, DE.
Toulouse Graduate School Travel Grant for attending TENOR 2016, Cambridge, UK.
- 2015 **Craig B. Raupe Travel Grant** for attending Shanghai Electronic Music Week 2015.
Toulouse Graduate School Travel Grant for attending Shanghai Electronic Music Week 2015.
Paul G. Bonneau Travel Scholarship for attending Shanghai Electronic Music Week 2015.
- 2014 **Craig B. Raupe Travel Grant** for attending ICMC 2014, Athens, Greece.
Toulouse Graduate School Travel Grant for attending ICMC 2014, Athens, Greece.
Paul G. Bonneau Travel Scholarship for attending ICMC 2014, Athens, Greece.
- 2009-12 **Cole Conservatory Scholarship.** Cole Conservatory, CSU Long Beach.

STUDENT ACHIEVEMENTS

- 2018- **Nicholas Palensky, Audio Technician – United States Air Forces Regional Bands Program** reference.
 Student Nicholas Palensky won audio technician job with US Air Force Regional Bands Program.
Student Employee of the Year, Connor Kirts direct advisor. University of Nebraska at Omaha.
FUSE Grant, Gabriel Bierman Faculty mentor. \$2489 to purchase a binaural microphone array for research in stereo and multichannel immersive sound. University of Nebraska at Omaha.
FUSE Grant, Nicholas Spencer Faculty mentor. \$1960 to purchase audio equipment required to support the founding of a digital music ensemble. University of Nebraska at Omaha.
FUSE Grant, Nicholas Palensky Faculty mentor. \$2486 to purchase a modular synthesizer for research in analog synthesis design and use. University of Nebraska at Omaha.

LEADERSHIP

- 2018- **Music Technology Manager (full time staff)** supervisor. University of Nebraska at Omaha.
- 2017- **Music Technology Area Coordinator** University of Nebraska at Omaha.
UNO Recording Studios supervisor. University of Nebraska at Omaha.
- 2017-18 **Recording Services (student staff)** supervisor. University of Nebraska at Omaha.

ACADEMIC SERVICE

- 2019- **College of Communication, Fine Arts and Media Diversity Committee** member. University of Nebraska at Omaha.
University Judicial Committee member. University of Nebraska at Omaha.
- 2018- **Search Committee – Choral Music Education, lecturer** member. University of Nebraska at Omaha.
Search Committee – Music Technology Manager, staff chair. University of Nebraska at Omaha.
Faculty Advisor – Music Industry Student Organization University of Nebraska at Omaha.
Chancellor’s Commission on the Status of Women member. University of Nebraska at Omaha.

- 2018 **UNO Percussion Ensemble Tour – Technical Manager** University of Nebraska at Omaha.
- 2018 **BOCH Festival Administration – Music Technology** University of Nebraska at Omaha.
- 2017- **College of Communication, Fine Arts and Media High Tech and Media Committee** member. University of Nebraska at Omaha.
- School of Music Technology Committee** member. University of Nebraska at Omaha.
- School of Music Undergraduate Curriculum Committee** member. University of Nebraska at Omaha.
- Faculty Advisor – Audio Engineering Society Student Chapter** University of Nebraska at Omaha.
- 2014-15 **Composer’s Forum** graduate vice president. University of North Texas.
- 2010-12 **Composer’s Guild** vice president. Cole Conservatory, CSU Long Beach.

NON-ACADEMIC SERVICE AND ORGANIZATIONS

- 2019- **Paper Reviewer – International Computer Music Conference (ICMC) 2019** Invited paper reviewer for the International Computer Music Conference (ICMC) 2019. Papers reviewed in a double-blind adjudication process.
- Paper Reviewer – International Conference on New Interfaces for Musical Expression (NIME) 2019** Invited paper reviewer for the International Conference on New Interfaces for Musical Expression (NIME) 2019. Papers reviewed in a double-blind adjudication process.
- 2018- **Composition Adjudicator – Society for Electro-Acoustic Music in the United States (SEAMUS)** Nominated composition adjudicator for pieces chosen for performance at annual national conference.
- Paper Reviewer – Sound and Music Computing (SMC) Conference 2018** Invited paper reviewer for the Sound and Music Computing (SMC) Conference 2018. Papers reviewed in a double-blind adjudication process.
- Paper Reviewer – International Conference on New Interfaces for Musical Expression (NIME) 2018** Invited paper reviewer for the International Conference on New Interfaces for Musical Expression (NIME) 2018. Papers reviewed in a double-blind adjudication process.
- 2015-18 **ScoreFollower.com** (new music recording + score YouTube videos) co-curator for Mediated Scores channel. Additional work on “Featured Composer” series for Claus-Steffen Mankoff, Panayiotis Kokoras, Beat Furrer, and Jennifer Walshe. Served as adjudicator for several projects including “Follow My Score” 2016, 2017, and 2018.
- 2017- **Cycling’74 Vizzie** beta tester.
- 2015- **Intellijel (modular synth manufacturer)** group beta tester for Shapeshifter and Rainmaker modules.
- 2016- **bach automated composer’s helper** (Max externals, bachproject.net) beta tester.
- 2015- **Society for Electro-Acoustic Music in the United States (SEAMUS)** member.
- 2014- **International Computer Music Association (ICMA)** member.
- 2013-14 **eMotion Technologies eMersion System** (wireless gesture sensors) beta tester and product demos.
- 2013- **American Composers Forum** member.

CONFERENCE, FESTIVAL, AND CONCERT ORGANIZING ACTIVITY

Conferences, Festivals, and Concerts Organized

- 2017 **corporeality** technical director, performance and immersive installation. University of North Texas. April 18, 2017.
- 2016 **Texas Humanities Arts Technology Sciences (TxHATS)** venue assistant and audio setup, University of North Texas.
- Leonardo Art/Science Evening Rendezvous** venue assistant, University of North Texas.
- 2015 **nanoGalactic** technical director, performance and immersive installation. University of North Texas. April 20, 2014.
- International Computer Music Conference** technical planning and venue technician, University of North Texas.
- Initiative for Advanced Research in Technology and the Arts Symposium** technical director, University of North Texas.
- 2014 **Contact++** assistant technical director, intermedia performance. University of North Texas. April 14, 2014.
- International Confederation of Electroacoustic Music (CIME / ICEM)** venue technician, University of North Texas.
- Electric LaTeX Festival** performer-composer liaison, rehearsal coordinator, University of North Texas.
- 2013 **CEM|circles Festival** venue technician, University of North Texas.
- Electric LaTeX Festival** University of North Texas campus submission organizer, Tulane University.
- 2012 **Sampling Concert** co-organizer, student-initiated electronic music concert. CSU Long Beach. April 3, 2012.
- 2011 **Knobs Concert** co-organizer, student-initiated electronic music concert. CSU Long Beach. November 8, 2011.
- Computer Music** co-organizer, student-initiated electronic music concert. CSU Long Beach. April 26, 2011.

Papers Presented

- 2019 **International Conference on Auditory Display**
“The Sonification of Solar Harmonics Project”
- International Computer Music Conference**
“The Sonification of Solar Harmonics Project”
- 2017 **International Conference on Technologies for Music Notation and Representation**
“Performer Action Modeling in Real-Time Notation”
- 2016 **International Conference on Technologies for Music Notation and Representation**
“Performance Practice of Real-Time Notation”
- 2015 **International Computer Music Conference**
“VizScore: An On-Screen Notation Delivery System for Live Performance”

Music Presented

- 2019 **Electronic Music Midwest Festival** *Amber Lambents (2019)*
- Int’l Conf. on Technologies for Music Notation and Representation** *Law of Fives (2015)*
- Omaha Under the Radar Festival** *Amber Lambents (2019)*
Shaken to the Core (2019)
- SEAMUS 2019** *Phoenix and Firewhip (2018)*

	Open Circuit Festival	<i>Terraformation</i> (2016-17)
2018	SIGGRAPH 2018	<i>Instrument / One Antarctic Night</i> (2016-18)
	International Computer Music Conference	<i>Everything Will Be Shaken</i> (2016)
	Sound and Music Computing Conference	<i>Everything Will Be Shaken</i> (2016)
	North American Saxophone Alliance	<i>Heirlooms [fayth]</i> (2018)
2017	Electroacoustic Music Festival Ecos Urbanos	<i>Everything Will Be Shaken</i> (2016)
	International Computer Music Conference	<i>Hookean Elastics</i> (2015)
	SPLICE Festival	<i>Pulsar [Variant II]</i> (2014)
	New York City Electroacoustic Music Festival	<i>Everything Will Be Shaken</i> (2016)
	Int'l Conf. on Technologies for Music Notation and Representation	<i>Terraformation</i> (2016-17)
	Electrobrass Festival 2017	<i>Ursa Minor</i> (2015)
2016	Diffrazioni Multimedia Festival	<i>Everything Will Be Shaken</i> (2016)
	Electric LaTeX Festival 2016	<i>Ursa Minor</i> (2015)
	Sound and Music Computing Conference	<i>Hookean Elastics</i> (2015)
	New York City Electroacoustic Music Festival	<i>Hookean Elastics</i> (2015)
2015	Shanghai Conservatory of Music Electronic Music Week	<i>Law of Fives</i> (2015)
	The Engine Room London Sound Art and Electronic Music Symposium	<i>Pulsar [Variant II]</i> (2014)
	New York City Electroacoustic Music Festival	<i>Dark Star</i> (2013)
	International Computer Music Conference	<i>Pulsar [Variant II]</i> (2014)
2014	Audio Art Festival, Kraków, Poland	<i>Dark Star</i> (2013)
	International Computer Music Conference / Sound and Music Computing	<i>Pulsar [Variant I]</i> (2013)
		<i>Dark Star</i> (2013)
	National Student Electronic Music Event (N_SEME)	<i>Dark Star</i> (2013)
2013	CEMlcircles	<i>Pulsar [Variant II]</i> (2014)
	Electric LaTeX Festival 2013	<i>Pulsar</i> (2009)
	OK Electric Festival	<i>Music for Knobs I</i> (2011)
	Festival dei Due Mondi Spoleto	<i>Silbertöne</i> (2013)
		<i>Upon Return to Earth</i> (2013)

SELECTED EXPERIENCE AS A PERFORMER

2019	Electronic Music Midwest Festival mandolin and live electronics. Kansas City Kansas Community College. September 5, 2019.
	Omaha Under the Radar Festival mandolin, found objects, and live electronics. OutSpaces, Omaha, NE. July 26, 2019.
	Music of Minor Planets live electronics. Realization of graphic score by artist Jay Heikes. Joslyn Museum, Omaha, NE. July 18, 2019.
2017	TENOR 2017 harmonica. Performed Ryan Ross Smith's <i>VR Totalitarian Scoring Study</i> . May 25, 2017.
	Electrobrass Festival 2017 tuba. Performed <i>Ursa Minor</i> . Cookeville, TN. April 8, 2017.
2016	Electric LaTeX tuba. Performed <i>Ursa Minor</i> . University of Texas. November 5, 2016.
	TENOR 2016 percussion. Performed Ryan Ross Smith's <i>Study No. 50</i> . Cambridge, UK. May 29, 2016.
2015	Noisy Ambient Visual Beauty modular synthesizer, live improvisation. Rubber Gloves, Denton. October 28, 2015.
	Ex Mus Expanded Sleep modular synthesizer, live improvisation. Beefhaus, Dallas. March 13-14, 2015.

- 2014 **CIME/ICEM 2014** live diffusion. Eight channel diffusion of Ken Gubler's *Kontinuum* and Kenn Mouritzen's *Mo-du-lo*, University of North Texas. October 4, 2014.
CIME/ICEM 2014 live processing. Telematic improvisation involving Argentine Trio Alcaraz-Biffarella-Catalano, University of North Texas. October 2, 2014.
- 2013 **OK Electric 2013** knobs, computer. *Music for Knobs I*, Living Arts, Tulsa, OK. October 19, 2013.
CEMlcircles Festival computer. Directed and performed Stephen David Beck's *inChuck*, University of North Texas. October 5, 2013.
South by Southwest (SXSW) keyboards. The Great Albatross, Austin, TX. March 14-15, 2013.
- 2012 **Long Beach Arts Month, Manazer Gamboa Community Theater** computer. CSU Long Beach Laptop Ensemble. October 26, 2012.
Long Beach Soundwalk knobs, computer. Interactive sound installation using large, custom-designed, Arduino-based controller. September 1, 2012.
Sampling Concert Korg DDD-1 drum machine. Cole Conservatory, CSU Long Beach. April 3, 2012.
W.I.R.E:t/a/p composer, computer, tuba. Concert as part of CSU Long Beach University Art Museum's installation of Lou Reed's *Machine Metal Music*. April 5, 2012.
Vir2Ual Cage: The Long Books computer. Part of a complete performance of John Cage's songbooks. California Institute for the Arts. February 5, 2012.
- 2011 **Knobs Concert** ARP 2600, SCI Pro One. Cole Conservatory, CSU Long Beach. November 8, 2011.
Computer Music tuba, computer. Cole Conservatory, CSU Long Beach. April 26, 2011.
New Music Ensemble synthesizers. Participant in a performance of Erik Satie's *Vexations*. Cole Conservatory, CSU Long Beach. February 20, 2011.
- 2010 **New Music Ensemble** synthesizers. Performance of Terry Riley's *In C*. October 5, 2010.
- 2008-10 **Cypress Scratch Orchestra**, tuba.
- 2008 **Golden State Pops Orchestra** tuba.

AWARDS AND HONORS

- 2017 **Outstanding Graduate in Composition** University of North Texas.
Finalist (3rd place) for Electrobrass Festival 2017 for *Ursa Minor*. Cookeville, TN.
Finalist for The 4th Annual Costello Composition Competition for *Night in Arcturus Stream*. Lyra Society, PA.
Winner Nova Ensemble Composer Competition for *Polytera I*. University of North Texas.
- 2015 **Finalist for The Engine Room's International Sound Art Exhibition** for *Pulsar [Variant II]*. London, UK.
- 2012 **Composer of the Year** for "exceptional ability and outstanding achievements" in composition. Cole Conservatory, CSU Long Beach.
- 2006 **Outstanding Graduate** College of the Arts, CSU Long Beach.
Dr. Don Andrus Memorial Scholarship for Electronic Music for "outstanding achievements in electronic music." CSU Long Beach.
- 2005- **Pi Kappa Lambda National Honor Society** CSU Long Beach Chapter.
- 2004 **Paul C. Lindsey III Memorial Scholarship** for "exceptional achievement and promise in music composition." CSU Long Beach.

PROFESSIONAL SKILLS

Digital Audio Consoles: Allen & Heath SQ, PreSonus SL, Midas M32, Behringer X32, Yamaha CL

Analog Audio Consoles: Audient ASP8024, Allen & Heath GL, Mackie 8-Bus

Digital Protocols: Dante, Qsys, MAD1, Crestron

DAWs: Pro Tools, Logic Pro, Reaper, Ableton Live, Audacity

Digital Signal Processing: Max (incl. gen~ and jitter), PureData, Faust, JUCE, SuperCollider, CSound, Arduino/Processing, Python, Soundhack

Music Notation: bach (Max externals), Finale, Sibelius, Lilypond

Video Software: Premiere, After Effects, Final Cut Pro

Graphic Software: Photoshop, Illustrator, InDesign, Acrobat

Web Development: HTML/CSS, Wordpress

Academic: Canvas, Blackboard, SAP Concur

Languages: English (native), German (basic), French (basic)

SOFTWARE DESIGN

- 2018-19 Sonification of Solar Harmonics (SoSH) Tool, available: <http://solar-center.stanford.edu/SoSH/>.
- 2014-17 VizScore on-screen notation display platform.
- 2016 High-order ambisonic impulse response reverb design proposed by Fernando López Lezcano.
- 2016 Software design and presentation at the Perot Museum of Nature and Science of *Digital Drum Circle*, part of Social Science.
- 2015 Software model of tape-delay system for Jonathan Harvey's *Ricercare una melodia* (1984). Commissioned by Toshi Chun.
- 2014 Software design and telematic performance in collaboration with Trio Alcaraz-Biffarella-Catalano at CIME/ICEM 2014.
- 2013 Software design and presentation at the Perot Museum of Nature and Science of *Making Music with Everyday Sounds*, part of Social Science and the CEMlircles Festival.
- 2013 Software design for Martin Herman's *Afterglow* (2013) for laptop ensemble, performed at La Mama Spoleto Open. Commissioned by Martin Herman and the Laptop Ensemble.
- 2013 Software design for Alan Shockley's *[upon] glint in river's bed* (2013) involving four laptops performers with live soloist. Commissioned by Alan Shockley and Martin Herman.
- 2012 Software model of Vesta Koza DIG411 delay system for Thea Musgrave's *Narcissus* (1987). Commissioned by John Barcellona.

