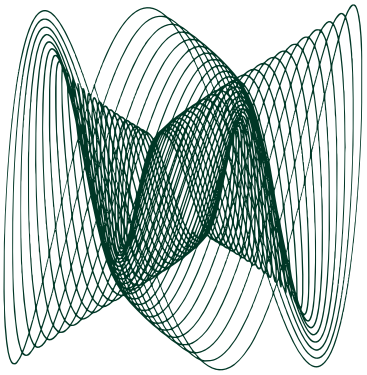
STANDING WAVE ICMC 2022



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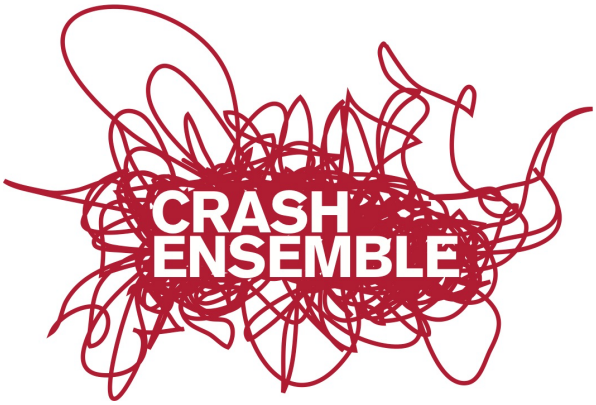

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Workshops

July 3, 9:00-18:20
Teaching Critical Machine Listening and Machine Learning with FluCoMa
Pierre Alexandre Tremblay, Owen Green, James Bradbury, Ted Moore

This workshop will present the foundations of a curriculum developed by the Fluid Corpus Manipulation team, designed to teach critical machine listening and machine learning within a Max, SuperCollider, or Pure Data class.
The day-long workshop will provide participants with first-hand experience of the FluCoMa tools, their supporting pedagogical materials, and a sample curriculum, all of which will enable a discussion around workshop participants' experiences and practice with similar technologies in pedagogical context.

July 3, 14:10-18:20
Creating Collaborative Telematic Performances with Collab-Hub
Nick Hwang, Anthony Marasco, Eric Sheffield

This workshop serves as an introduction to building remote/local networked audiovisual performances and pedagogical tools using Collab-Hub, a package for telematic collaboration based on Node.js. Collab-Hub aims to be platform agnostic; it can be implemented within a number of popular creative platforms such as Max, Pure Data, web browsers, Arduino-based microcontrollers/instruments, the Monome Norns, and applications that send and receive OSC. Users connected to the Collab-Hub server through any of the aforementioned applications can share control data across flexible interaction topologies, collaborating with all users or specific partners without the need to rewrite any backend code or reconfigure a server.
Collab-Hub is a system built for sharing various types of data and allows for different types of communication models (like pubsub, event, and broadcast). Collab-Hub also eliminates the need for collaborators to be aware of their/each others' IP address. It has applications in many performance paradigms, including telematic performance, laptop orchestra, mixed ensemble with digital elements, distributed control, net-to-physical interaction, and more.
Participants will be guided through the setup process of a basic Collab-Hub configuration using Max as a starting point. After the basics are covered, participants will practice sharing collaborative data with one another before divining into some more advanced techniques for building interaction topologies in a performance. These skills will then be applied to other creative platforms through provided examples featuring web browser, Arduino, Pure Data, and Norns integration. In the final section of the workshop, participants will be able to communicate amongst each other through their platform of choice and will work together in groups to design a new collaborative performance.
The workshop facilitators will present an overview of their experiences developing projects with Collab-Hub that demonstrate different network performance paradigms—local, remote (telematic), and embedded (Internet of Things). Facilitators will also demonstrate topics, answer questions and help troubleshoot issues, and provide basic templates/code bases for participants to keep and expand into larger projects of their own. While this workshop will see participants exploring a number of different audiovisual creative software, a majority of the time will be spent working in Max. Some prior knowledge of Max will be helpful but not necessary, and a registered copy of Max is necessary if participants would like to save any edits they make during the session. All Collab-Hub centric software and example files are free to download and use.

July 9, 9:00-13:10
ossia score 3 workshop
Jean-Michaël Celerier

This workshop will give an overview and teach the participants how to use the free and open-source software ossia score which recently reached version 3.
Dubbed "interactive sequencer for the intermedia arts", it is a system which combines both the non-linear time-lines and the data-flow paradigms to allow artists to create rich evolving multimedia artworks, musical pieces, museum installations, etc.
Version 3 introduces support for a real-time GPU-enabled video pipeline seamlessly integrated with the rest of the system, live-coding for C++ (and many other languages), support for tempo, musical metrics, hierarchical polyrythms, and a generalized looping primitive for its interactive time-line among other features.

Demos

July 7, 10:40-11:10

The Generative Sound File Player: A Corpus-Based Approach to Algorithmic Music
Christopher Chandler

The Generative Sound File Player is a composition and performance tool for algorithmically organizing sound. Built in Max and incorporating the bach and ears library, the software allows the user to load, analyze, and parametrically control the presentation any number of sound files. At its core is bach's powerful new bell (bach evaluation language on llls) scripting language that allows for rich and powerful control of sound through text-based input or a graphical interface. The software sits at the intersection of generative music, concatenative synthesis, and interactive electronics. For a demo presentation at ICMC 2022, I propose giving a demonstration of its core functionality, including patterning modes, and creative applications.

Wireless motion sensing on a budget
Marcin Pączkowski

I would like to present the custom wireless motion-sensing technology I have developed for several my pieces. The system consists of an accelerometer-based sensor, a WiFi-enabled microcontroller, a dedicated wireless connectivity and a data processing pipeline in the SuperCollider environment. The sensors are small and easy to wear, do not interfere with instrumental performance, and can be assembled using relatively low-cost parts. In this presentation I also address some practical concerns after using this system for numerous performances.

Piece + Papers

July 3, 19:40-20:10

My Heart is a River: Ghost Affect between Audiovisual Composition and Instrumental Performance
Freida Abtan, Seth Parker Woods

My Heart is a River is a twelve-minute immersive performance featuring cello and surround audiovisual media, written by Freida Abtan for Seth Parker Woods. The piece integrates the presence of the performer on stage with that of his representation in the projected scenog-raphy and musical accompaniment. It uses synchresis to create gestures within the audiovisual composition that direct the attention of the audience around the perfor-mance space. The author discusses the piece's creation process, constructed affect, and challenges to stage. She notes that the live cellist's performance is colored by attributes from the surrounding media in which he is featured producing a kind of ghost affect between his different representations within the narrative.

July 6, 17:20-18:20

Artifacts of 'not-here'
Juan Parra Cancino, Jonathan Impett, Magno Caliman

The current state of technology, with all their implications, demands us to bring to the fore the value that it has to question the way we relate to technology as humans. The notion that technology is something that reduces the friction between us and the world is very problematic. Without friction, without resistance, there is no instrumental 'spark' that can generate anything new. All the elements described in this project are therefore seen and treated as possibilities to understand the inaccuracies of our network technologies as the body of the instrument that I would like to 'play'. Drawing parallelisms between the glitches produced by the technical limitations of our current tools, with the limitations of historical technologies, is presented as a way to reflect on what could be aesthetic implications of embracing these technologies as a whole, in their current state.

Networking the Flight of the Monarchs
Rob Mackay, David Blink, Jessica J. Rodríguez, Rolando Rodríguez, Grant Smith, Pablo F. Jaramillo-López

'Networking the Flight of the Monarchs' (audiovisual telematic performance) - Soundscapes from monarch butterfly reserves in Canada, Mexico and the USA will be live-streamed from open microphones installed in 2018 and 2019, and blended with improvised performances networked in real-time from California ; Mexico; Canada; and the UK.
In this performance, multiple spatialities and temporalities are layered together, creating connections between past, present, and future, as well as multiple webs between human and non-human participants, weaving together in a dance of agency. The intended effect is a kind of 'telephenomenology', building a sense of connectedness, embodied knowing, and empathy. 'Following the Flight of the Monarchs', is an interdisciplinary acoustic ecology project bringing together artists and scientists, connecting with ecosystems and communities along the migration routes of monarch butterflies as they travel the 3,000 mile journey between Mexico and Canada each year.

July 9, 11:00-12:00

WOW-LOG : Electronic Music Project for Cochlear Implant Users
WONWOORI, Jong-Hwa Park, Ji-Yoon Hong

Owing to the technical limitations of cochlear implants, the users of such implants perceive sound and music differently from those with no hearing impairments. While they can perceive and understand sounds in simple conversations, cochlear implant users have a hard time perceiving music with various ranges. Therefore, they cannot enjoy listening to music. To extend the "joy of music" to cochlear implant users, they must be able to share and understand different experiences in relation to music and sounds.
Since April 2019, the composer intends to develop playful media and create music by recreating the audio world of cochlear implant users, using electronic instruments. The composer tried to understand this world of different sounds through musical interactions, and to study the fundamental elements of music for human beings. As a result of finally being able to enjoy music, cochlear implant users could ultimately "develop sound discernment and a sense of hearing."

LEM: a sound object that performs Live Electronic Music and proposes a new way to compose and distribute music
Spyros Polychronopoulos

Since the invention of the phonograph the majority of the musical releases are made in such a way that same audio at every playback is executed. With this work I propose a sound object (Live Electronic Music: LEM) that is programmed to interpret the musical piece, always with a different variation at every iteration. LEM is a stand-alone, iterative composition device. A small plastic box houses a single board computer running an algorithm that plays random audio samples selected from a sample bank. Further, the algorithm is programmed to alter the variables of the audio filters randomly and in random instances, within defined limits. This flexibility is an important compositional factor as the decision, with this practice, is not single and concrete (i.e., the composer specifically determines the way for the piece to be played) but probabilistic (i.e., the composer determines the likelihood of more than one way for the piece to be played, as in aleatoric music). This work proposes a new way of music distribution shaping the way a composer makes a decision, and the audience perceives live and prerecorded music. The piece reveals itself endlessly, exposing new dimensions and dynamics drawn from a table of acoustic elements.

July 9, 12:10-12:40

Automating Art: A Case-Study of Cellular Automata in Generative Multimedia Art
Enrico Dorigatti

This paper aims to furnish an overview of Life, a real-time generative multimedia artwork based on a custom version of the Game of Life algorithm developed by mathematician John H. Conway. Life deals with generative art, cellular automata, and the concepts of visualisation and sonification. The explanation of the artwork itself is preceded by an overview of the relevant surrounding contexts, aimed in particular to familiarise with the concepts of generative art and cellular automata.

July 9, 19:35-20:35

the effects of binary erosion on music composition expressed in notated score
Adam McCartney, Thomas Grill

Composing quantum music: Psi
Rodney DuPlessis

Psi (2021) is the culmination of years of compositional work and research into the sonification of classical and quantum systems. Classical objects push and pull in tangible and deterministic gestures. A Newton's cradle collides on one side, energy courses through the system, and it erupts on the other side. Quantum objects mystify the imagination with erratic and unpredictable behavior. Psi guides the listener from a classical mechanical sound world into a quantum soundscape populated by quantum harmonic oscillators. For these quantum sounds, I created a software, QHOSYN, that sonifies evolving wavefunctions using the time-dependent Schrödinger equation. I also used several other original software applications. In this presentation, I accompany a listening of Psi with a look into the process, tools, and ideas that went into its creation. I present some methods for translating quantum principles into sound and discuss some of the aesthetic considerations regarding the use of quantum physics in music composition. I point to new connections between arts and science catalyzed by this work.

Papers

Paper Session 1: Hardware and Software Systems, Composition Systems and Techniques
Lero sponsored
July 4, 9:00-10:00

Phil Winsor's Eighth Degree of the Yang Ch'in and Showers of Flowers An examination of Process and Development
Ken Paoli

Phil Winsor (1938-2012) worked as a composer, educator, author and visual artist. During his last creative period, Winsor turned his attention to producing computer music videos and multi-channel works. This paper examines "Eighth Degree of the Yang Ch'in," an 8-channel work; and "Showers of Flowers," a computer music video that uses the Yang Ch'in piece for its soundtrack. This paper intends to provide an insight into the working methods used by Winsor to bring his concepts to realization. This includes the processes and materials that Winsor developed for these works, the micro and macro aspects of the musical structure and the conversion of the multi-channel work into a video soundtrack.

Collaborative Electroacoustic Music Composition on the Blockchain
Kosmas Giannoutakis, Juan Carlos Vasquez

In the last decade, blockchain has been established as a transformative technology which begins to impact key sectors such as finance, health, energy, administration, and agriculture, among many others. In relation to arts, much of the current research focuses on the problems of protection, dissemination, and monetization of art and music, which is created by conventional means. In this paper, we take a more experimental approach and propose a blockchain system for collaborative electroacoustic music composition that achieves consensus by measuring a contribution value. The main advantage of such an approach is a secure documentation that promotes trust and guarantees the integrity of the whole process while supporting a collaborative ecosystem for new music creation. We introduce a Proof of Creative Contribution (PoCC) consensus protocol which measures a contribution value and assigns the composer with the highest value to record the composition data on the blockchain. In addition, we document a simulated compositional process that demonstrates the diversification of the block creator whose contributions have been received well by the network. The system supports a compositional process that is based on modular units, enabling multiple electroacoustic music pieces to be composed simultaneously, asynchronously, and non-linearly.

Echo and Narcissus: Live Coding and Code Poetry in the Opera
Alexandros Drymonitis

Echo and Narcissus is a live coding poetry opera for two singers, live electronics, live visuals, and fixed media. Its main characteristic is its libretto which is written in the Python programming language, instead of English, or another natural language, following the code poetry paradigm. By combining code poetry with live coding, the libretto is being typed live during the performance and it functions as the audio engine of this work, calling various methods that process or produce sound. All audio processing is done in Python with the Pyo module for DSP. The live visuals are realised in openFrameworks and the projection of the libretto to the audience and the signers is done with Raspberry Pi computers. This work was commissioned by the Onassis Cultural Centre and realised by the artist group Medea

Electronique. It was presented at the main stage of the Onassis Cultural Centre in Athens on the 19th of April 2018.

Paper Session 2: Languages for Computer Music; Composition Systems and Techniques

Lero sponsored
July 4, 10:10-11:10

Improvising Avatars: Game Environments as a New Medium for Interactive Computer Music
Steven Lewis

This is a presentation of research outlining the technical and aesthetic considerations in conceptualizing, constructing a virtual game environment as a new medium for procedurally interactive computer music. Extrapolating techniques from a litany of culturally diverse musical practices, including free jazz performance, improvisation, acoustic augmentation, and procedural sound design, a cross-platform, computer-mediated environment between Max/Msp~/Jitter and the Unity Game Engine emerged. The resulting experiment was a virtual musical world featuring a hybridization of an indeterminate Free Jazz Performance Model, with the improvisatory activity occurring between the human performer and a secondary, virtual player controller.
In an effort to derive novel, electro-acoustic improvisational techniques based on non-linear, procedural human-computer interaction, the virtual player's gestural options, as well as their discreet and continuous movements, are converted into a stream of running data. By constructing a musical environment in this manner, there exists an inescapable duality between the participating musicians, where the human performer and virtual player's output greatly influences the decision- making process of the other, and by extension, the processing of the audio and video source material.

TidalVortex Zero
Alex McLean, Raphaël Maurice Forment, Sylvain Le Beux

In this paper we introduce 'version zero' of TidalVortex, an alternative implementation of the TidalCycles live coding system, using the Python programming language. This is open-ended work, exploring what happens when we try to extract the 'essence' of a system like TidalCycles and translate it into another programming language, while taking advantage of the affordance of its new host.
First, we review the substantial prior art in porting TidalCycles, and in representing musical patterns in Python. We then compare equivalent patterns written in Haskell (TidalCycles) and Python (TidalVortex), and relate implementation details of how functional reactive paradigms have translated from the pure functional, strongly typed Haskell to the more multi-paradigm, dynamically typed Python. Finally, we conclude with reflections and generalisable outcomes.

O2: Communication Middleware for Real-Time Distributed Music Applications
Roger B. Dannenberg

O2 is a communication protocol or "middleware" for real-time music applications. It features automatic discovery to simplify network configuration, clock synchronization, a reliable message option, and named services. A new version of O2 offering new capabilities is described. O2 now supports global discovery and communication, extending the previous version, which was limited to a single local area network. O2 can also deliver messages through shared memory allowing efficient lock-free communication with high-priority audio threads. Multiple styles of communication are facilitated in this new version, which supports taps to copy or "spy" on message streams. Taps can be used to implement publish/subscribe directly, and services also

have writable properties that are eagerly pushed to peer processes for reading. Typical applications of O2 in creating computer music systems are described.

Paper Session 3: Composition Systems and Techniques

Lero sponsored
July 5, 9:00-10:00

Max as a Tool for the Musicological Analysis of Computer Music
Frédéric Dufeu, Michael Clarke, Peter Manning

The Max software, created by Miller Puckette and currently developed and distributed by Cycling '74, was designed in the 1980s as a graphical programming environment for musical creation, and has since then been used in several other artistic domains. But as a programming environment, Max can also be used for non-creative purposes; this article presents how it can be used as a tool for the musicological investigation of the repertoire of computer music. After an introduction to software-based approaches to the study of such a repertoire, an extensive research project dedicated to nine case studies serves as a basis for the discussion of key aspects of developments using Max in a musicological context. In this paper, the focus is on the potential afforded by Max in such contexts rather than on the particular musicological investigations. Perspectives for a generalization of this approach are therefore proposed, considering the modules created in this project according to their specificity, generality, or potential for abstraction beyond the work that motivated them. This ultimately leads to a consideration of Max as a tool for musicological research and analysis beyond the field of computer music.

EmissionControl2: designing a real-time sound file granulator
Curtis Roads, Jack Kilgore, Rodney DuPlessis

EmissionControl2 (EC2) is a stand-alone application for interactive real-time sound granulation. As a laboratory instrument, EC2 enables detailed control over the vast parameter space of granular synthesis for the composition of extreme granular textures and gestures. In this paper we describe the theoretical underpinnings of the software and shed discuss design choices made in creating this sound granulation tool. The paper covers the main features of EC2 with an emphasis on per-grain synthesis and signal processing. We discuss the graphical user interface design choices as well as the theory of operation and intended use cases that guided these choices. We describe the architecture of the real-time granular engine, which generates and emits grains in synchronous or asynchronous streams. We conclude with a brief evaluation of the software.

Rage Against The Glue: Beyond Run-Time Media Frameworks with Modern C++
Jean-Michaël Celerier

We identify a set of issues with the current abstraction systems for media objects and introduce a methodology to solve these issues, associated with a sample implementation in the Avendish library. This methodology is based on the limited reflection features available in recent C++ versions, unlike the existing systems which are overwhelmingly based on class-based inheritance or other run-time affordances of the language.
We propose using a simple subset of the C++ object model to define media processor's metadata and interface declaratively: this subset can be reflected and used for synthesizing the binding code to various plug-in interfaces such as VST, the Max or Python API, and automatically generate UI code or OSC APIs at compile-time.

Unlike existing systems and frameworks, our proposed method has the advantage of being entirely non-intrusive: the media processors do not need to inherit from existing base classes or be part of a framework: it enables writing a media processor without having to include any specific header in its implementation.

Paper Session 4: AI and Music; Software and hardware Systems

Lero sponsored
July 5, 10:10-11:10

Identification of the Most Relevant Zygonic Statistics and Semantic Audio Features for Genre Recognition
Igor Vatolkin

Zygons measure similarity relationships between derivations (changes) of characteristics of musical events, like pitches and note durations. The statistics of zygons can describe properties of composition styles and musical categories. In this work, we present a method to identify the most relevant zygonic statistics for the recognition of musical genres which helps to better understand the important properties of that genres. Our approach is based on the extraction of zygons for discretised audio features and the analysis of non-dominated fronts after multi-objective feature selection. The statistics of zygons are also compared to and combined with a large set of audio semantic descriptors from a previous work. The results on a publicly available dataset show that the classification performance is improved for 12 of 19 genres when zygonic statistics are added to other semantic features.

Generating Musical Accompaniments with Instrumental Solos for Pop Music
Kevin Cua, Von-Wun Soo

When generating instrumental accompaniments for a popular song's vocal melody, the accompaniment needs to be able to support the lead melody sung by the vocalist so that the lead melody can sound more colorful with the accompanying instrumental melody. In a popular song, the lead melody or the singer may have "break moments" where the lead melody or singer is silent. In these moments, the instrumental accompaniments generated by state-of-the-art models do not deviate from what they normally generate, which can cause listeners to lose interest. Thus, because there is no lead melody, there is nothing to accompany. We propose an interpolation composition method based on the transformer model that can improve the current accompaniment generating models by adding an instrumental solo generation module whenever the singer is absent. Overall, our Interpolation Transformer was able to generate instrumental solos that can combine with the original accompaniment to improve upon the baseline accompaniment generation model. We also learn that including an instrumental solo in the parts where the singer is quiet indeed increases the likelihood that the accompaniment is preferred twice as much by human evaluators compared to an accompaniment without an instrumental solo.

Towards Interpreting and Improving the Latent Space for Musical Chord Recognition
Christon Nada, Jakob Abeßer, Michael Taenzer

Automatic chord recognition (ACR) naturally faces musical ambiguities between chord classes. These can be responsible for many misclassifications, especially in large chord vocabularies. In this paper, we propose a metric learning approach utilizing a triplet loss for the task of ACR in order to reduce chord ambiguities. In particular, we investigate how metric learning with different triplet sampling strategies re-aligns the distances between different chord classes in the

latent space. Our main finding is that metric learning significantly improves the ACR performance for two taxonomies with five and nine chord classes.

Paper Session 5: Lero sponsored short papers
July 6, 9:00-10:00

Autocoder: a Variational Autoencoder for Spectral Synthesis
Davíð Brynjar Franzson, Thor Magnusson, Victor Shepardson

We introduce the Autocoder, a simple machine learning tool for spectral synthesis and sound manipulation. The Autocoder is a creative framework that takes a sound — harmonic or inharmonic, monophonic or polyphonic — learns its surface features such as harmony, pitch and timbre, and generatively synthesizes a continuous soundscape in real-time, based on the trained model.

Resurrecting Score-11 in Siren: What ever happened to the 1980s score languages?
Stephen Travis Pope

This paper describes a "software archaeology" project in which a new interpreter was created for the Score11 music representation, a popular 1980s music input language that was frequently used with the Music11 non-real-time software sound synthesis package. The new version runs within the Smalltalk-based Siren system, a library of software classes for music representation, algorithmic composition and live interactive performance. The project background is given, and the port of Score11 to the Siren environment is described and evaluated.

Tunable Instrument Body Resonances: From Measured Instrument Body Impulse Response to Parametric Convolution
Eoghan Ó Néill, Miguel Ortiz, Maarten van Walstijn

We describe a method to model resonant bodies from measured Impulse Responses. We use the Filter Diagonalisation Method to extract the prominent modes of the resonant body in order to calculate IIR filter coefficients. This modelling allows for real-time parametric convolution of instrument input signals with the chosen resonant body's IR. A case study is presented where a bank of filters modelling a measured cello IR is implemented in embedded hardware and used in a 3D-printed cello instrument. This study demonstrates accurate modelling of the measured IR, with the addition of parametric control of parameters such as decay rate and modal frequencies.

Laterally Coupled Oscillator Systems
Dave DeFilippo

We describe a method for laterally coupling oscillators. The structuring creates a second-order of feedback relations that generate patterns on a higher level of organization. The idea involves arranging a set of three or more oscillators. Overlapping subsystems of those oscillators are measured for descriptions. Those descriptions then serve as conditions under which oscillators outside the subsystem are affected by dynamically changing the frequency based on the description.

Paper Session 6: Sort papers: Software and Hardware Systems
July 6, 10:10-11:10

Elastic Transformations: a graphical rhythm transformation process
Odysseas Klissouras, Alexandros Kontogeorgakopoulos, George Sioros

This paper presents an algorithm and software that implements it for the gradual transformation of musical rhythms through graphical means, as well as the artistic installation "Waiting for Response" where it was first used. The transformation is based on the manipulation of the timeline of the input rhythm, which is treated as geometric form in constant transformation. The aim of the algorithm is to explore rhythmic relations in an evolutionary manner by generating transformations based on graphical and geometric concepts and independently of the musical character of the initial rhythmical pattern. It provides, relates and generates a genealogy of rhythms based on an initial rhythm, which may be perceptually unrelated. "Waiting for Response" is an artistic installation that employs the above transformation in the generation of sonic events to enter in an acoustical "dialogue" with the materiality of the exhibition space.

RhythmTrain: Making Rhythmic Sight-Reading Fun
Reece Godfrey, C. Fox

Rhythmic sight-reading forms a barrier to many musicians' progress. It is difficult to practice in isolation, as it is hard to get feedback on accuracy. Different performers have different starting skills in different styles so it is hard to create a general curriculum for study. It can be boring to rehearse the same rhythms many times. We examine theories of motivation, engagement, and fun, and draw them together to design a novel training system, RhythmTrain. This includes consideration of dynamic difficultly, gamification and juicy design. The system uses machine learning to learn individual performers' strengths, weaknesses, and interests, and optimises the selection of rhythms presented to maximise their engagement. An open source implementation is released as part of this publication.

Towards Open Source Hardware Robotic Woodwind: an Internal Duct Flute Player
James Bennett, Bethan Moncur, Kyle Fogarty, Garry Clawson, Dr Charles Fox

We present the first open source hardware (OSH) design and build of an automated robotic internal duct flute player, including a bellow artificial lung and pitch calibration system. Using a recorder as an introductory instrument, the system is designed to be as modular as possible, enabling modification to fit further instruments across the woodwind family. Design considerations include the need to be as open to modification and accessible to as many people and instruments as possible. The system is split into two physical modules: a bellow artificial lung and a fingering module, and three software modules: actuator control, pitch calibration and musical arrangement. The system is able to perform beginner level recorder player melodies.

Real-Time Conducting Animation from Sheet Music
Andrea Salgian, Kseniya Rychkova

In this paper we present a system that extracts conducting information from sheet music encoded in a MusicXML file to generate a real-time animation that conveys the gestures that would be performed by a conductor. The information includes time signature, tempo, dynamics, and entrance cues. The approach could form the basis of an educational virtual conductor application that edu-cates budding musicians, or could be used as a means to augment an orchestral performance with synchronized visual displays.

Paper Session 7: AR & VR
July 7, 9:00-10:00

Facilitating Accessibility in Virtual Reality Musical Environments
Damian Mills, Franziska Schroeder, John D'Arcy

Immersive technologies are showing increasing potential for accessible music making. Costs, availability, interfacing methods and open-source development tools allow for exploration of the potential to facilitate atypical minds and bodies. We present a participatory study on the facilitation of accessibility within virtual reality musical environments. This study was carried out during a series of workshops with an experienced group of musicians with congenital physical disabilities and a community music group of novice musicians with acquired brain injuries. We qualitatively evaluate prototype instruments adopted for hand recognition. We examine this embedded process, asking how a musician may understand, organise and personalise their virtual music environment, while examining how co-locating virtual instruments with physical surfaces can be used as potential aids to accessibility. Findings show that when participants are matched to the technology, it contains potential for musicians to gain agency through a process of shared knowledges and shared explorations. Understanding and personalising their own musical environment means perceiving affordances and uncovering hidden affordances. We find the quickly adaptable, visual, iterative processes of participatory design using VR is engaging and motivating for musicians and the wider network of stakeholders.

Adaptive touchless whole-body interaction for casual ubiquitous musical activities
Sutirtha Chakraborty, Azeema Yaseen, Dr. Joe Timoney, Prof. Victor Lazzarini, Damián Keller

Within the context of the initiatives targeting ubimus interaction metaphors, we demonstrate a camera-based gesture recognition system that enables individual and collaborative virtual control of percussion aiming at both co-located and distributed collective music making. We highlight three features of this tool: i) a calibration mode featuring the action of grasping or pinching to handle colour-coded visual referents, ii) the support for both stable and adaptive movement tracking with the goal of enabling consistent sonic feedback for everyday gestures during whole-body interaction, and iii) the iterative exploration of imitative strategies in collective music making, based on shared nonverbal knowledge. Our approach to calibration aims at a flexible plus stable multisensory interaction design to address differences in camera positioning, body characteristics and camera-player distances. Usage is compatible with dance-like motions and gesture mimicry. Targeting collaborative usage, a client-server architecture was implemented to support quasi-synchronous interactions on multiple machines. The virtual drum prototype can be played either locally or remotely with fairly low usage of bandwidth. As supplementary material, we include demonstrations of the proposed design's potential for ubiquitous music applications. We also discuss limitations and opportunities for deployment in everyday settings, aligning our interaction-design goals with casual usage.

WithFeelVR: the Spatial and Textural Affordances of VR as a Mapping Strategy for an Accessible Digital Musical Instrument
Lewis Smith, Frank Lyons, Brian Bridges, Dr Rob Casey

The spatial affordances of VR have been explored for musical purposes in recent years, but the tactile affordances that are becoming increasingly available with current hardware have been relatively underexplored for music. The prevalence of consumer VR systems has created a renewed interest in embodied theories in tangible computing. However, there is a moral

obligation for designers of accessible systems to focus on people-centred design methodologies. This paper will explore how the affordances of VR, with respect to adaptable mapping strategies, have supported the design of an Accessible Virtual Reality Musical Instrument (AVRMI) whilst also supporting participatory design practices. To begin participatory design processes, it is essential to find common areas of understanding between designer and participants. Within this paper the authors describe design strategies that explore the spatial and tactile affordances of VR as an embodied method of establishing a framework for the participatory design of an accessible and immersive system for music making. We conclude by presenting further designs resulting from these initial stages.

Paper Session 8: Short papers: History of Electroacoustic Music; Studio Reports
July 6, 10:10-10:40

Computer music and post-acousmatic practices
Ulf A. S. Holbrook, Jøran Rudi

This short paper considers the practices of computer music through a perspective of the post-acousmatic. As the majority of music is now made using computers, the question emerges: How relevant are the topics, methods, and conventions from the "historical" genre of computer music? Originally an academic genre confined to large mainframes, computer music's tools and conventions have proliferated and spread to all areas of music-making. As a genre steeped in technological traditions, computer music is often primarily concerned with the technologies of its own making, and in this sense isolated from the social conditions of musical practice. The post-acousmatic is offered as a methodological perspective to understand technology-based music, its histories, and entanglements.

Cincinnati Computer Music 2022
Mara Helmuth, Yunze Mu , Kieran McAuliffe, Grace Choi, Carl Jacobson, Andy McFarlane, Wenbin Lyu

The University of Cincinnati, College-Conservatory of Music Center for Computer Music became a largely virtual studio from March 2020 until the end of the school year in April, 2021, due to the pandemic. Courses and most concerts were presented online. Back in person in Fall 2021, the studio is to resume temporarily online activities at the time of this writing in January 2022. Research projects include various virtual reality music environments, some using uRTcmix, an artificial intelligence-informed interactive music system, improvements to and applications using Web RTcmix, and RTcmix granular synthesis instruments. A variety of compositions were presented on Sonic Explorations concerts and recitals, and the CiCLOP laptop orchestra project continued to present innovative performances. The studio also encourages diverse musical and personal perspectives

Paper Session 9: Acoustic Ecology; Perception and Cognition
July 8, 9:00-10:00

Soundscapes of the Past: Historical Imaginings
Dr Aki Pasoulas, Dr. Brona Martin, Dr Andrew Knight-Hill

Histories are primarily documented in visual or written form. Our 'Sonic Palimpsest' project seeks to subvert this occularcentric focus, exploring the potential of sonic perspectives, to unlock alternative understandings of our past.

Chatham dockyard, our case study site, was founded in 1547 and closed as a working yard in 1984. During the 400-plus years of its operation, tens of thousands of people were employed (or forced to work) in building construction and in launching more than 500 warships and repairing thousands of others. Countless stories have been collected throughout this period, some through diaries (the 17th C. diary of Samuel Pepys is a notable example) others found in oral history archives, books and papers. Our team has explored these sources and conducted new oral history interviews, applying anthropophonic perspectives to see if we can unpack new insight through sound.
Our research has demonstrated the rich potential of musical and sound-based knowledge frameworks to in-form human, embodied and affective understandings of history which foreground people and place across time. This paper gives an overview of some of the salient sounding histories uncovered, focusing on three selected areas: the life of convicts in the dockyard, Samuel Pepys' diary, and our own interviews with former workers of the yard.
In this article, we describe information we used to cre-ate two main outputs for our project: a) A collection of 10 miniature compositions called Whispers of the Past, based on oral history interviews; and b) a Heritage Soundmap that presents scenes from 5 different centuries (in progress); the soundmap will be available online and as a physical installation in Chatham Dockyard.

Seeing Sounds, Hearing Shapes: a gamified study to evaluate sound-sketches
Sebastian Löbbers

Sound-shape associations, a subset of cross-modal associations between the auditory and visual domain, have been studied mainly in the context of matching a set of purposefully crafted shapes to sounds. Recent studies have explored how humans represent sound through free-form sketching and how a graphical sketch input could be used for sound production. In this paper, the potential of communicating sound characteristics through these free-form sketches is investigated in a gamified study that was conducted with eighty-two participants at two online exhibition events. The results show that participants managed to recognise sounds at a higher rate than the random baseline would suggest, however it appeared difficult to visually encode nuanced timbral differences.

Designing 3D-printed spectrograms for blind students
Nathan Wolek, Grace McEllroy

Visual representations of recorded sound waves enable computer users to make useful insights into the sound they are hearing. A three-dimensional graph known as a spectrogram can convey how frequency and amplitude are changing through time, providing listeners with opportunities to view with their eyes details that might be missed by their ears alone. However, these opportunities are not accessible to blind persons. While developing lessons about sound for a group of blind and partially-sighted students, we experimented with 3D-printing techniques to produce tactile learning aids based on spectrograms. This paper gathers background research, documents our design process, and records wisdom learned along the way so that others wishing to pursue similar experiments after us will have a head start. A final set of five 3D-printed spectrograms was designed for a lesson about common features of sound events (duration, intensity, pitch, timbre, pattern, speed). We describe the models from this set in detail and provide instructions for downloading the associated digital files so that anyone can 3D print these models for their own projects.

Music

Opening Concert
July 3, 21:25-22:00

With Douglas Ewart and Derek Bailey
George E. Lewis

This audio documentation of my interactive computer music work Rainbow Family is taken from three days of live performances that took place in May of 1984 at the Salle de Projection of the Institut de Recherche et de Coordination Acoustique/Musique (IRCAM). The performances are the culmination of two years of sustained research and creative work in fulfillment of an IRCAM commission. Thanks to Tod Machover and the late and greatly missed David Wessel (1942-2014), I spent three years there, meeting Pierre Boulez (1925-2016), Tristan Murail, Philippe Manoury, and many others, and making some lifelong friends and associates, like Kaija Saariaho and Jean-Baptiste Barriere, as well as György Kurtág (the younger) and the late Oliver Johnson (1944-2002), a lifelong friend of Wessel's (and a fellow drummer) with whom I performed in Steve Lacy's ensembles.

For a number of years, the only account of Rainbow Family, the first of my "interactive virtual orchestra" works and a precursor to the better-known Voyager virtual orchestra and "interactive virtual improvisor" systems from 1987 and onward, was in Georgina Born's still-controversial (in some circles) book, Rationalizing Culture: IRCAM, Boulez, and the Institutionalization of the Musical Avant-Garde (University of California Press, 1995). Despite the fact that most personages in the book are delineated with coded initials, those who venture into that complex ethnography will have no trouble recognizing the Rainbow projects and its composer. In all probability, this was the first commission from IRCAM for what were then called "microcomputers" (small systems) as well as the first that involved so-called improvising computer programs. Thus, for those interested in tracing the development of this aspect of my work, especially in the context of the history of interactive computer music-making more generally, this release could be useful.

Erstwhile
Neil O'Connor

When composing, two paradigms become evident concerning the desired degree of 'Textuality' (interactivity, pre-determined, linear) or "Interactivity" (highly autonomous systems) that appear. Many works fall within a continuum (transformative, generative or sequenced) between these two extremes, hosting a combination of fusion, conflict, continuity and contrast that help present various planes of sound. These landscapes are articulated through processing, the compositional processes and techniques such as the acceleration/deceleration of tempo and the increasing/decreasing of density.
Erstwhile was composed using SPEAR - an application for audio analysis, editing and synthesis. It works in the following way - an analysis procedure represents a sound with many individual sinusoidal tracks (partials). This analysis is then time stretched, processed and spatialized. This process helped me to alternate density in an evolving manner, and to texture and tone.

To Know Again
Roger Doyle

Concert 1
July 4, 11:20-12:35

Mahanaim II
Yi-no Chen

Mobiusband
Yu-Ren Huang

There is a saying that goes, "Music as an art of time."
"Mobiusband" is a work about time. I try to expound the phenomena of time, such as parallel universes, reversal, relative time, by using electronic metronomes and Max/MSP. In the end of the music, there is a same sound at the start, making it became a loop. That's why I named it "Mobiusband."

Urban evolution (2021)
Jinhao Han, Li Gengyu, Liu Jiayue

During these decades of urban sprawl, land that was once covered in greenery has been flattened and compacted to create a variety of buildings and infrastructure for the expanding urban population to settle in. Nowadays, cities are getting bigger and bigger, population densities are increasing, and people's aspirations for a better life have turned into a headlong struggle to get through the buildings. Somehow "escaping the city" has become a trend and a fad, with people imagining how beautiful nature is in what was once a beautiful land and consuming natural resources to call for its protection. The contradiction between the city and nature has become acute in our time, but who remembers what it was that people conquered nature for in the first place.
By presenting the contradictions of urban development, this work calls the viewer to consider the nature of urban construction, to recall our original intention to conquer nature and to reflect on whether our actions are firmly based on

Points of Departure II
Yu-Chung Tseng

The sound source of "Points of Departure II" was mainly drawn from the limited fragments sampled from Chinese instruments, including Pipa, Zheng, and Sheng.Those clips were then manipulated through the technique similar to "developing variation" used by Brahms and others to work out all the possibilities of transformation of the material, and to further abstract, to "white wash" their identity for desired sonic gestures and timbres.
The processed sounds were then re-organized and montaged to form a musical work with artistic interests.
The work consists of 7 sections with different characteristics and each section departs for its own new sound journey with a punctuated percussive sounds, taken from Chinese instrument-Pipa's plucked sound with transformations.
"Points of Departure II" was created and finished at the Sound Lab at National Yang Ming Chiao Tung University(NYCU) in Taiwan on December in 2021.

Music from Metaverse: 3D Illusory Immersive Soundscape "The Spirit of the Giant Tree"
Zoe (Yi-Cheng) Lin

Can a tree feel? What kind of consciousness does a tree have? One day I saw a giant tree, with its rough bark and trunk and I wondered about its existence. This work depicts the growth of a giant tree, starting from a seedling, growing a rough, barky trunk, and all its life experiences of blooming, decay, and finally rebirth. No matter the environment, this tree puts all its energy into growing and stretching. The music is composed in ambisonic system, surrounding the audience with the notion of a tree and its journey. It then plays in the first person conveying to the listener what the giant tree feels. In the middle of composing this work, I suddenly realized that the giant tree was more of an extension of Earth's consciousness, with an even longer life. I felt a primitive throbbing of the forest the ancient spirit of Earth and its power to recover and persevere, even though humans have brought her such harm. The Earth gives life, which will always come and go, with eternal love.

EGO——For piano, dancer, computer and video
Junhong Zhang
Dancer：Yang Zhijie, Yang Jie
Piano：Wan Hongshan
Post-production：Chen Wuyang

Creative motivation:
"In the philosopher Freud's theory, the three parts of consciousness, namely the id, the ego, and the superego, constitute a person's complete personality. Simply put, the true self is human instinct, and the superego is Our idealized goal is that the ego is somewhere in between, the regulator is the id, and is subject to the superego."
In reality, we often feel anxiety, fear, hesitation, and hesitation. It seems that there are two different selves living in our bodies.
Theme:
Everyone "lives" a different self in his heart, which is the contradiction and conflict between the body's instinctive desires and the moral constraints of following the principles of reality; it is the struggle and drag between the body and the soul, reality and fantasy. Although we all have only one face, we have many faces. These faces are different selves in the body. As we continue to move forward, we adjust ourselves in our own environment.

Zuihua Yin
Yongbing Dai

"Zui HuaYin" is a work that creates a clarinet and electronic music with a mentality of depression. The poet said"The mist is thick and the clouds are sad forever. The festival is again Chongyang, the jade pillow screen cabinet, cool in the middle of the night. After Dongli turned the wine into dusk, there were subtle fragrance sleeves. Modao does not dispel the soul, the curtain rolls the westerly wind, and the person is thinner than Huanghua."
It uses D and A Tones and overtone to develop and change the theme.Meantime, Refraction of my depression

Violin Concertino
Akira Takaoka
Violin: Kiko Matsuhashi

Violin Concertino (2019) comprises six sections, A1-B1-A2-B2-B3-A3. The harmonic materials consist of constantly transformed pitch-class sets so that they explore the entire 12-tone pitch space in various ways. The transformations of pc-sets and melodic figures are strictly regulated by Lindenmayer systems, mathematical models of the growth of plants developed by theoretical

botanist Aristid Lindenmayer. The rule systems are implemented in my own computer program for algorithmic composition written in Java. The Java program generated the violin part and the score files for the sound synthesis and processing software RTcmix, written by Brad Garton and his associates. Its instruments of channel vocoder, additive synthesis, and various filter instruments produced all the synthesized sounds. Dynamics and tempo markings on the score are restricted as few as possible so that the performer can freely add ornaments, improvise, and tempo rubato.

Concert 2
July 4, 13:30-14:30

Gonna Cut You Up
Barry Moon
Saxophone: Kyle Hutchins

This is a piece exploring the types of cut-up techniques employed by William Burroughs and other authors. Although "moment form" has been thoroughly explored since Stockhausen first coined the phrase, for me there always seems to be too much intentionality behind the results. By taking a far more haphazard approach I feel I was able to create something a little more like reading Burroughs.

rabbit locked in the kitchen
Ayako Sato

Instead of eating out, we have to cook dinner in the rabbit's kitchen. We need to stay home in fear of something unseen, but for how long? What do we have to be afraid of? Isn't it time to move on to the next kitchen? Rabbit doesn't need to be scared of anything.

What Sleeps Beneath
Kramer Elwell

“A mother bear and her two cubs were driven away by a raging forest fire. The bears swam for many hours, but soon the cubs tired. Mother bear reached the shore first and climbed to the top of a high bluff to watch and wait for her cubs. The cubs drowned within sight of the shore.” "What Sleeps Beneath” is inspired by the Anishinaabe creation myth for the Sleeping Bear Dunes National Lakeshore and the Manitou Islands in Lake Michigan, and is composed of sound source materials recorded in the field at the Lakeshore. Sound sources include: Lakeshore soundscapes (waves, foliage, rocks and sediment, various species of fauna, grasslands), antique metallurgy or mechanisms found within historic lakeshore farmhouses, and various fire starting implements (matches, campfires, torches, etc).

Our Ancient Woods
Sarah Keirle

Welcome to Britain, thousands of years ago. Walk through our ancient woods, our rivers and wetlands, our open meadows and dense forests, all thick with the sounds of nature. Hear the calls and movements of animals that roamed this landscape.
Every sound you hear was created using recordings taken at Wildwood Trust, a centre for the conservation of British wildlife that features both past and present species. Twenty-seven of these species appear in Our Ancient Woods:

Arctic Fox · Barn Owl · Boar · Common Crane · Eagle Owl · Eurasian Elk · Eurasian Lynx · Eurasian Otter · European Bison · European Brown Bear · European Polecat · European Wildcat · Fallow Deer · Grey Wolf · Konik Horse · Little Owl · Pine Marten · Raven · Red Deer · Red Fox · Red Squirrel · Red-Billed Chough · Reindeer · Rook · Soay Sheep · Tawny Owl · White Stork

Does it Matter?
Alex Buck

Presumably, plastic is the synthetic material that best symbolizes human debris. There are countless products made from plastic; it is on our clothes, our food, in the water. Plastic is everywhere. Unfortunately, contemporary urban societies are leaving their traces for centuries to go. Yet, plastic material bears some positive side effects too. For instance, plastic enabled unprecedented music development during the 20th Century. The emergence of the audio recording-diffusion technology fostered the development of existing musical genres and eased the invention of new ones. Among the new genres was musique concrete. So, I chose to articulate sounds from "obsolete" recording-diffusion plastic devices and samples from musique concrète's first cycle of works—Études de Bruits. Then, I asked singer Abigail Whitman to improvise, incorporating sounds of suffocation, shortness of breath, and agony to represent mother nature choking out plastics.

Concert 3
July 4, 14:40-15:40

Pluit
Cristian Biasin

"Pluit" is a six-minute composition in which the author represents the variable trend of a principle of rain. The instruments have been chosen to recreate a dialectic between them, each playing a proper part but also trying to be protagonist of an experience that takes on the features of a "sensory storm".
The xylophone and the harp represent the unpredictability of the rain, through short notes that bounce from one point to another like raindrops, till they merge in a great mass of water represented in the "full" of the song. In most of the composition the harp is played using the xylo technique.
The composition revolves around the chord of Lab major and La minor, with slight and sporadic harmonic deconstructions. At times, the form is fragmented and irregular, tending towards a recursion of dissonant contrapuntal elements and frequent fifth and fourth intervals.
The acciaccature - often double and triple – progressively increase in terms of frequency and intensity, resulting in the embellishments that depict timbrically and perceptually the key moments of the composition.
The "full" parts are enriched and emphasized by percussions and strings, agitated and tumultuous, debating with trills, tremolos and glissando, till they discharge all their energy. In the rest of the composition, strings and percussion create the background atmosphere.
The composition was designed for an indoor environment with a large reverberation time.
The characteristic of the piece is rendered by numerous accents and dynamic excursions, from pppp to ffff, in a widespread manner especially for the xylophone and for the harp.
The most orthodox instrument of all the ensamble is the rain stick, handcrafted personally by the composer. His main role is the creation of a suggestive atmosphere, where the listener can tend to rest, while perceiving an apparent calm that does not make him feel completely out of danger.

Reflecting Cau Cau and Parque Urbano El Bosque
Ambrose Seddon

This work is composed from three field recordings gathered as part of the Soundlapse project (www.soundlapse.net). The recordings are taken from the urban wetlands of Cau Cau and the Parque Urbano El Bosque, located around the city of Valdivia in Chile. The acoustic environments conveyed by the original recordings are rich in activity and different kinds of wildlife, and whilst it was tempting to re-present these in this work, I felt pertinent sound transformation might draw attention to features that I found particularly interesting - the pitch inflections of the birds, the drones of the distant traffic, the iterative utterances of the nearby frogs. I hope this guided listening journey allows time and space for contemplation.

Concert for Smartphone Network
Andreja Andric, Małgorzata Żurada, Maja Bosnić, Marija Šumarac

Concert for Smartphone Network is at the same time a music composition, a piece of distributed computer software and a collective improvisation practice, for a distributed networked smartphone ensemble. The performers develop the music together and use the network system to explore new ways to connect with each other through collective music making. The network system behaves like one instrument for multiple players.
The software performs sound synthesis, visual effects and music-related network communication. It combines and synchronizes the individual music lines of different performers into one music flow, mitigating delays over long-distance networks. This makes it possible for the Ensemble to perform together in precise synchronization despite usually performing from different countries.
The work is typically twenty minutes to an hour-long performance of fast and intense loops of synthesized sound, exploring variation, repetition and timbre variation in 1-bit sound resolution.

Concert 4
July 4, 16:10-17:10

BLOCK
Noah Berrie

"Everything yielded and invisible holes opened everywhere. However, the overall structure did not disappear; even if you suddenly found yourself alone somewhere, you could feel things tugging and tearing at you. […] You could call it music; you felt elevated by it. I did not feel as if I were moving on my own legs. I felt as if I were in a resonant wind." –Canetti
BLOCK experiments with conflict between strict formal organization and the disorganization of natural sound. The act of composing mirrors the ordering of bodies. Beginning with the "block" – identical cells arranged by a few basic rules – the structure inevitably loosens, becoming more like fields of sound and space. Voices overlap and ascend; pitch variations beat against each other. The friction pulls the entire structure upwards and gradually apart. The block dissolves.

Antithesis
Patrick Gunawan Hartono

This piece is composed during the 6th Melbourne's lockdown where all the sound materials are based on the recording of the surrounding object that "interacts" with me daily.

Since I lived in a small apartment, my movements are constrained within premises (bedroom, living room, kitchen, balcony) that created a unique "pattern", which then inspired me to interpret it into two compositional approaches: Sonic structure and sound spatial.
There are four movements in this composition, and although there are structurally "separate," but sonically bound. This connection is present through scratching sonic texture morphing over time and existing within each movement. In terms of spatiality, each sound (track) is moved either clockwise or counter, creating an immersive layer of aural experience. Through these composition approaches, I'm trying to reflex on how the current social circumstances affect us. And how, as a composer overcoming these uncertainties in creative ways.

Wetlands
Aki Pasoulas

Wetlands are transition zones (also known as ecotones) between dry land and aquatic environments. Urban wetlands add anthropogenic pressure because of the proximity of human activity to the natural ecosystems. This composition explores a dialogue between sounds living, moving and interacting in those spaces, creating also tension and release moments when these meet with human-made noise and activity. All sounds live in a cooperative coexistence, even during the most intense moments in this sonic world.
The composition is based on field recordings of urban wetlands around the city of Valdivia in Chile.

Concert 5
July 4, 17:20-18:20

Indisputably Alive
Larry Matthew Gaab

Living. The piece spreads a turbulent liveliness over vast sonic terrains. Percussive attacks ignite spirited exchanges extending evolving sound clusters. Sparkling, shearing swirls encompass a sound field riddled with movement and tonal variations and emerging departures. The work eventuates a deep aural massage that animates internal vibrations.

Stutter
Chin Ting Chan

Stutter paints an electroacoustic soundscape consisting of sounds of metals interacting, stretching, and colliding. The sounds are digitally processed with Rossum Electro-Music's Assimil8or module. The music explores the rich timbre and personalities these sounds have to offer.

Nor Hope
Wenbin Lyu
Soprano: Stephany Svorinić

Nor Hope was written for soprano and fixed media in the summer of 2021. The music is based on the poem Death written by William Butler Yeats. Most of the electronic sounds are generated by the programming language that explores the sounds, textures, and timbres of the soprano.

Lunar Trajectories (2021) for Augmented Piano
Marc Evanstein

Lunar Trajectories is a work for interactive player piano, created using SCAMP (Suite for Computer-Assisted Music in Python). In each of its three movements, the piano's interactive response is based on musical trajectories found within the corresponding movement of Beethoven's moonlight sonata. In the first movement, the piano responds to each pitch the performer plays by recalling what comes after that pitch the first time it occurs in the moonlight sonata. Interactivity in the second movement is based on tracing the resolution of suspensions in the original second movement. Finally, in the third movement, short gestures become the seed on elaborate arpeggios up and down the keyboard.

Sk(etch)
Leah Reid

Sk(etch) is an acousmatic work that explores sounds, gestures, textures, and timbres associated with the creative process of sketching, drawing, writing, and composing.
The work was composed with two projects in mind: working with EMPAC's wave field synthesis array and for Núcleo Música Nova's «microFOLIA» project.

Usynlig
Stewart Engart

Usynlig is an acousmatic piece that was made by first analyzing 64,533 audio files through MIR corpus analysis and then constructed from the bottom up by means of querying, clustering, classifying, measuring similarity/dissimilarity, navigating latent space, and musical intuition. The piece was commissioned by Carolina Performing Arts for Compose Carolina 2021 with the prompt of "In The Now". The piece addresses this prompt through constructing gesture of concrète iconic and referential sounds. These sounds have consistent inner logic through the MIR analysis and the piece asks the listener to listen past recognizable sounds and listen to the larger phrase and structural construction.

Concert 6
July 4, 21:15-22:00

Sabbath v.3 (2020) for live video and live electronics
Luis Fonseca

Sabbath is an original piece for live video (Iannix) and live electronics (Max/MSP) which is a virtual walk inside the Salamanca cathedral in Spain, where acoustical impressions are expressed in a dichotomy of real sounds collected from original manuscripts from its archive and virtual timbres based on the texts from this original manuscripts through a algorithmic composition system.

Power Trio
Jack Walker

Power Trio is a solo piece for guitar, bass and drums. A guitar is fed into a computer system that makes selections from a corpus of bass and percussion sounds that were recorded with Manuel Alcaraz Clemente and Margarethe Maierhofer-Lischka of Graz's Schallfeld Ensemble. The guitar is analysed and used to direct the manner in which sound is drawn from this corpus of pre-recorded sound. The outputs of this system are similarly analysed and used to control sound processing algorithms, and the form of the piece emerges as a result of this complex interaction between live, recorded and processed sound. With enormous thanks to the Institute for

Electronic Music's Inter_Agency team (where this piece was started) and FluCoMa (who helped me strategize an interface for it).

Concert 7
July 5, 11:20-12:35

MADSTCOLL
Takuro Shibayama, Sayaka Abe, Yuki Handa, Ryogo Hashimoto, Katsuya Kobayashi, Takumi Mashita, Tsuzuki Nagai, Miho Nogaki, Takahiro Suzuki, Yurina Yoshida

This piece is a collaborative work by students taking a course at the graduated school of an university in Japan. Twelve pieces were composed based on individual concepts, and they were remixed. Each piece by composed them can be regarded as a collective of acoustic fragments cut out from everyday life through the perspective of those in their twenties living in Japan today, with using the expressions based on noise, madness, tinnitus, lo-fi acoustic images between memory and reality, and the computer related noises. This work is a collective that resonates with each other after spending 2020 bound by COVID-19.

《透镜下的弦响》 *The Sound of the Strings Under the Lens*
Ding Qiancheng

The inspiration of the work comes from the composer watching the launch process of "Shenzhou XIII". From the macroscopic perspective of the universe, human history is but a drop in the ocean of the universe, a moment in a long time. From the micro perspective, various human individuals are concrete and clear, writing the long history of mankind together and influencing the development of the history. The sound materials of the work all come from piano sampling, and the composer mainly expresses the sound world from the perspective of "micro" and "macro" through the contrast and transformation of "point-line-plane" sound shapes.

In the Late Night
Hyojoo Kim

"In the late night" was inspired by sound that I could hear in the late night. Samples and synthesized sound were used to composed this piece.

Organic City
Shuoyi Li

The work is a four-channel electroacoustic music. The author sampled sounds in the city her live as materials to express the following topic in form of soundscape: The routine of urban dwellers just like substances get into each organ to take part in vital movement through blood.
The first part, the sounds inside the subway and the hammering sound are taken as the main sampling materials to make a micro-living environment. The second part, human voice samples are introduced to form a mutual echo relationship. The third part evolves from the first part to reflect a three-part structural logic.

Foodchain
Mikako Mizuno

This piece foodchain contains cyclic interactions between a pianist and the virtual self-image which supports the pianist's actions and keeps direct connections with the pianist's activities. During the performance, the Disklavier is projected as the second-piano part which is actually prerecorded. The pianist plays the first-piano part, which has musically interacted with the second-piano part of Disklavier. The interactions includes both systematically implemented real-time interactions and musically prescribed ensemble in the points of complemented rhythm, interplay of the phrases, balance of dynamics etc. The complements between the two piano parts in the long repetition of quintuplet patterns have unbalanced dynamic accents which make the two parts separated into two isolated spaces. The two parts played on frames of the same beats run separately with each other because of the unbalanced accents.

HeTu and LuoShu （Composed for GuZheng(Chinese Zither) and Max/MSP）
Luo Chao

Yi Zhuan·The Great Appendix wrote that The Ho gave forth the map, and the Lo the writing, of which the sages took advantage. It is said that at the time of FuXi (a mythical Chinese emperor who was credited with the invention of I-ching), there are draconequus appearing from the Yellow River and carrying the HeTu(River Map) and turtles appearing from Luo River, carrying the Luoshu on their backs. The ancients deduced The Primordial Eight Trigrams based on Hetu and acquired The Posterior Eight Diagrams based on Luoshu. Thus, the TaiChi diagram was shaped and the Eight Diagrams were formed, which later became the source of I-Ching(The Book of Changes).
This work takes HeTu and LuoShu as the creation object, I has imitated the timbre of Guqin by GuZheng(Chinese Zither) and make sound development of its own timbre. With musical instrument performance used as Yang, and electronic audio used as Yin, Yin and Yang alternate, and finally after the emergence of Tai Chi in the chaotic period (Wuji: Primordial Universe) when Yin and Yang are not separated, it forms the origin of all things.
The computer processing platform in this work is the Max/MSP interactive platform, and all sounds are interactively processed and sampled in live.

Disorder NO.1 – Polar
Yung Hsin Cheng

I attempt to incorporate unconventional music techniques into the series of "Disorder". The idea is inspired from the questions during composing, such as "how do we solve the problems during composing" and "why do we apply this compositional technique?" I tried to leave the shoulders of giants and find a balance between order and disorder. This piece is the first work in the series "Polar". The sound materials came from the analog synthesizer MicroBrute, which combines the sounds with the primitive waveforms, mimicking the various appearances in the polar. Quadraphonic speakers in binaural are set for listeners to experience the unpredictability of sounds from the polar region.

Concert 8
July 5, 13:30-14:30

If I Could Do It All Over Again
Connor Scroggins

Fragments and utterances of vocal syllables, whispers, hums, and whines form the basis for this piece's language. This language translates into the varying aural environments of the electronics. In some moments, the electronics and voice meld together. In other moments, they grow toward

or apart from each other, contrast yet live with each other, or even abruptly shift the direction of the piece. Though moments of stability emerge, uncertainty still pervades like morphing memories. In these memories, words are a blur yet tone of voice and feelings are poignantly vivid. Just as one cannot take back the words of the past or travel back in time and change their actions, the piece does not return to an aural environment already visited. Instead, the music weaves forward with an ever-shifting focus like compounding experiences molding and distorting each other yet reinforcing an obstinate inner drive to enact change.

Duree
Jing He

This is an experimental work based on the Max / msp platform. It is a continuation of last year's ICMC2019 time series. Time is not static and one-sided. The development process of things cannot be simply divided into independent causal relationships. Therefore, the same time unit in different time periods cannot be counted as the same time. It is like the hour of yesterday and the hour of today are not the same hour. We usually refer to this concept of time as "Duree". This work uses an algorithm written by Max / msp, which tries to break the traditional view of time in music by changing different waveforms within the same time parameter.

Concert 9
July 5, 14:40-15:40

Tremolando
Antonio Scarcia

A fixed media work which features occasional acoustic instruments samples and sounds by digital synthesis, alongside heavy manipulation in the time and frequency domains. Materials are organized as if performed by a (virtual) large orchestra, while a subtle effect of tremulant (as if in pipe organ technique) is eloquently embodied in the low register at bourdon. The native stereo format of Tremolando is ideally intended for indoor multi-phonic projection with an interpreter at the mixing console.

Poplite
Francesco Bossi

The idea that a continuous tone can be broken into smaller amounts of time derives from the ancient atomistic philosophies. In this way, I have always been influenced by a particular approach to algorithmic composition and sound synthesis.
The focus is mainly on the expressive potential of the processed sounds and then the grouping of phonic materials into new sequences.
Furthermore, this work is more on the side of the whispers than on the side of the shouts.
In addition, spatialization and convolved reverberation play a key role.
This formula produces musical sense by expanding and shortening times and frequencies from the original waveforms.
The synthesizer was designed and built with Max-MSP.
Poplite will have its first preview in ICMC 2022.

Sapphires
Gustavo Chab
Voices: Lia Ferenese

This piece was conceived in three different process:
Sapphires appear at the beginning as precise and punctual materials "a place where absorption of light is possible". The first version of the piece where the structure can be heard. "As an Interaction between matter with different wavelengths of light as a sounds".
Dichroism is more descriptive and oneiric. The voice like a derive of the spectrum of Sapphires (a precious gemstone).
Exploring new vocal possibilities as a part of a musical expression in this piece. Nontextual sonic combined with electronic sounds of the first piece: a variation of the word/phoneme of *Sapphires* is mixed and process creating new sounds like an "incident polarization state of light... A material will absorb light, like a Corundum depending on the presence of transition impurities in its crystalline structure".
Diattenuation is a variation that include materials of the previous pieces.

syn
Robert McClure

syn (2021) is four short movements centered on an imagined future world where synthetic beings have become the prevalent species. Digital has become the new religion. Any yearning for the distant past organic way of life is shut down. The work follows a synthetic being, SB-1021, and their "sins" against this new culture.
i. corpora - The body, and thus physical labor, is the only valued aspect of SB-1021.They are replaceable cogs in the machine of production. SB-1021 slips into vivid daydreams and halts progress, a sin.
ii. intima - Imagination is a sin. They are forced into digital meditation to clear their minds. SB-1021 covertly engages in wild fantasies before being surveilled.
iii. loquere - SB-1021 attempts to develop expression in their vocalizations This useless expression of the self in the synthetic world is a sin for which SB-1021 will be punished and terminated.
iv. viscera - viscera details SB-1021's punishment and termination as they are torn apart from the inside.

And I Woke up at the Darkest Dawn Ever
Dariusz Mazurowski, Laurent Estoppey

And I Woke up at the Darkest Dawn Ever was composed for for baritone and soprano saxophones (single performer) with tape. It's a personal artistic expression, dealing with my thoughts of dramatic changes during last 2 years – in my country and the whole World. Everyday routine, troubles, somehow limited social and cultural life. A truly dark age. The definitive / basic version of electronic part is a 6-channel audio projection (5.1). This piece is a dialogue between real instruments and electroacoustic counterpart – quite frequently it's impossible to recognize if the sound is live or prerecorded, where is the borderline between these 2 elements. Aesthetically the main idea is based on expanding saxophone range with complex transformations, the main audio source. Others include complex analog, digital and hybrid synthesizer patches, various textures created with the use of phase vocoder technology. For the multichannel mix various advanced software processors were used.

Pareidolia
Eric Burton Davis

"Pareidolia" refers to the tendency for humans to find familiar elements and patterns within a seemingly random or abstract texture, such as finding faces in the clouds or voices from within

the noise of an air conditioner. This fixed-media piece aims to capture this phenomenon using sounds which were originally recorded on a French horn, before being transformed into an abstract soundscape which nonetheless contains organic and recognizable elements for the listener to identify.

Concert 10
July 5, 16:10-17:10

Kri-Kri (Sterna Paradisae)
Rikhardur H. Fridriksson

Kri-kri is the verbal interpretation of the sound of the arctic tern (sterna paradisae). The piece is based on the sound of attacking arctic terns in Northern Iceland. Their highly aggressive tendencies vere the inspiration for the piece. The original recording wasn't exactly without risk, and Eyglo Hardardottir gets big thanks for risking her head.

7Sphere Revisited
Villbjørg Broch

Practically everything here is generated with the 8 dimensional algebra : the octonions. The unit length octonions make up the unit 7sphere, which is a 7 dimensional surface, and hence the name. In a way one could say that this is a field recording on the 7sphere. I know that things are well behaved within a certain framework, but the way it is set up, then there are always new things to encounter.
The work is realized as some very large Pure Data externals. Orbits in 8D space, generated with octonion multiplication, are projected and mapped for synthesis. Time structures are generated with octonion multiplication over finite fields of varying sizes. The sound enters a time varying waveguide mesh for spatialization and reveberation, again created with octonion orbits. The encoding to ambisonics, in this case 7th order, happens directly inside the Pure Data object. The piece is generated offline, due to computational intensity.

Sauti
Felipe Otondo

Sauti, meaning both "sound" and "voice" in Zwahili, somehow encapsulates the essence of this piece inspired by field recordings carried out in Kenya in 2012. The work combines community radio recordings and various soundscapes of the city of Mombasa with synthesized sounds and rhythmic patterns extracted from traditional West African music.

Still Life
Robert Seaback

Still Life presents an integrated texture of hi and lo-fi, distant and proximate, interior and exterior sound images. The primary materials for the work consist of soundscape recordings from Gainesville, FL and Oslo, NO, vocal improvisations by mezzo-soprano Marika Schultze, and synthetic sounds made with standard methods. Time unfolds in Still Life in polarised formal oscillations where delicate, subtle incursions on a static landscape give way to dramatic gestures and noise in artificial space.
Recordings were produced in sound field and conventional formats and deconstructed with digital tools across temporal and spectral dimensions. An important technical feature was the use of sound processing techniques based on high-level perceptual attributes in addition to strictly

mechanical processes native to sonic computing. The result is a continuum of sounds that range from acoustically complex to digitally invariant as acoustic sources become co-opted by digital processes.

Concert 11
July 5, 20:00-21:00

Who are you, a composer, conductor, or singer?
Shuyu Lin

The sentence "a composer who doesn't want to be a conductor is not a singer " is a joke, and also the original inspiration of this piece. During the piece, the "conductor" controls the electronic music's timbre, volume, and other characteristics using the Leap Motion, which is a device that senses the hand's gestures; the "singer" sings and reads in the middle of the piece; the "composer" improvises the music according to the score. These three roles — conductor, composer, and singer — exist in one person. The triple-role is the main idea of this piece. In the music, the audience will hear three kinds of media: electronic sound controlled by hand, processed sound from a live microphone, and fixed media sound, which can't be changed on stage.
So, who's on the stage? A conductor who leads the music, or a singer who sings the music, or a composer who improvises it?

The Sound of Molecules
Walker Smith

What does a molecule sound like?
It may seem like an absurd question, but I have always wondered if there was a way to convert the activities of molecules—their rotational, vibrational, and translational motion—into sounds. I have pondered this for a while, but one day I met the current love of my life:
Nuclear Magnetic Resonance (NMR) Spectroscopy. NMR is an analytical technique that chemists use to understand the structure of molecules, but it can also allow us to HEAR molecules! NMR produces characteristic waveforms for different molecules, and writing these data as audio waveforms allows us to recreate the literal sounds of molecules.
With me as your tour guide, I invite you to don your lab coats and safety goggles as we dive into the microcosm of the atomic world and take a bath in the symphony of stochastic sounds and chemical cacophonies created by the mayhem of molecular motion.

Talk-back
Oliver Kwapis

Since my early teens I've dealt with a severe anxiety of performing, or even listening to a piece of mine being performed. In the audience, I fidget uncontrollably in my chair, dizzyingly nauseas, sweating profusely, clutching the program so tightly that by the end of the concert it is just a crumple of unreadable pages. I am petrified that I might throw up in my seat, or faint, or something equally embarrassing. When I perform, my anxiety only amplifies. I think that everyone is watching me in the audience; I know that everyone is watching me on stage.
Talk-back is an attempt to face my anxiety head-on through my music. The piece is a performance of a small panic-attack. Using recordings of both my real anxiety-statements (triggering thoughts) and talk-backs (short, positive mantras that I can think or say to dispute my irrational thoughts) the piece shows how my anxiety builds in performance situations and how I work to lessen my worries through cognitive restructuring.

Concert 12
July 5, 21:15-22:00

Chomsky Hash - for electric guitar & laptop
Seth Andrew Davis

"Chomsky Hash" is a piece for improvisation, electric guitar, and live electronics. The piece utilizes traditional guitar effects processing with a variety of unconventional effects for the instrument, along with a surround panner setup for quadraphonic sound. The title is a reference to the famous debate between Noam Chomsky and Michel Foucault. Famously, Foucault asked to be paid in a large amount of hash for his participation in the debate. Friends would say that on special occasions Foucault would break out "that Chomsky Hash". The relevance of this debate to the piece is the elements I'm working with and transforming. The electric guitar itself has a long history in American popular music and has a lot of specific cultural connotations that could seem traditional even though at times it's been a counter cultural symbol. With the use of DAW's such as Ableton Live or Max/MSP, the electric guitar can be further altered and expanded upon. Noam Chomsky is considered a radical and countercultural figure in American politics, but within the debate with Michel Foucault comes off as traditional and conservative compared to Foucault's Dionysian and hedonistic character traits. The debate itself is an interesting synthesis of the two thinkers' ideas. The main driving factors of the piece are improvisation, timbral transformation, live electronics processing, and spatialization. Since 2019, I've been working on bringing together my instrumental background as a guitarist and improviser with my interest in electronic music. This piece is a part of a series of pieces for electric guitar & electronics. In 2020, I released two albums of my work with electric guitar & live electronics, the first one being dormir, a 45 minute work inspired by the stoner metal band Sleep and Gerard Grisey. The second album was a series of improvisations for electric guitar, E-Bow, and live electronics entitled The Gods Hate Kansas.

Sibila
Rodrigo F. Cádiz, Tomás Koljatic S.

Sibila is a Latin word that could be translated as whistling. The musical performance of this piece is done through a GameTrack device, a popular interface in laptop orchestras. The sound material is based on physical models of whistles and bowls synthesized in the Faust language and sequenced and controlled in real time via MaxMSP.

Refraction Interlude: piano
Matthew Goodheart

"Refraction Interlude" features a solo performer surrounded by a battery of gongs and cymbals that are activated by surfaces transducers. The metal percussion responds to the performer's improvisation, seeming to sound autonomously. The work can be performed by any instrument. Each new performer records a set of samples, short improvisations centered around a specified set of techniques. These recordings are then analyzed and used to as a basis for forms of mixed synthesis, generating sounds that are tailored to the specific acoustical properties of the metal percussion.

Concert 13
July 5, 22:30-00:00

OntoTheNextCount
Christopher SW Anderson

In working with generative real-time; improvisatory electronic music structures and systems, *OntoTheNextCount* is attempting to engage in a strong interaction of performer with a custom multi-agent system rather than using the computer as a secondary fixed element. This work is critically aimed to examine areas of human interaction with hyper-realistic/hyper-meditated models of production and representation while engaging in an interactive generatively assisted performance framework to create music and visual content. This piece is realized through the use of a custom made real-time generative multi-agent system that is compositionally trained and reactive to improvisatorial gestures. This piece explores alternative ways to engage in electronic music performance and representation.

Partial Decisions
Ryan Olivier

Partial Decisions is a real-time, semi-improvised work for solo performer and interactive audio-visual system. The work explores the various sonic and visual results of individuals "choosing" to come together or strike out on their own. The performer can merely impose limits on the decision-making capabilities of the community, but imposing those limits can yield unexpected results, sometimes beautiful, sometimes chaotic, and sometimes beautifully chaotic. Each performance is unique and opens up a chance for new possibilities, a chance for newfound beauty from the partial decisions of the many.

SYNTAX
John C. S. Keston, Mike Hodnick

Concert 14
July 5, 11:20-12:35

Still Moving
Jesse Austin-Stewart, Charley Draper

Still Moving aims to make spatial audio more accessible for those who are hard of hearing. Localization of sound relies on equal spectral and amplitudinal hearing in both ears. If an individual doesn't have equal spectral or amplitudinal hearing, they will be unable to accurately localize a sound source. As people, our ability to localize sound is also strongly informed by what we see. As a result, visual cues can be used to dictate our spatial perception.
The artist has developed 'imagined localization', an approach where all horizontal and vertical spatiality is removed by only using mono audio while implying sound movement through visual cues. The resultant work from this strategy is Still Moving.
In response to the work, two hard of hearing spatial audio composers were surveyed and were surprised by their experience of the spatiality. Neither composer felt as if their spatial experience was hindered because of their hearing, and both found the work to be spatially interesting.

Breathing - for cello, electronic music and visual
QI Mengjie (Maggie)

Breathing is so essential is our lives; sometimes we take it for granted, and never perceive and appreciate it. It means the aliveness of our body, the pace of our mind, and even the freedom of being able to be alive and be active.

The composer tries to create a meditative musical space for the audience to experience their own breathing, with the timbre varies between the original cello sounds and the synthesized sounds in the electronic music, people will perceive their own pace through intensive sounds and relaxing sounds. All the images develop to abstract phantoms following the development of the sounds.

Distress Call
Yi Lun Huang

We are always afraid of the eyes of others and care about all the small
reactions; until it turns out that there is a child living in his heart, who has been sending out a distress signal, but no one has heard the inner child. The original work mainly used the sound materials of glass and doors. The composer modified the original materials and added more elements to increase the dramatic tension of the music and depict the deepest sense of fear in everyone's heart.

Yan Yue
Shi Bowen

The works are inspired by the State-Level Non-Material Cultural Heritage List：Chinese Sichuan dishes. Sichuan cuisine is one of the four traditional Chinese cuisines. Food is not just the ingredients themselves, but also carries hundreds of thousands of cultures, etiquettes and customs. The composer uses washing, cutting, frying, eating, and enjoyment to express the process of making food and the scene of people drinking and having fun after cuisine. It is intended to wake up the listener's sense of hearing through sound, but also wake up the taste buds of the listener.
The work is roughly divided into four sections, using Waves and GRM-Tools plug-ins to perform various artistic sound processing such as cutting, watering, frying, speaking, and eating. The host software used for the work is Logic Pro, and the recording device used for pickup is SONY PCM-D100.

Primal Scream
Chen, Shu-Huang

This piece uses analog synthesizer sound and digital software sampling, combined with German pure electro-acoustic aesthetics and French sampling techniques, to weave a six minute long piece, named Primal Scream, which describes the digital shout of pure voltage control. Dissolve the boundary between human nature and technology.
Section A (~1:50) is a stippled dialogue with each other. Section B (1:50~4:00) starts to add dotted frequency music in the background, and then creates a heterogeneous sense of space between different frequencies, enter C Before the paragraph (4:00~5:00), there was a deliberately broken cutscene. Slowly, the C-segment stretched all the phrases and gradually became a chorus between all the sounds.

The Seed
TAN Liuyang

The seeds, falling into the soil, are fortitudinous and will overcome difficulties to sprout finally.They wait for the rain to moisten and the sun to warm. Also, the seed is a symbol of hope which is full of the life strength.The work describes the process of seed's growing. The composer used the electrinic synthesis material as the main timbre, concrete sounds by recording, and mainly use GRM Tools to process the sounds.

Mirror
L Liu

The work is inspired by the concept of "mirror", using flute and electronic music as the carrier, using sound to describe the blur and reality inside and outside the mirror, breaking the boundary between the two, and allowing the originally parallel scenes to meet in the music.

Untitled: Sigh for flute and electronics
Ying Torng Kuo

"Untitled: Sigh" is a piece for flute solo and Electronics. This piece is surrounded by its pitch centricity D and slide down to the pitch of C sharp which I would like to imitate the feeling like the movement of sigh. Flowing in the whole piece in the breath of in and out. The main design of the Electronics based on the elements of air-noise which was inspired by the sounds come from the playing interactive between flutist and her/his instrument. I attempt to simulate a flute-like electronic sounds, created a sense of abstraction in the double flute performance between nothingness.

Concert 15
July 6, 13:30-14:30

Quanti di luce e suono - per tarogato, immagini e computers interattivi
Alfonso Belfiore
Clarinet and Tárogató: Esther Lamneck

It is written for the Tarogato and for both interactive sound and video.
Every performance will be a result of the realtime interaction of the performer to the live audio and visual processing.
It is a multimedia composition whose main concept is based on the ability to detect the energy distributed in the acoustic spectrum of the sounds generated with the tarogato.
The acoustic energy is captured and through digital processing, shattered into small splinters and returned with deep deviations in time and space, in the same way as the energy quanta that inspire the title of the work itself.
The algorithms analyze the acoustic energy distribution of the tarogato sounds, dividing the spectrum into 25 critical bands.
The energy captured for each critical band will then be returned over time to small packets (how many) no longer in a synchronized manner but with appropriate time displacements that will make their presence perceptible, opening up like a ray of light.

Wind Trails
Mahoor Pourmoghadam, Esther Lamneck

Esther Lamneck and Mahoor Pourmoghadam began their collaboration through her compositions which were performed and recorded by the NYUNME while Esther Lamneck was the artistic director. Both artists were intrigued with ethnic music and wanted to explore the combination of sounds possible with voice and tarogato in this artistic genre.
Mahoor is singing in Persian in "Korde Bayat". This work intertwines the phrases, colors and the sonic exploration of the two performers.

Mellow Bells

Yunpeng Li

This piece is made of a Jingle Bell sound motive. The motive is fully expanded and deformed to reveal a wonderful mellow tone of the world.

Tenterhooks
Shane Byrne

This piece is an exploration of sonic material extracted from the disembodied comb of an old music box. A large body of sound objects were generated from the source material using a generative engine written with Csound. This material was then further processed using a compositional system initially created for the purposes of live performance. Musical parameters were mapped to skeletal data gathered from a Kinect sensor and a custom-built glove. Both of these peripherals enabled me to perform and hone the musical gestures within this piece. After several preliminary experiments with the source material, a number of motifs began to emerge. These motifs became the scaffolding around which the entire piece was constructed.

Concert 16
July 6, 14:40-15:40

Xeno
Enrico Dorigatti

Xeno is a multimedia work based on the intense, dense and continuous twine between audio and video. 'Xeno', a Greek word indicating something extraneous, describes perfectly this work as it proposes a novel, strange and subverted relationship between the two media. Our concept and perception of sounds derive from a world where sonic events are always the consequence of a physical action. Breaking this rule, Xeno proposes an altered, alien reality in which this relationship is subverted, making it difficult to understand which one of the two media is the cause or the consequence of the other—and even if an action-reaction link still occurs. But the meaning of 'xeno' refers not only to this. It is also related to the rapidly, continuously mutating multimedia content as a whole, which does not find any existing, known meaning.

CO-V
Miriam Akkermann

COVID-19 has been on of the most dominating topics of our daily life over the last two years. The piece illustrates this in two dimensions, on an aesthetic interpretation as well as on a conceptual level.
The sound and the composition's form is completely based on the daily Covid-data in Germany (infection numbers, infection rate, number of deaths, numbers of first and second vaccination) from 28.1.2020 to 20.7.2021.

edgewater
John Gibson

edgewater is the result of a trip to the beach at dawn to record the surf, uninterrupted by the sound of people or airplanes. At the beach, you can see the ocean for miles and, at the same time, notice the tiny creatures burrowing in the sand nearby. You can hear the roar of waves crashing far away and also the delicate rippling of currents running around your feet. Placing a camera a few inches above the incoming tide points up these differences in visible and audible

scale. On a lazy beach, the imaginary can take over in your daydreams. In this piece, passages of natural soundscape intermingle with imaginary visions of the sand, water, and sound. The continuum between swirling ocean noise and razor-sharp pitch serves as an expressive resource in the imaginary passages.

Estuaries 4
Brett Battey

"Estuaries 4" is the fourth and final part of my "Estuaries" audio-visual series, which can be viewed as a series of standalone works or ultimately as one large, multi-movement work. "Estuaries 4" explores contrasts between intense and frenetic textures and a gentler poetics, with the latter expressed in part through visualisation the mathematical Rosenbrock function. The "Estuaries" series involves visualizing Nelder-Mead optimization, a process used by mathematicians to find solutions to complex, multi-variable problems that cannot be addressed by solving equations. We see the results of many such routines searching for the brightest points in a source image. The music was created with my Nodewebba software, which interlinks pattern generators to create complex emergent behaviours.

Inner Guerrilla
Alejandro Albornoz

Stereo acousmatic piece composed between March and May 2021. Inspired by the painting "Hagámonos la guerrilla interior para parir un hombre nuevo" (1970) by Chilean surrealist Roberto Matta (1911-2002) The title can be translated as "Let's stage an inner guerrilla warfare and give birth to a new man", pointing out the urgency for a personal change as a first action leading to the construction of a better world. In this work, I have abandoned the use of voice for a moment in order to concentrate in the colour of instrumental sounds and some daily life physical objects, searching in this way for gestures and layers with different spectral densities. The sound colour and flux address in a subjective and free manner tensions and spiritual struggles. The main source materials are recordings kindly provided by the ensamble f(r)actura, a contemporary music instrumental group based in Valparaíso, Chile: sellomodular.cl/ensamble-fractura/

Concert 17
July 6, 16:10-17:10

Blue Sky Catastrophe
Seth Shafer, Martin Herman

Blue Sky Catastrophe for piano, live computer processing, and spatial sound, is based on performer-driven generative musical processes. Musical phrases are algorithmically generated live by the computer and the performer is asked to sight read them. The computer then assesses the performance and generates the next phrase of music for the pianist – either more or less difficult based on the pianist's performance. The pianist is asked to read the music accurately while also being given latitude to influence the computer's musical decisions and pace. Therefore, the score of the work is entirely performer-driven, different in every performance. The computer is set up to react not only to accuracy but also to aspects of the playing that will control live generated electronics such as harmonic attractors and spatialization. The performer and computer are engaged in a feedback loop that explores degrees of stability, periodicity, non-periodicity, mirco-tuning, and quirky, chaotic potential.

Channel Zero
Juan Carlos Vasquez

"Channel Zero" is one of the ways Jean Baudrillard refers to life in the suburbs of the United States in his book "America", with a special emphasis on "the proliferation of technical gadgets inside the house, beneath it, around it, like drips in an intensive care ward". This fixed-media piece was made under lockdown using the SOMA Ether, a device that perceives and records the surprisingly diverse electromagnetic landscape produced by electronic components in a regular American house.
Throughout the piece, the electromagnetic fields are occasionally blended with field recordings, portraying a small window into the real world.

BitVox
Orestis Karamanlis, Giorgos Gargalas

BitVox is a work for beatboxer and live electronics running in the SuperCollider language. It makes use of audio event analysis and algorithmic beat manipulation in an effort to create a unified soundworld between the human beatboxer and his mechanical counterpart. It utilises a custom built SuperCollider class allowing the organisation of processes and musical material in bundles and their execution in sequential cues.

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Concert 18
July 6, 22:30-00:00

Biphase
Dave Payling, James Dooley

Biphase is a collaboration bringing together the audio and visual live performance systems developed by each author. The structured improvisation explores the sculpting, modulating and juxtaposing primitive audio tones and visual geometries to create a hypnotic audiovisual experience.
Audio is generated by a custom polyphonic FM synthesiser created with Faust, and controlled by an interface created with Pure Data and Open Stage Control. The interface allows sounds to be sculpted and sequenced intuitively and quickly during the live performance without the use of presets.
Visuals are generated by an instrument coded in TouchDesigner, using repeated and transformed geometric primitives that combine to create larger complex abstract structures. Performance controls permit the artist to interpret intuitively and freely respond to the unfolding music performance, incorporating both reactive and performative elements to create expressive visual textures that harmonise with the music.

Bláth Bán
Jonathan Nangle

screenBashing
Magno Caliman

screenBashing deals with impossibilities and limits. Code is written in real time - using C and SuperCollider - in such a way as to give the performer limited control over the parameters of both sound and video synthesis.
The superposition of immutable layers (of both sound and video animations) is treated and embraced as both a consequence of the restrains the system enforces on the performer, but also as a sub-product of a mode of interaction, a power play between performer and machine, where both sides find themselves in a pursuit to enforce their will on one another.

Shazam Walks and Voice Notes
Jake Williams

Concert 18.5
July 7, 11:20-12:50

In the Liminal Space
Nicole Carroll

In the Liminal Space (2019/21) is a multi-channel electroacoustic piece for live spatialization utilizing the composer's bespoke hardware controller for spatialization (Byzantine) in conjunction with custom software written in Max/MSP. The Byzantine controller is a tabletop tactile interface utilizing capacitive touch that allows the performer to navigate various spatialization systems in Max/MSP during performance. The custom system allows for spatialization across 2-16 channels. The sound sources are various analog synthesizers from the MESS (Melbourne Electronic Sound Studio) collection, including the GRP A8, Serge '75 Paperface, and Transaudio Procase 6 synthesizers. The piece is improvised with fixed stems in addition to samples chosen by chance procedures during performance. The chance procedures are driven by NASA ephemeris data. The analog synthesizers' short-circuit artifacts are highlighted to craft a sound world that crosses acousmatic and noise music genres.

ARCHITECTURE DREAMS MUSIC ~ Music based on Schröder House ~
Kiyoshi FURUKAWA, Haruyuki FUJII, Takayuki HAMANO

A research unit (a composer, an architect, and a media architect) started the project "ARCHITECTURE DREAMS MUSIC" in 2019. Since then, this project has produced several audio-visual compositions. We will present one of the works from this project, "Music based on Schröder House". We realize that the relationship between music and architecture is not just a matter of musical/architectural structure or musical/architectural material. Rather, utilizing the researches of cognitive science, an exploration of how humans experience and recognize music and architecture. We intend to use our program for mapping the conceptual principles of architecture to those of music to further our research and creation. By using this program to simultaneously auto-generate spatial sequences of architecture and musical works, we hope to express the commonality in the deep structure of the different modalities of architecture and music.

Overlapping Strings
Fang Wan

Overlapping Strings is a composition for Gametrak controller, Symbolic Sound Kyma, and custom software created in Max. By performatively operating the Gametrak as an interface, I triggered and controlled various musical parameters in real time. The sound materials upon this composition was based include recordings of double bass, human voice, and bells. Because the

strings of the Gametrak could be extended up to ten feet in length, a sizeable performance area was provided that encouraged full-body movements in the performance of the music.

Concert 19
July 7, 13:30-14:30

Metamorphosis II
Annkathrin Pöpel, Peter Färber, Roxane Kalt

This transdisciplinary piece uses a new instrument, a kinetic sound sculpture "Sounding Influencer" with swinging pendulums with moving speakers. Four different sine tones sound from the four pendulums. Due to the Doppler effect created by the pendulum movement, the sine tones oscillate and permanently change their pitch to a small extent for the listener. Furthermore, a dancer is added, who wears a sensor on her body. The movements of the dancer are detected by this sensor and the information changes the pitches of the pendulums to a variable extent depending on the progress of the composition. the dancer's movements generate the music, or the harmonic changes of the four-notes of the swinging pendulums at that moment. The acoustic level is shaped by the movement level. The composition is made with Max/MSP. From the composer's point of view, this is a special form of human-machine interaction in which the human movement causes the acoustic output of the machine.

Pisces: The Hand of Time
David Dow

Pisces: The Hand of Time is a recording of a live performance. A soundtrack was created to provide a musical background for the live performance synthesis to take place. The background features water and ocean wave samples combined with vector wave sequencing, granular sample manipulations and vocoder vocal effects. The live performance is entirely interactive as all the synthesizers are analog without presets. Performance and sound design proceeds on a Moog Matriarch Semi-Modular synthesizer, a Behringer Neutron Semi-Modular module, a Minimoog synthesizer and a Cat SRM synthesizer. The paraphonic ability of Moog Matriarch is used to provide harmony for the Boss VE-2 Harmonist harmonizer provides a counterpoint to the vocoder harmonies on the soundtrack. The goal is to create a sound montage that weaves the live performance with the soundtrack background. This composition can be presented as an Acousmatic piece or a live performance.

I'm A Naga from Outer Space
Ken Paoli

I'm A Naga from Outer Space combines spoken word, video and computer-generated audio. This hopeful message comes from the astronaut protagonist who views earth from space and takes corporeal form to remind us to focus beyond the physical and material aspects of our world. The video canvas is an eclectic assortment of scenes intended to provide visual reinforcement of the spoken word. The audio was generated in a graphic programming environment using sieves to generate the melodic and rhythmic material. That material was passed through a virtual MIDI interface into a DAW for editing, processing and recording. The vocal tracks were processed with pitch morphing and pitch shifting. The resultant soundtrack was mastered and joined to the video in a video editing application.

Concert 20
July 7, 14:40-15:40

A Portrait of Bessie Coleman, Harriet Quimby, Mary Lady Heath, And Raymonde De Laroche
Rodney Waschka II

A Portrait of Bessie Coleman, Harriet Quimby, Mary Lady Heath, And Raymonde De Laroche remembers women who were aviation pioneers. Raymonde De Laroche (Elise Raymonde Deroche) of France -- first woman in the world to receive an aeroplane pilot's license (1910). She set women's altitude records. Death: aviation accident, 1919. Harriet Quimby -- first woman in the USA, second woman in the world, to earn a pilot's license; first woman to fly solo across the English Channel. Death: aviation accident, 1912. Bessie Coleman, the daughter of an African American laundry woman and an African American/Native American farm laborer, learned to fly in France (1920), first African-American woman to earn a pilot's license. Death: aviation accident,1926. Mary Lady Heath (Sophie Catherine Theresa Mary Peirce-Evans), born in Ireland, first woman to hold a commercial pilot's license in Britain, first person to fly across Africa. Death: a fall (1939), perhaps because of injuries from an Ohio plane crash.

Unlocking the Keys
Mikel Kuehn

Unlocking the Keys (2021) is a fixed media Ambisonic work that explores three dimensional sonic space. The title serves as a metaphor for searching out (i.e., "unlocking") the potential of sounds created from recorded piano sources, which start out abstract in nature and fully reveal themselves in the middle of the piece. While the ideal listening experience for this piece is a periphonic sound system (a three dimensional configuration of speakers such as "dome" or 8-channel "cube"), the version provided here (stereo) preserves all of the musical material, mapping it down organically to a two dimensional listening space.

Banlieue cuivrée
Nicola Fumo Frattegiani

Banlieue cuivrée. Suburb brass. Crumbled concrete. The matter fragmentation, its chaos and energy, counterpoised to its implacable, pure and monolithic immobility. The cement shifted through the metal and the leather. The expression "banlieue cuivrée" comes from the will to represent the life of a cement magma with its morphed and dynamics fluctuations, its slackening and but also with its static poses sublimated in the urban architectonic context. Hence concrete. A specific matter. A "fact" surrounding our daily space. A rigid corporeality but that comes in liquid form. Concrete. Suburb. Banlieue. The colour grey. The composition has been built using exclusively concrete samples of metallophones and membranophones instruments. Brass is the dominant metal colour in the musical context, hence the second French term cuivrée. To this light a copper mass, alternating its breath in different ontological sound statuses, is the resulting terminological syntaxes.

translucent connection
Steve Ashby

Translucent connection explores the passage of time and space as perceived by an entity hurtling through the ether. Mechanisms and imagination converse in a collision of forces exerted upon the traveler as environmental sources have vanished.

Translucent connection began as an interpretation of data collected from a video feedback loop to synthesize sound. Through stochastic methods, these elements move about the space in real-time. The morphing texture of the piece explores perceived motion as an object travels further away from its place of origin.

Coding Coppers
Serkan Sevilgen

Live coding is usually associated with computer-based sound generation. Algorithmic composition method for acoustic instruments yield music notation. In this piece I try to explore the area of live coding for acoustic objects. Live coding with Python language acts as an interface to control the servo motors which are attached to an Arduino board. A microphone picks the sound and a Supercollider-based live coding interface manipulates the sounds gently. The piece is inspired by the work of Andre Valle. However the output is aimed at generating more limited sets of sounds and not excessive manipulation respecting the silent moments.

Wallpaper
Jonathan Higgins

During lockdowns and the resultant isolation we have looked to the internet to replace in person communication. However, those who lack access to the internet are excluded from these virtual social spaces. Wallpaper utilises words from those isolating without access to the internet. In an online recording session, their words were read back verbatim, sung and manipulated via the imperfections of the internet until digital noise overtook all meaning. These recordings were then arranged to create Wallpaper. Wallpaper exists in two versions: the digital version presented here and a hotline available on +44 330 818 0351.

Concert 21
July 7, 16:10-17:10

Earth Elements
Ioannis Andriotis, Dr. Elizabeth Avery, Joel Burcham

Earth Elements (2021) is a piece for a pianist, guitarist/vocalist, and electronics. As the title suggests, Earth Elements touches upon environmental concerns and the relationship with our planet. This piece purposely utilizes mainstream music techniques (cinematic, pop etc.) as a means of creating a soundscape familiar to most people, and thus hopefully allow a wider variety of listeners to understand and follow the musical ideas. The elements of Water and Air are fused into a single continuous movement creating an ethereal soundscape that utilizes the instruments in a non-traditional manner ("every sound is possible"). The third movement (Earth) other than rhythm by traditional means, it also expands on the topic of culture and human interaction. Fire is presented as the last movement of the piece and it is placed in the context of a modern city-soundscape.

Prolation Study in Metal
Peter Van Zandt Lane

A prolation canon of wind chimes serves as a ritornello for a larger exploration of motion and immersion through metallic samples (also including samples of waterphone, thundersheets, singing bowls, and an unusual iron spiral-staircase from my parent's home in rural Vermont). In composing this piece, I explored techniques I would describe as "analog spatial sampling"; much

of the 3D spatial elements were achieved through soundfield recordings –setting up objects around/above/below a soundfield mic, then improvising– rather than the more conventional approach of panning/mixing non-environmental sampled sounds into the soundfield in the studio.

MMM #1 - Festival Mix
Marcin Pączkowski

In an attempt to escape the reality of this past year, I can't help but be amazed by the fact that we as humans can now listen to sounds recorded on another planet. MMM #1, uses solely sound samples sent back from Mars by NASA's Perseverance rover. These sounds were edited and transformed into larger structures with a custom live-controlled computer music system, which then became the basis for the final electroacoustic work.

Innermost
Natasha Barrett

'Innermost' is a collaboration between digital video artist [anonymised] and composer [anonymised]. The original version of the work was in high resolution 3D ambisonics and 3D video, and since then has also produced in 2D video with 3D sound, and as a solo 3D ambisonics concert work. For the ICMC the work can be performed as a music only concert or in one of its video formats. Innermost is about inner individuality finding outward expression and commonality. Our inner-state is often reflected in our posture and the way we move - or our gait. Innermost reveals and develops this expression in 3D movement and morphology. The materials stem from two mass Norwegian celebrations devoid of political anxiety or violence. Yet a darker tone underlies the work: the materials are created by applying the latest processing techniques for image and sound recognition already in use for population surveillance, facial tracking and gesture-recognition.

Concert 22: Crash Ensemble
July 7, 20:00-21:00

Praeludium
Tomás Koljatic S.

Praeludium is a work for amplified violin and electronics. It is inspired by the genre of the "prelude", which, under many different denominations, emerged in the Renaissance, as a relatively short piece of instrumental music, either improvised or improvisatory in character, that set the mood and the mode of a multi-movement work. In the 19th and 20th century, it became fashionable to write preludes in cycles, or, as the present work, as a stand-alone work. Praeludium explores the timbral and harmonic richness of the open g-string of the violin, and its natural harmonics.
The electronic part, conceived in eight channels, contains both fixed sounds and real-time processing. The former consist of textures made with the technique called "corpus-based synthesis". A large number of samples of violin sounds (the pitches of which correspond to the natural harmonics of the open g-string) are organized in a descriptor space according to different criteria (pitch, loudness, harmonicity, etc.), and then triggered according to its proximity to a predetermined path. The sonority of the piece, which forgoes synthetic sounds in favor of a sort of instrumental "fresco", wanders from unmeasured tremolos to long held tones, from the lowest to the highest range of the instrument, from soft, muted sounds to more brilliant and lush sonorities. At the same time, the amplified violin sound is processed in real-time (for example,

through granular synthesis, delays, spatialization,…), striving for a perfect blend between the live instrument and the unfolding electronics.
This work was funded by the Office for the Arts and Culture of the Vice-Presidency of Research, Pontificia Universidad Católica de Chile.

intuitive access
Se-Lien Chuang, Andreas Weixler

intuitive access by Se-Lien Chuang & Andreas Weixler
machine improvisation for R-IoT playing ball, voice, mouth organ, electric guitar with audiovisual realtime processing and open ensemble.
Instrumental sounds interact with audio and video processing in a very intuitive controlling set up.
The improvisation is completed by an audio realtime signal processing by fft freeze reverb, classic ring modulation as well as spectral delay together with a multichannel granular synthesis by a computer performer in mutual inducement with the instrumental player.
The ball gives rather grip than control to the sound processing in the sense of a modern séance.
A R-IoT sensor inside the ball is sending OSC data to a Mac Book with Max.
In a mutual influence instrumental sound, electronic representation of audio and interactive visuals blend into a unique piece of art slightly out of control but also very much in artistic an intuitive manner of access.

Onsen: Hot Springs
Mara Helmuth

Onsen: Hot Springs, for vibraphone and stereo fixed media, was inspired in part by the luminous sound of the vibraphone and also by audio samples of the percussionist striking several metal scuptures found on his campus. The most intriguing of these sounds came from structures with tentacle and metal hole shapes. Families of rhythmic sounds with rich timbres were generated with digital signal processing (granular synthesis, spectral editing, and delays) applied to the samples, for the electronic part. The energy and form of the piece were also inspired by a visit to Shoya-onsen, the hot springs south of Tokyo where I experienced the bubbling, invigorating warmth of the natural mineral springs. The piece was commissioned by and written for a percussionist.

Weip
Iván Ferrer-Orozco

Weip- "to turn, vacillate, tremble ecstatically, move quickly to and fro. Weip is the Proto-Indo-Eeuropean etymology of the latin word vibrare, root of vibrate".
Sound is matter in motion. We perceive vibrating bodies as sound.
Vibration:
(n) the act of vibrating
(n) vibration a distinctive emotional aura experienced instinctively "that place gave me bad vibrations", "it gave me a nostalgic vibe"
(n) vibration (physics) a regular periodic variation in value about a mean
(n) vibration a shaky motion "the shaking of his fingers as he lit his pipe"
Weip is based on the sole note of a recorded vibratone and its sound spectrum. The piece is an elaboration of the ideas of vibration, vacillation, trembling, oscillation and our perception of this motion. The EJ or electronic media performer acts as second performer with the same

responsibility than the percussionist and with the aim of to integrate both elements, acoustic and electroacoustic sounds, with musical sense.

Concert 23
July 7, 21:15-22:00

Fracture
Dan VanHassel, Matt Sharrock

"Fracture" is a two-part counterpoint between noise and pitch. In it, the vibraphone's sonic palette is expanded by placing small percussion instruments directly on the instrument. The vibraphone notes form a calm, floating, underlying melody that continually expands and contracts, yet is emotionally stable and consistent. In contrast, the percussive layer is sharp, rhythmic, and incisive; over time becoming ever more frenetic and anxious. These two layers weave in and out of each other, each developing in parallel with the other, yet never reaching any kind of synthesis or unity.
The electronics act as an extension of both parts. The pitched part is extended through rhythmic loops, building from the pulsing of the vibraphone motor. The percussive notes are extended through an array of short samples, taken from a variety of recordings, with each sample corresponding to a specific percussion pattern or rhythm.

Vidi Aquam
Kyle Shaw

Vidi Aquam ("I saw water"), an antiphon in Christian liturgy using imagery from the book of Ezekiel. This piece reimagines the submersion in water alluded to as a surround sound experience exploring the acoustical properties of water.

Shadow of the Hawk
David Z. Durant
Vibraphone: Patti Cudd

Shadow of the Hawk is written for vibraphone and fixed Audio and was completed in early 2018. The live vibraphone part is written in counterpoint to two other electronically produced instruments. These are a marimba type instrument, built primarily of a sample of a PVC pipe being struck, and a percussion section built from many drum samples. I have also incorporated sounds that I have built variously from a Moog synthesizer, an NED Synclavier, and the software program CSound. The vibraphone part represents the hawk, which is defined and moves linearly, while the shadow is all the other elements in the piece which are sometimes clear, sometimes diffused, but always moving and changing.

Concert 24
July 8, 14:00-15:00

Zum Mülleimer... für Performer, Licht und Live-Elektronik
Reika Hattori

This work was composed for one performer, lighting, and live electronics. The title of the work, "Zum Mülleimer ...(to Trash Box...)" is based on the thoughts of the composer himself (Yuka Hattori) on the works composed in the past. She is inspired by her daily struggles that she cannot love her work, which she composed. Therefore, it is important that the composer himself plays

this piece. She also tried to focus on sensitive sounds and explore the changes in sound and sound effects by playing paper like a musical instrument. And as a visual effect, lighting also plays a big role in her work. She thought that it would be linked to live performances and tape music, and could visually convey the texture and temperature of the music. The important point in this work will be how concretely the concept of the work can be expressed using the medium of "paper", which can be said to be an extremely simple material, physical expression, and lighting.

Ideological Distortion
Berk Yağlı

Ideological Distortion is a piece which explores the dark side of today's media, dilution of ideologies, and constant bombardment of confusion. It invites the listener into reflecting on the issues and feel the horror and hate that is constantly imposed on society whether we individuals are lucid about it or not.

Coacervate
Rodney DuPlessis

Certain mixtures of polyelectrolytes can spontaneously form dense liquid droplets (called coacervates) suspended in water (dilute phase). These liquid droplets are often filled with complex molecules, proteins, polymers, and nucleic acids. Coacervate formation has been suggested as a possible mechanism through which the first simple cells formed on earth (Abiogenesis). In composing Coacervate, I worked closely with violinist and chemical engineer [redacted] to create a sonic narrative from this chemistry. Distinct musical motives are inserted into dilute textures where they compartmentalize, chain together like charged polymers, and erupt into the beginnings of life.

Concert 25
July 8, 15:10-16:10

Craeria
Mattia Parisse, Constantin Jopeck

CRAERIA (Constantin Jopeck - video; Mattia Parisse - audio)
video filmed in fablab (macroscopic views on digital milling machine, and photogrammetries) - alternative photogrammetry montages, virtual place of Constantin research, guest texts (Pierre Notte, Ursula Le Guin, Louise Michel), digital milling machine chalk sculptures, printed flags, digital embroidery.
Archeology of a virtual place, place at different time, on a chalk ground, traces of time still visible, place-board, writing ground, the chalk heart = stick to write. Photogrammetry will allow to establish perimeters - space, order, mix - to bring back to our view the immeasurable dimensions of a porous horizon at the same time unknown and familiar. The sound emerges from the rest revealing the material component of images, alternating with digital sound.
Digital textile machine, digital time machine.. all landscapes (past, future, real, fiction) are linked together.

". . . am I hearing voices within the voice?"
Dimitri Papageorgiou

". . . am I hearing voices within the voice?" was composed in more voices and vocal manifestations from samples of principally non-verbal vocalizations with my voice, reconstructed by fragmenting, overlaying and filtering the vocal timbres, to accommodate my own requirements
During the composition process, I was more interested into the subleties of spoken sound when speech is deprived of meaning, the subtle pauses, speech cadences, evolving dynamics, the stumbles, the stammers, the um's, and ah's, the speeding up and slowing down.

another one
Michael Boyd

another one is one of three related works that were primarily created during the early months of the 2020 pandemic (the other two are another of and another one of). All three pieces use noises – both continuous and discrete – from my home such as my dishwasher, basement dehumidifier, and garage door. The use of sounds from my house resonated with my experience – and that of many others – during the pandemic when long stretches of time at home were punctuated only by outdoor exercise and weekly trips to the grocery store. In total all three pieces are comprised of sixteen layers of continuous noise that are constantly and randomly varying in volume, along with eight discrete noise events that occur at random points throughout. This particular composition is for fixed media or live electronics and eight minutes in length; another of is for fixed media and two minutes in duration; and another one of is an ongoing live electronics installation of that lasts for at least 45 minutes.

Don't Block the Flöte, for Flute and Alto Recorder Automaton
Karl F. Gerber, Karina Erhard

The computer-controlled automaton experimentally plays an alto recorder. It offers fingerings with variably opened tone holes. Likewise, the labium can be covered steplessly. The blowing pressure is influenced by various measures and vibrato up to a flutter tongue is created. At the premiere, a further glissando was achieved by controlled admixture of helium gas!
When composing, the sound of the instrument is first evaluated with control data. In this way 19 controller tracks are created. Finally, the selected patterns are composed into a MIDI score. For the machine, this is the music to be performed.
The flute part is largely improvised, but prepared on the basis of an orienting play-along score. This is generated graphically from the audio co-playing tape using Melodyne and contains playing instructions for the flute.
The video shows a montage of footage from performances and close-ups, with the audio recording of the premiere, including Helium.

Klaxon
Andrea Veneri

in the chaos of every day, in the mechanical nature of life, in the progress of science, in the haste, in the traffic, in interpersonal relationships, in the pressures of society; there remains a sound that most of all helps to externalize the suppression of the multitudes of daily inputs that make us feel choke: klaxon.

Hesitation
Gintas K (Gintas Kraptavičius)

From neurological point of view most pleasure from music we get it is when brain expectation is broken, when brain is surprised. That brains can get a pleasure as much as possible, a piece „hesitation" exploring sound control trying to break brain expectations.
"Hesitation" is live performed piece made using my own build instrument consists from computer, Plogue Bidule software & midi controller assigned to VST plugins.

Concert 26
July 8, 16:40-17:40

Bumps on a Stucco Wall
Youngjae Cho

visual art sometimes inspires me the imagination to compose something. I imagined how I could connect the characteristics of what I had looked for something with music. While I was working on the piece, I remembered a few paintings. In addition, another idea came from contemplation in our daily life. In this context, I looked at various objects with visual impressions, such as the fine / coarse brush strokes, rough textures, more dense / less dense mass, linearity, especially bumps on a stucco wall in daily life. I associated with sound materials like cracking sounds, linear movement up and down, short mixed materials, and pulses. I wanted to express complex spatial dimensions.

Viz (2020), for electronics
Antonio Carvallo

Viz is a four channels acousmatic composition and is constructed from vocal sounds modified through analysis and re-synthesis, filters and AM synthesis. The syntactic structures aim to constitute a unitary form, presenting multiple sounds that gradually transform their timbres and internal articulation.

Atmo-
Bihe Wen

Atmo- (2020, Dur. 9:28") was composed at the Sonic Arts Research Centre, the Queen's University Belfast. The sound materials used in Atmo- are mainly derived from air tools, air balloons, vocal sound, and soundscapes/ambiances. These source materials produced by different air-based mechanisms have certain similarities in terms of the intrinsic qualities of timbre and associate with the physical world and life experience, exploring the sonic relationship between the inner and outer world.

Concert 27
July 8, 17:50-18:50

Song of Xolotl
Bradley Fletcher

Song of Xolotl came about when my uncle recently gifted me a dog shaped ocarina from Mexico. He had it for many years, and during my childhood I played on it when I got the chance. After receiving it, I instantly knew I wanted to write a piece using it. I decided to compose an electronic work, as I was interested in the paradox of being limited by the sounds I could play on a four note ocarina, but being unlimited by the possibilities of electronic manipulation.

I named the piece Song of Xolotl, as looking at the design made me think of the Aztec god of death. In this piece I sought to portray Xolotl by expressing the chaos of emotions associated with death. The piece weaves between levels of density, all revolving around an initial improvised melody, which I have named the "song of mourning".

Resonance II
Wayne DeFehr

The present work interprets the theme of the Standing Wave with reference to human interactivity, Since this phenomena occurs in nature, as forms in the River Shannon in Limerick City, it makes sense that this should occur as well among people, and characterize social interaction. One might speak of someone being on the same wavelength, or of something that was said as resonating. What are these static yet dynamic waves that connect people to those of similar mind. Indeed, the earliest uses of the word "resonance" referred to the sonic, in the echoing of a wave of a particular amplitude. And as my piece represents, this echoing of sound occurs across and throughout society, inclusive of race, gender, or age and is the sonic current that keeps everyone in place yet moving at the same time. An immense and beautiful dance.

Spread for piano and electronics
Brad Robin

Spread culminates a long process of compositional exploration for me. Much of the material has been created through algorithms guided by intuition to meet intuited aesthetic goals in the compositional process, specifically the vertical expansion or compression of harmonic and rhythmic materials. The challenge has been to create an organic flow, one that walks a line between the outpouring of musical texture and expression of melodic material. Harnessing tension, release, and subtle, nuanced changes of emotional tones, Spread represents the first movement in a series of envisioned works manipulating harmonic material in similar ways.

Action-Reaction
Chi Wang

In classical mechanics, Newton's third law of motion states that for every action, there is an equal and opposite reaction. The action and reaction form a single interaction, they are simultaneous and neither force exists without the other. The GameTrak's retractable tethers interact with the performer's push, pull, release and free movements, causing the tethers deviating from and aligning with the rest state. The performer sometimes makes subtle and sparse push movements while sometimes pulls and drags the tethers dramatically. However, after releasing the tethers, the tethers are retracted back to the rest state, creating predictable yet unique realignment path each time. The data measured from the physical movements are mapped to various parameters in the sound producing algorithms, creating musical expressions that are both superimposed and nuanced.

husk #2
Zach Thomas

husk (#2) is a study of sound dissection and mutation, building on the trajectory of the original work in the series. The piece begins with the sound of a bell which is continually transformed throughout the duration of the work. Samples from various percussion instruments, animals, and environmental field recordings are morphed into another using a variety of processing techniques.

Glitchy Ec(H)oSystems
Scott L. Miller, Jane Rigler

Listening consciously involves consistent sending and receiving. It is a two way interaction in which partners are both propelling and collecting sounds (audible, perceived, imagined, etc.). This work relies on both duo partners to humbly dispatch their sounds to the other as "gifts" or sonic codes and graciously greet the sonic ricochet with new ears. Surprise becomes the fundamental overarching outcome: as each of the performers send their sounds to the other, what emerges is an entirely regenerated answer, one that elegantly models the duo's essence yet astonishes the individuals. In this work, one performer sends electronically manipulated instrumental (i.e., flute and vocal) sounds to the other performer (using the Kyma program) who collects and allows the system to "react". The outcome is a hybrid of all sounds, combined and transformed. Using the PD program Netty-McNetface, this remote duo has designed a system which imitates a real-time, in-person performance practice within a telematic system. The work sample demonstrates the musical diversity of a live performance. The corporeality of their own personal practice is converted into the new physicality of this space. There is no "virtual" because with no perceived latency, they are playing literally together, simultaneously, collaboratively sound-designing a new musical echo-system that lives within the constant flux of conscious listening: sending, receiving...and becoming.

Concert 28: Crash Ensemble
July 8, 20:00-21:00

Singularity
João Pedro Oliveira

A singularity is a phenomenon that relates to several areas of knowledge. In cosmology, the singularity lies at the center of a black hole (resulting from a collapsing star), where matter compresses into an unimaginably small region whose density becomes infinite. Everything that passes within a certain proximity of a singularity will be inexorably attracted and can never escape this attraction. This piece operates with very heavy densities in the electronics part in opposition to the instrument. The instrument tries continually (and without success) to escape the weight and force transmitted by the electronics.

Plane of Slight Elevation
Sean Peuquet

The electronic portion of the piece alternates between algorithmically generated canons of sampled instrumental, pitched sound materials and soundscape recordings of interior airport spaces from across the world. Written during a time of isolation, where travel feels both nostalgic and also more privileged than ever— the piece confronts the minimal difference between the imagined and the real. The acoustic ensemble is positioned to mediate such a gap from a position of incomplete knowledge—of locality, pitch alignment, and performative expression. The incompleteness of the fixed materials draws upon the musical sensibilities, intuitions, and feelings of each instrumentalist that may arise at the intersection of performative listening (to the electronic part and each other) and reflective voicing (instrumentally, through microtonal pitch-matching and open articulation and dynamics).

these old roots
Christopher Chandler

these old roots is a work for bass drum and fixed media that features a variety of closely mic'd percussion instruments. Both the source material for the electronics and the percussionist's live performance are primarily driven by activating the bass drum with various implements (e.g., fingertips, fingernails, wooden mallets, hair brushes, etc.) and physical gestures or techniques (e.g., striking, quick scrapes, circular motions, granular tremoli, etc.). I created the electronics using both standard sequencing methods in a digital audio workstation and generative sequencing methods using custom software developed in Max. This software became a sort of collaborative partner; it created variation upon variation of these source materials, ultimately producing large multichannel audio files that I could further edit and develop. The compositional process became a lot like sculpting or pruning an overgrown tree, where a hidden structure is gradually uncovered and revealed over time.

Concert 29
July 8, 21:15-22:00

Breathing Banner
Michael Blandino

Breathing Banner (2021) draws from a fixed sound source using granular synthesis and is performed with an array of continuous control sensors.

The Song of the Earth
Philip Blackburn, Patti Cudd

This is the field where the earth's core breaks surface, where energetic forces conspire. Where the churn and eddies become waves and a torrent. Where rhythm and flow are born. Where geopower creates emergent music.
The Song of the Earth is a study in transmogrification — the surprising or magical transformation of something — in this case a recording of one of my backyard windharps (think fishing line attached to a resonator) combined with a simultaneous instrumental realization of it. One weather input; two audio outs. The conversion of fluctuating wind energy to sound, a double-exposure snapshot of an infinite duration, from ambient installation to fixed composition, from just intonation to equal temperament, from Aeolian drones to extracted rhythms, from clouds to grids, from effortlessly generated material to practiced human virtuosity; Melody occupies a place with one ear on the concert stage and the other out of doors

Duo for Tamtam and Computer
Cort Lippe, Dr. Douglas Nottingham

The computer tracks parameters of the performance as to when the tamtam is struck, how loud it is struck, and the timbre of each strike. This information, from larger scale rhythmic and phrase tracking down to micro-level frequency band information, is used to continuously influence and manipulate the computer output by directly affecting synthesis and compositional algorithms in real-time, giving the performer an active role in shaping the computer part. Synthesis algorithms focus on a variety of FFT-based techniques, including analysis/resynthesis, filtering, reordering, delay, feedback, and spatialization controlled by LFOs, along with time-domain techniques of various types of synthesis, sample playback, etc.

Concert 30
July 9, 14:00-15:00

Exteriores Spatium
Timothy Moyers Jr.

Exteriores Spatium explores the concepts of heaven and hell, the soul, the origins of the earth, and space travel through the eyes of children... and with modular synthesis.

Farewell Fairlight
Dr Manuella Blackburn

This composition exclusively makes use of sounds sourced from the Fairlight CMI. These sounds include the factory pre-recorded samples which came loaded on 8-inch floppy diskettes on the Fairlight CMI series II from its manufacturer in 1982.
Other sounds are derived from the mechanics and internal workings of the Fairlight, for example, the turn key (power switch), power up and power down sounds, the innovative light-pen making contact with the monitor screen, the drop down panel, disks loading/reading and the unmistakably loud fan noise emanating from the instrument. These mechanical sounds were sourced from the Fairlight CMI IIx housed in the Clockhouse at Keele University, UK where I worked between 2019-2021.
The work fundamentally explores a historically important and treasured sound library that defined the sound of 80s pop. The legendary bottle smash, ORCH 2, and Trevor Horn stabs are just some of these well known Fairlight sounds that now feature in new configurations.

SoundPrism 9: At Home
Douglas Scott

SoundPrism 9 was my musical response to the first 4 months of the COVID lockdown and is part of an ongoing set of compositions aimed at deep exploration of the colors and textures inherent in specific sets of source material. In this work, that set included digital recordings of familiar objects found in my kitchen, dining room, and garage. These were distorted and extended using a variety of techniques, and moved around within a synthetic acoustic space. All processing was done using the RTcmix software package and the final mix was created using Logic Pro.

Concert 31
July 9, 15:10-16:10

Break Out
Verena Hentschel

"Break Out" is an electroacoustic composition for 8 channels.
Granular soundscapes are linked with broken and high-energy beats that shape the mystical character of this piece. A fusion of rhythm and noise, a reorganization of structures in sound. Spatial and physical experience.

Blowout (Expanded)
Michael Pounds

"Blowout (expanded)" began its life as a one-minute composition created for a birthday celebration. This expanded version of the piece develops ideas from the original composition along with new material to create a much longer piece. Rather than a celebration of a birthday, this newer piece was considered a celebration of the composer's marriage and the completion of his doctoral degree. The piece playfully manipulates a variety of breath-related sounds created using party horns, whistles, balloons and other objects.

NeOnSound
Giulia Regini

NeOnSound is an audiovisual composition inspired by Dan Flavin's light installations. This work comes from my personal interest about the relationship between sound and color. The video and audio processing are based on the thought expressed by this minimalist artist in reference to his works: It is what it is and it ain't nothing else. The goal is to convey the emotions that the works communicate to the observer who moves through the rooms of an exhibition. NeOnSound wants to communicate the emotionality of the experience: which goes to the viewer who stands in front of the artwork and who suffers its direct fascination, without conditioning. Dan Flavin's installations are the starting point for the inspiration and the protagonists of the video.

Tongue Drum
David Berezan

Tongue Drum explores the sounds of a steel tongue drum, a pitched percussion instrument.

A Now Unknown
Anıl Çamcı

Composed over the course of two years in forty sessions with a modular synthesizer, this work is an exercise in sonic storytelling through the artist's tactile interactions with an evolving instrument. As a result, the work is gesturally driven by the motor functions of a performer on the micro scale, modulations of control signals on the meso scale, and the changes to the instrument itself on the macro scale. As the piece constructs a sonic reality around the listener, it reflects the physical reality within which it was created with all of its balance and turmoil. This way, A Now Unknown traverses the middle ground between the indeterminacies of the modular medium, and the undulating path that is a composer's plan. The turns of the same knob—days, months and years apart—are frozen and juxtaposed into an abundance of once present moments; a bricolage of nows that are impossible to tell when.

Concert 32
July 9, 16:40-17:40

Memento Mori
Kerry L Hagan

'Remember that you die.'
Although there are many objets d'art and musical forms arising from the macabre reminder of death, the Renaissance practice of the memento mori or vanitas still life is, perhaps, the most replete with symbolism. Common images include the obvious, such as skulls or skeletons, but

also represent other fleeting, fading themes: decaying fruit, cut flowers, recently snuffed candles (the smoke still present but the flame extinguished), hourglasses in mid-count, soap bubbles floating above a skull, spilled chalices, and so on.
In this work, the entire form derives from a near-infinite reverb of a complex, layered impulse. The impulse lasts mere 10ths of a second, but the remainder of the work is the prolonged reverberation tail, freezing the impulse in time. As the piece dies away, elements of the complex sound swell in and out of the foreground, allowing time to investigate each symbol in the still life.
A Pure Data patch generates Memento Mori in real time, which is the preferred presentation of the work. Random processes select the layers to emerge or fade throughout the course of the work. Though no element moves through space, random draws determine the fixed location of each layer at the start of the patch. Therefore, each live instantiation of the work is different than previous performances.
In the stereo version, the piece is designed for headphones.

Interlude
Hector Bravo Benard

This piece is built up of sounds produced with different household objects and processed using delays, resonators, and spectral techniques. The sounds are arranged in 3D space and rendered using a third order Ambisonics setup.

Void iv
Kari Vakeva

"Void iv" (2021) is a piece with computer-generated sounds of primarily stringed-instrument qualities. In this work I wanted to explore the sounds from different playing-techniques, and therefore I programmed a realistic physical model into my synthesis environment. I chose Cordis (Cadoz, et al., 1979) and implemented its basic functionality into my own C++ system, and that gives me the possibility to play arco/pizz., sp./st., harmonics, fingered trill, etc., like playing a real stringed instrument. I explored the use of parameter values that make the vibrating string not uniform (inhomogeneous), or applied damping the string heavily at varying points while plucking, and so on. Some of the resulting sounds are radically different from the vibrating string with a standard set of parameters. Also, I modelled the effect of the resonances of the body of the instrument, and the acoustics of the surrounding space.
The work "Void iv" is written with C++ and a software built by the author.

Concert 33
July 9, 17:50-19:20

まだら— *madara*
Akiko Hatakeyama

Being pretty, womanly, only to be stolen and buried by others for greed. We appear and disappear, come back and go away. **まだら** – madara is a lament for the dead and alive whose souls have been taken away.
まだら−Madara expresses the hardship that many women and minorities in society experience. We always face the risk of being stolen, whether our ideas, resources, sexualities, health, or lives. Medical and social discrimination and racism toward people of color became worse, or rather reinforced, during the pandemic. The threat of being attacked has stolen our freedom to live normally, too. More people recognized aggression during the pandemic, but it has always been

there. There are a number of missing indigenous women in the U.S., and there are silenced women who are in misogynistically oppressed cultures. The music and visuals of まだら −Madara together represent the current condition, and a lament and anger toward that.

Fey-led
Nikki Krumwiede

A traveler, walking home at dusk, notices a small, shadowy figure ahead of him holding a bright light. He starts after the figure, but no matter how he quickens his pace, he never seems to draw any closer. Suddenly, he finds himself at the edge of a vast chasm; one more step could have meant his death. Looking up, he sees the figure on the far side of the chasm. It laughs, then extinguishes its light and vanishes, leaving the traveler miles from home and hopelessly lost. This is a common cautionary tale of the will-o'-the-wisp, also known as a pixy-light. In English folklore, these mischievous fey spirits often take pleasure in leading travelers over cliffs or into bogs or caves. Fey-led is loosely based on this folk tale, using processed vocal and piano sounds to depict what someone might experience if they were unlucky enough to be the target of the fey's game.

Forged Effervescence
Christopher Poovey

Forged Effervescence is an exploration of synthesized metals created to showcase my modal synthesis VST Bellforge. The piece develops on the ideas of envelope shape, resonance, and inharmonic timbre through the transformation and juxtaposition of a large pool of sound sources created entirely through modal synthesis.

Paradigm Shift: Tapping into the Quantum Field.
Cecilia Suhr

Paradigm Shift is loosely inspired by a fundamental concept in quantum field theory which wrestles with the various notions of reality: visible vs. invisible, physical vs. non-physical reality, 0 and 1 reality. The music is composed with a virtual instrument called quantum oscillators whereby the different numbers of harmonics, order and frequencies produce a unique sound wave accordingly. The 3D box represents a three-dimensional world where one only lives with a limited sensory and understanding of the world shaped by the media. Therefore the person is trapped in a prison cell (as indicated by wires) blinded by the multitude of worldviews and perceptions. However, throughout the performance, the 3-d box (a person contained in a prison cell, in this case, the performer) moves and expands reacting to the live improvisational violin sound in an effort to break free from the 3-dimensional reality and takes a quantum leap to perceive the reality in a new dimension and perspective.

Heart Sutra
Dr. Jiayue Cecilia Wu
Visuals: Rebecca Nie
Electronics and Kyma: Scott L. Miller
Electronics, flute, and Voice: Jane Rigler
Celletto: Chris Chafe

Heart Sutra is an augmented reality audiovisual composition of the most widely recited Buddhist texts, integrating chanting traditions in Chinese, Japanese, and Korean, as well as electroacoustic music and network audio technology. The musicians collaborated across 3 states, through 9

remote recording sessions using jacktrip and Netty-McNetface.The piece was commissioned by Stanford University as an invite for the Stanford community to come together and collectively process all they have been through in isolation during the pandemic. The audiovisuals were precisely mapped onto the Western sacred art wall in mosaic, stained glass, and neoclassical architecture at Stanford's Memorial Church. Overall, Heart Sutra incorporates layers of cultural complexity and spiritual symbolism. It has initiated multifaith conversations and exchanges at large. It narrates the contemplative concept of "play of reality"—understanding all suffering and happiness are passing, temporary, and transformative.

And Time Unfolds Like A Flower
Jon Christopher Nelson

And Time Unfolds Like A Flower explores timbrel relationships of seemingly disparate materials as they co-mingle, evolve, and transform. The real and synthetic fuse and diverge in what is, at times, a surreal soundscape. This work represents the first movement of a multi-movement acousmatic work entitled The Persistence of Time and Memory, inspired in part by Salvador Dali's painting The Persistence of Memory as well as by contemporary theories of time and perception/cognition.

Anthem Cycles
Andrew Davis

Anthem Cycles is a piece of recurring asynchronous melodic cycles. It is intended for live execution by a performer in the SuperCollider programming language. Sequential code blocks are executed one at a time (top down) in order but the timing between blocks is indeterminate and left to the taste and discretion of the performer.

_-=◢▌▒▒▒ ▂▃▅▒ (pronounced as 4th beat)
Linux Laptop Orchestra (L2Ork)

_-=◢▌▒▒▒ ▂▃▅▒ (is the ensemble's second crowdsourced work written for the Pd-L2Ork platform that was developed in response to the COVID-19 pandemic. It continues to explore qualities of a pulse-based electronica in a synchronous telematic (online) format while leveraging a unique environment in which each composer-instrument-builder-performer is responsible for a small component of the overall musical fabric. 4th Beat is absolute in its conception, driven purely by the collaboratively developed musical ideas. Its three-part form is infused with improvisatory sections evocative of a crowdsourced live DJ session. 4th Beat leverages Pd-L2Ork's unique ability to defy the latency and sync limitations associated with live online collaborative performance to test creative and technological limits of the ensemble.

鬼哭 *Wailing Ghosts*
Tao Li

Taken from a story by the same title in 聊斋志异 Strange Tales from a Chinese Studio (1740) published in Qing dynasty China by 蒲松龄 Pu Songling (1640 ~ 1715), 鬼哭 Wailing Ghosts explores different live processing aspects of voice and non-pitched instruments in addition to acoustic and theatric performance. The piece employs text-painting through live and synthetic timbres to portray a narrative heard in Mandarin and Sanskrit such that even those

unfamiliar with these natural languages can comprehend. The text used is mostly from the above tale with an added Buddhist mantra of Ksitigarbha at the end.

Keynotes

July 4, 20:00-21:00
Roger Doyle – Lecture/Recital

Roger Doyle is known for his pioneering work as a composer of electronic music. He has worked extensively in theatre, film and dance, in particular with the music-theatre company Operating Theatre, which he co-founded with performer Olwen Fouéré. 'Babel', his magnum opus, which took ten years to compose, was released on a 5-CD set in 1999 and contained 103 pieces of music. It is a celebration of the multiplicity of musical language and evolving technologies. Other works include an onstage piano score for the Gate Theatre production of Salomé, directed by Steven Berkoff, which played in Dublin, London's West End and on three world tours. Recent work includes the 3 hour electronic work Passades, a series of soundtracks for imaginary films – a 'cinema for the ear' – for the Irish National Symphony Orchestra and The Crash Ensemble. His electronic opera Heresy, premiered in The Project Arts Centre in 2016, as was released on a double album in 2018. He is a member of Asodána, Ireland's state-sponsored academy of creative artists and was recently elected to the higher on our of Saoi, conferred on him by President Michael D. Higgins. A feature documentary film has just been made on him, directed by Brian Lally, called 'The Curious Works Of Roger Doyle'.
In his keynote, he'll be discussing and playing excerpts from *Trapeze in Full-Moon Nights*, *The Room of Rhetoric*, *The Ninth Set - section 4* and *At The Court of Elizabeth I (pt. 1)*

July 5, 17:20-18:20
George E. Lewis – Why We Want Our Computer To Improvise: Early and Late Reflections

George E. Lewis, Professor of American Music at Columbia University, is a Fellow of the American Academy of Arts and Sciences and the American Academy of Arts and Letters, a Corresponding Fellow of the British Academy, a MacArthur Fellow, a Guggenheim Fellow, and the recipient of the Doris Duke Artist Award. A member of the Association for the Advancement of Creative Musicians since 1971, Lewis's compositions (including the widely influential interactive improvisation software, Voyager), have been performed by ensembles worldwide, and he holds honorary doctorates from the University of Edinburgh, New College of Florida, and Harvard University. Lewis is the author of *A Power Stronger Than Itself: The AACM and American Experimental Music* (University of Chicago Press) and co-editor of the two-volume *Oxford Handbook of Critical Improvisation Studies*.

July 7, 17:20-18:20
Rebecca Fiebrink – Reflections on Human & Machine Creativity

Dr Rebecca Fiebrink makes new accessible and creative technologies. As a Reader at the Creative Computing Institute at University of the Arts London, her teaching and research focus largely on how machine learning and artificial intelligence can change human creative practices. Fiebrink is the developer of the Wekinator creative machine learning software, which is used around the world by musicians, artists, game designers, and educators. She is the creator of the world's first online class about machine learning for music and art. Much of her work is driven by a belief in the importance of inclusion, participation, and accessibility: she works frequently with human-centred and participatory design processes, and she is currently working on projects related to creating new accessible technologies with people with disabilities, and designing inclusive machine learning curricula and tools. Dr. Fiebrink previously taught at Goldsmiths University of London and Princeton University, and she has worked with companies including

Microsoft, Smule, and Imagine Research. She holds a PhD in Computer Science from Princeton University, and she attended her first ICMC in 2005.

Bios

Sayaka Abe: She is currently studying informatics at the Graduate School of Science and Engineering, Tokyo Denki University. Under the guidance of Prof. Matsuura, she is conducting research on MR devices related to fertilization.

Jakob Abeßer received Dipl.Ing. degree in computer engineering and Ph.D. degree (Dr. Ing.) in media technology in 2014 from Ilmenau University of Technology, Ilmenau, Germany. He is a senior scientist in the Semantic Music Technologies group at Fraunhofer IDMT. During his Ph.D. degree, he was a Visiting Researcher in the Finnish Centre of Excellence in Interdisciplinary Music Research, University of Jyväskylä, Finland in 2010. As a Research Scientist at Fraunhofer, he has experience with algorithm & software development in the fields of automatic music transcription, symbolic music analysis, machine learning, and music instrument recognition. Also, from 2012 until 2017, he worked as a Postdoctoral Researcher in the Liszt School of Music in Weimar in the Jazzomat Research Project, focussing on analyzing Jazz solo recordings using music information retrieval technologies.

Freida Abtan is a Canadian multi-disciplinary artist and musician who works between fixed-media and computational technologies for concert, installation, and large-scale multimedia production. Her research revolves around intersensory composition and phenomenology. She holds degrees in Mathematics, Fine Art, and Electro-acoustic Composition, completing her PhD in Computer Music and Multimedia from Brown University (2013) with dissertation: Fear of Flight: Presence and Gesture in Multimedia Performance. She lectures and performs internationally and has released two solo albums and appeared on numerous others. Currently Assistant Professor of Electronic Music Composition at Carnegie Mellon University, she previously led the Music Computing (now Electronic Music, Computing, and Technology) Bmus/Bsc programme at Goldsmiths, University of London.

Miriam Akkermann studied flute and music and new technologies in Bolzano/Italy and audio communication and composition in Berlin. In 2014 she received her PhD in musicology from the Berlin University of the Arts.
Her research areas include the design of musical performance practices, analysis methods for electroacoustic music and computer music, music archiving, and in the project Lullabyte she deals with the effect of music on sleep. Artistically, she is active in the fields of sound art, contemporary improvisation and composition. Since 2019 she holds the junior professorship for Empirical Musicology at the TU Dresden.

Alejandro Albornoz, Chilean electroacoustic composer and sonic artist. He studied electroacoustic composition in Chile with Rodrigo Sigal and Federico Schumacher and Adrian Moore and Adam Stanović in the United Kingdom. He works on acousmatic and live electronics since 2004. He has a PhD in Electroacoustic Composition from the University of Sheffield, UK and currently is lecturer and researcher at the Music & Sonic Arts School at the Universidad Austral in Chile. The central topics in his research are fixed media composition, human voice, poetry, language and analysis in acousmatic pieces, both in multichannel and stereo formats.

Christopher SW Anderson an inter-disciplinary musician, composer, sound designer, and artist living in Vancouver Canada. He investigates alternative approaches to compositional and performance models using generative and computationally assistive systems. His compositions for electronics and trombone explore embedded generative processes in live performance and improvisational systems. He is a graduate of Capilano University's Jazz Studies program and has a Master's of Fine Arts from Simon Fraser University's School of Contemporary Arts. He is also

a musical instrument prototype developer, sound designer, and an occasional university sessional instructor. Chris has been a research assistant involved in exploring generative electronic music within the SFU's Metacreation lab since 2010. He has developed music systems based on machine-learning algorithms that have led to presentations and writings as part of the Electronic Music Studies Conference EMS2011 New York and the Second International Workshop on Musical Metacreation (MUME-2013),in conjunction with the Ninth Annual AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE-13), 2013 Boston. Chris' works have been performed at the International Symposium on Electronic Art (ISEA2015) Vancouver, and the Toronto International Electroacoustic Symposium (TIES2014).

Andreja Andric (born 1973) is a Serbian composer and programmer, living in Aarhus in Denmark. He explores the intersections of mathematical processes, intuition and chance and uses computer programming as key means of artistic expression. With a primary interest in composition and performance for his networked laptop/smartphone ensemble, he is also active as composer of vocal and instrumental music and creator of video and multimedia art. His work has been performed on festivals such as ADAF (Athens Digital Arts Festival) 2021, World Music Days 2019 in Tallinn, Estonia, and Festival Futura in Crest, France (2018). Holds a PhD in Music Informatics from the State University of Milan, Italy.

Ioannis Andriotis (b. 1983) is interested in creating projects that bridge the gap between popular and experimental mediums. As an artist, Andriotis focuses on sociological aspects of music emphasizing elements of human interaction, culture, and social memory — especially on projects that include visuals such as multimedia productions and art installations. Andriotis, has composed music for various configurations of small and large acoustic ensembles, as well as music for the theater, live electronics, acousmatic music, film & documentaries, and International biennales.
Andriotis has served as a visiting lecturer of music composition & technology at the University of Oklahoma, Oklahoma State University, and Rose State College. He is the owner and founder of AndriotisMusic & Media, LLC for audio-music-video production. Andriotis is also an audio engineer and member of the steering committee for the New York City Electroacoustic Music Festival (NYCEMF) as well as a panelist for the ICMC and SEAMUS.

Steve Ashby is a musician, composer, and sound artist based in the United States. Ashby work focuses on sound found in the natural and digital world to discover places of intersection which engage in the art of listening. Recent performances and residencies include Soundpedro, Mountain Lake ArtLab, EMS Stockholm Guest Composer Series, Radiophrenia Scotland, Cube Fest at Virginia Tech, New Music Gathering, Sound Arts Richmond, and the NYC Electroacoustic Music Festival.

Jesse Austin-Stewart (he/him) is a sound artist based in Te Whanganui-a-Tara Wellington, Aotearoa New Zealand. He is a composer, sound artist, producer, and academic and is currently completing his PhD at Massey University exploring barriers of capital to spatial audio.
As a sound artist, Jesse creates works that explore ways to make the field of spatial audio more inclusive. This creative practice often explores the intersection of spatial audio and disability and hearing, while also acknowledging barriers of finance and education. He has written works for contemporary dance and film and composed and curated performance art works and sound installations, among other works which have been exhibited in Aotearoa New Zealand, Japan, Australia, Czech Republic, Greece, Sweden, and France.
As a producer and audio engineer, he has recorded work for short films, orchestra, solo artists and bands, small ensemble, opera, and various other configurations. Jesse's songwriting and

production work has received over 1,00,000 streams online and has been award nominated. As a person with a disability, accessibility is core to Jesse's work and his artistic curation.

Collaborative pianist and vocal coach **Dr. Elizabeth Avery** is Associate Professor of Music at the University of Oklahoma, where she also holds the Edith Kinney Gaylord Presidential Professorship. Dr. Avery coaches opera, recital repertoire, and teaches courses in lyric diction and vocal literature. An advocate of the music of living composers, she has given world premiere performances of vocal music throughout the United States, including Carnegie Hall, and in Europe. Along with mezzo-soprano Dr. Quinn Patrick Ankrum, she is co-creator of Living Song Project, a database that will promote the art song and vocal chamber music of living American composers. Avery holds the Doctor of Musical Arts degree from the Eastman School of Music under Dr. Jean Barr, winning the esteemed C. Eschenbach Prize in recognition of distinguished collaboration with singers. She earned her Master's degree as a fellowship student of Martin Katz at the University of Michigan. She has previously taught at Indiana University, Castleton State College, Austin Peay State University, and the Crane School of Music.

Natasha Barrett is a composer exploring new technologies and experimental approaches to sound in a broad range of contemporary music, including concert works, public space sound-art installations and multi-media interactive music. She is internationally renowned for her electroacoustic and acousmatic music, and use of 3D sound technology in composition. Her work is commissioned and performed throughout the world and has received over 20 international awards including the Nordic Council Music Prize. She also collaborates with performers, visual artists, architects and scientists. Recent highlights include 3D audio-visual movies with the USA-based OpenEndedGroup commissioned by IRCAM (FR), EMPAC (USA) and the Ultima Festival (NO), sound-architectural installations with OCEAN Design Research Network (NO), science-art applications of sonification with geologists at the University of Oslo, and live electronics collaborations with vocal ensemble Nordic Voices (NO) and organist Nils Henrik Asheim (NO). Current projects include works for Cikada String Quartet (NO) and Ensemble Itinéraire (FR), and a number of acousmatic compositions and outdoor sound installations. She is also active in performance, education and research, and leads the Norwegian electroacoustic music performance group Electric Audio Unit.

Bret Battey is Professor of Audiovisual Composition at the Music, Technology, and Innovation Institute for Sonic Creativity at De Montfort University, Leicester, UK. He creates electronic, acoustic, and audiovisual concert works and installations, with a focus on generative techniques. He has been a Fulbright Fellow to India and a MacDowell Colony Fellow, and he has received recognitions and prizes from Austria's Prix Ars Electronica, France's Bourges Concours International de Musique Electroacoustique, Spain's Punto y Raya Festival, MADATAC and MuVi4, Abstracta Cinema of Rome, Amsterdam Film eXperience the Texas Fresh Minds Festival, and the Red Stick International Animation Festival for his sound and image compositions. He pursues research in areas related to algorithmic music, haptics, and image and sound relationships. He completed his masters and doctoral studies in Music Composition at the University of Washington and his Bachelors of Music in Electronic and Computer Music at Oberlin Conservatory. His primary composition and technology teachers have been Conrad Cummings, Richard Karpen, and Gary Nelson. He also served as a Research Associate for the University of Washington's Center for Digital Arts and Experimental Media.

Alfonso Belfiore, composer.
Since 1977 he has dedicated himself to research and experimentation in the field of new electronic and computer technologies applied to musical composition, also crossing over into larger contexts, embracing various forms of artistic expression such as poetry, theater, dance and

image. electronics. He took part in multimedia projects developing, through the use of electronic and computer technologies, complex interactions between gesture, sound, nature, image and word, also deepening the relationship between musical composition and algorithmic processes. He was holder of the Chair of Electronic Music and Coordinator of the Department of New Technologies and Musical Languages of the Conservatory of Florence from 1992 to 2021, from 1980 to 1992 he held the same chair at the Conservatory of Padua. He is president of the International Institute of Art and Technology and artistic director of "Progetto Fortissimo" for UNICEF / RAI.
He is the artistic director and creator of DIFFRAZIONI / Florence Multimedia Festival, an international festival dedicated to art and technology of which the fourth edition is being prepared.
He has collaborated, with the Tehran International Electronic Music Festival.
He is the creator and artistic director, together with Esther Lamneck, of FLORENCE TO NEW YORK / PROJECT, thanks to which every year since 2006, electroacoustic and multimedia works by young composers of the Conservatory of Florence have been presented in first performance in New York.
Between 1984 and 2004, as artistic director he oversaw the publication of over 50 titles on vinyl and CD for the Vecchio Mulino Produzioni.

James Bennett is a student reading for a MSc in Robotics and Autonomous Systems at the University of Lincoln. James recently joined the AgriFoRwArdS Centre for Doctoral Training (CDT) and will pursuing further studies at the University of East Anglia.

David Berezan is Director of the Electroacoustic Music Studios and MANTIS (Manchester Theatre in Sound) at The University of Manchester (UK). After completing a BA in History (1988) at the University of Calgary, a Diploma in Composition (1996) at Grant MacEwan College (Edmonton) and an MMus in Composition (2000) at the University of Calgary, he moved to the UK and completed a PhD in Electroacoustic Composition (2003) at the University of Birmingham (UK). Berezan has been awarded in the Fundación Destellos (Argentina, 2022), Klang! (France, 2015), Music Viva (Portugal, 2012), Bourges (France, 2002), Luigi Russolo (Italy, 2002), Radio Magyar (Hungary, 2001), São Paulo (Brazil, 2003, ’05), L’espace du son (Belgium, 2002) and JTTP (Canada, 2000) competitions. He has worked in residence in the studios of the University of Calgary (Canada, 2011), Université de Montréal (Québec, 2011), CMMAS (Mexico, 2011), EMS (Sweden, 2011, ’12, ’18), VICC (Sweden, 2011, ’12, ‘14), The Banff Centre of the Arts (Canada, 2000, ’07), ZKM’s Institut für Musik und Akustik (Germany, 2007), Ina-GRM (France, 2007), IMEB (France, 2007), ESB (Switzerland, 2005), and Tamagawa University (Japan, 2007).

Noah Berrie is a composer and sound artist from New York, and a recent MA graduate from the Center for Computer Research in Music and Acoustics (CCRMA), Stanford. A classically trained violinist, his recent work explores the perceptual and spatial subtleties of sound. His practice spans multichannel audio, audiovisual work, sound installations, instrument building, songs, and score-based composition.

Cristian Biasin is an italian composer and hip-hop artist. He was born in Caserta in 1991. As a child he started studying music, learning to play the piano and writing songs. He attended the G. Martucci Conservatory in Salerno from 2015 to 2021, where he graduated in Electronic Music Composition. He released several hip-hop albums, while he continues his studies oriented towards composition of electronic music.

Dr Manuella Blackburn is a composer of acousmatic music based in the UK. She is an award-winning composer who has been creating sound-based music for over 15 years. She is a Lecturer at The Open University, UK and her research interests cover compositional methodologies, digital sampling, sample pack creation and intercultural creativity.

Michael Blandino offers his digital art music from Baton Rouge, LA where he serves as Assistant Dean of the Ogden Honors College at Louisiana State University. He completed his doctorate in Experimental Music and Digital Media at LSU, where he studied with Stephen David Beck, Edgar Berdahl, and Jesse Allison. His undergraduate degree in Philosophy and Master's degree in Music Theory were also taken at LSU. Blandino's works have been shown at the New York City Electroacoustic Music Festival (NYCEMF), International Computer Music Conference (ICMC), Electronic Music Midwest (EMM) festival, the Ebb and Flow Festival, the New Orleans Film Festival, and within a supplement to the CSound Book (MIT). Active in experimental music research, he has contributed to the study of human control of continuous analog sensors, of meaning and environmental impacts of digital art and music performance, and of the auditory display of environmental risk information in augmented reality.

David Blink is the director of the College of the Siskiyous Concert and Jazz bands. He plays the trumpet, and is also a composer. David recieved his Bachelor's degree in Applied Music with an emphasis in Jazz from the University of Nevada, Las Vegas, and his Master's degree in Music Composition from Central Washington University. In 2015, David moved to Morelia, Mexico where he formed a new Big band at the Conservatorio de Las Rosas, which became known as the Conservatorio de las Rosas Latin Jazz Orchestra. David has been a featured artist at the Festival Internacional de Música de Morelia. He created large ensemble arrangements of the famous jazz artist Eugenio Toussaint. As a electroacoustic musician and composer, he has been a featured artist at the Visiones Sonoras XI, and a visiting artist at CMMAS.

Maja Bosnić is a composer and performer from Belgrade. In her music, she re-questions and examines accustomed phenomena in the process of music making, exposes them to concepts of every-day life, then resets them in compositions that often include active audience participation. Maja obtained a PhD diploma in Music Composition at Goldsmiths University of London (UK). Her works have been performed in festivals, such as Impuls (Austria), CTM Festival, Darmstadt Summer Courses and many others.

Francesco Bossi is a composer whose work includes acoustic and electroacoustic music, video and multimedia installations. He holds degrees from University of Bologna and Conservatorio di Milano where he graduated with highest honours in Electronic Music. His research is currently focused on the production of algorithmic computer based custom synthesizers and video synthesizers. His personal effort is to share contemporary music beyond academic audiences. His works have been performed by Orchestras, Ensembles and soloist, and are often selected by international festivals and concerts. He has been awarded first price in "The Sounds of Music" competition, (Villa Arconati Milan, 2012). Recently he has been invited to Naples (2012), Florence (2014 and 2016), Padua, Venice (2014), New York City (2014, 2015, 2016, 2017 and 2018), Denton (Usa) - ICMC (2015), Singapore (2015), Valencia (2015), Statesboro USA (2016), Bourges (2016), Sao Paulo (2016), Matera (Ma/In Festival 2016), St. Cloud, Usa (2017), Livorno (2017), Como (2017), Seul (2017), Cyprus (2018), Daegu (ICMC 2018), Firenze (Diffrazioni Multimedia Festival) March 2019, Malaga (The Sound Music Computing Conference) May 19, Saint-Etienne (Art & Science Days 2019) May 2019, New York City (NYCEMF - ICMC 2019) June 2019, Milan (Parade Electronique) November 2019, Taiwan (Wocmat) December 2019, Santiago (ICMC 2020), Taipei (Wocmat) December 2020, Santiago (ICMC 2021), Valencia

(Synchresis, 2021), Earth Day Art Model (Telematic Festival 2022), Saint-Etienne (SMC Music Technology and Design 2022). Francesco Bossi currently lives in Milan (Italy).

Michael Boyd, Associate Professor of Music and Music Program Coordinator at Chatham University, is a composer, scholar, and experimental improviser. His music embraces experimental practices such as installation, multimedia, and performance art, and has been performed in a variety of venues throughout the United States and abroad. His user-driven installation Confessional won the 2016 FETA Prize in Sound Art. Boyd has published articles in Perspectives of New Music, Tempo, and Notes. He is active in his community, currently serving a third elected term on the Wilkins Township Board of Commissioners. Boyd often bikes to work and competes in mountain bike races.

Dr James Bradbury
I am a composer and creative-coder from Perth, Western Australia currently residing in Northern England. I enjoy programming in my practice and harnessing the computer to find and organise audio-samples through machine listening and learning. I currently work as a Research Fellow in Creative Coding on the Fluid Corpus Manipulation project.

Originally from Mexico City, **Hector Bravo Benard** studied at the University of Victoria (Canada), the Xenakis Centre (France), the Institute of Sonology (Netherlands), the University of Washington's DXARTS center (USA), the Autonomous National University of Mexico, and the University of Birmingham (UK). He writes sound-based music for acoustic instruments, live electronics, and fixed media, and his works have been performed at events such as the ICMC, Gaudeamus Festival, New York Electroacoustic Music Festival, and the Kyma International Sound Symposium. Currently lives in the Netherlands, working as an independent artist and software developer.

Brian Bridges is a graduate of Trinity College Dublin (MPhil in Music and Media Technologies) and National University of Ireland, Maynooth (BA in English and Music; PhD in Music) and is a composer/sonic artist, electronic musician and researcher. He studied in Ireland with composers Donnacha Dennehy, Roger Doyle and Jürgen Simpson (TCD) and Victor Lazzarini (Maynooth), in addition to private studies in the US with Glenn Branca and Tony Conrad. He is a founder–member of the Dublin–based Spatial Music Collective and his compositions have been programmed at festivals in Europe, the Americas and China. He has received support and commissions from arts organisations including the Arts Council of Ireland, Culture Ireland, the Contemporary Music Centre and Resonance FM.

Villbjørg Broch I studied dance and improvisation at the SNDO Amsterdam and classical voice with coloratura soprano Marianne Blok for more than. I have worked in multimedia projects of all sorts and sizes over the past 30 years. I am for a large part autodidact in mathematics, programming and algorithmic composition. My studies of pure mathematics have been quite systematic over the past 20 years, and are ongoing. I have become particularly interested in algebra, algebraic geometry and group theory. The work with Higher Order Ambisonics / spatial audio – has been a natural extension of my interest in geometry. special thanks to CCRMA, Stanford og IEM, Graz for supporting this work. I am an active performer of new and improvised music, mostly as a vocalist with an electronic setup. I have especially worked with many variations of music theater and mad interpretations of a wide range texts all ages.

Alex Buck is a composer, performer, music technologist, and educator from Brazil. Based in California, he is praised for his sophistication and originality in his aesthetic goals. Originally from São Paulo (BR), Alex has specialized in acousmatic music modality. His pieces have been

the recipient of significant international prizes and nominations, including the first prizes in Premio Destellos International Electroacoustic Composition Contest (AR 2022), Prix Métamorphoses (BE 2020); MusicWorks Magazine Electronic Music Composition Contest (CA 2019), and Musica Nova Electroacoustic Music Competition (CR - 2019). Buck holds a DMA degree in composition and performance from the California Institute of the Arts (USA) and an MFA in electroacoustic composition from the Arts Institute at UNESP (BR).

The work of a transdisciplinary creative **Dr. Ivica Ico Bukvic** (b. 1976) is defined by the community building through creative enabling technologies and experiences. Bukvic's output encompasses aural, visual, acoustic, electronic, performances, installations, technologies, research publications, presentations, over $1M in external grants, patent disclosures, and awards. He currently serves as the inaugural director of the Virginia Tech Creativity + Innovation (C+I) trandsciplinary community.
This performance features several Linux Laptop Orchestra (L2Ork) performers and contributors to this particular iteration of the work. They are: Caleb Bittenbender, Kieran Casey, Jackson Famolari, Yangkai Lin, Jacob Smith, and Caden Vandervort.
Virginia Tech Linux Laptop Orchestra (L2Ork)Named as one of the top six national transdisciplinary exemplars (a2ru, 2015), and one of the top eight research projects at Virginia Tech (DCist, 2014), a contemporary multimedia ensemble Linux Laptop Orchestra or L2Ork (pronounced as 'lohrk'), explores unique form of collaboration found in the western classical orchestra through the use of innovative human-computer interaction technologies for the purpose of exploring an integrative approach to design, engineering, arts, and science.
Founded by Dr. Ivica Ico Bukvic in May 2009, L2Ork is part of the interdisciplinary initiative by the Virginia Tech Digital Interactive Sound & Intermedia Studio (DISIS) and the Institute for Creativity, Arts, and Technology (ICAT). As the world's first Linux-based laptop orchestra incorporating extensive study of gesture and Taiji (Tai Chi) choreography L2Ork offers optimal infrastructure for creative research at minimal cost. By providing a seamless integration of arts and sciences it is in part designed to bridge the gap between STEM and the Arts, with particular focus on K-12 education. L2Ork's infrastructural backbone Pd-L2Ork visual programming environment with its unique K-12 learning module has been utilized in dozens of K-12 Maker workshops and is currently used around the world by thousands of artists, designers, researchers, and educators.
http://l2ork.music.vt.edu

American tenor **Joel Burcham** has sung 35 principal tenor roles with companies such as Utah Opera, Central City Opera, Opera Omaha, Madison Opera, Opera Fort Collins, Opera Theatre of the Rockies, and Painted Sky Opera. Some of Joel's strongest roles include Alfredo, Don José, Pinkerton, Cavaradossi and Faust. An active concert soloist, Joel has sung with Hawaii Symphony, Colorado International Mahler Festival, South Bend Symphony, Omaha Symphony, Madison Symphony and the Classical Music Festival in Eisenstadt, Austria in that including Beethoven's 9th Symphony and Missa Solemnis, Haydn's Creation and The Seasons, Verdi Missa Di Requiem, Britten's Serenade for Tenor, Horn and Strings, and War Requiem, and Handel's Messiah. With Voice Performance degrees from the University of Wisconsin-Madison (DMA), University of Arkansas (MM), and Southern Illinois University-Edwardsville (BM), Dr. Burcham currently serves as Associate Professor of Voice and Past Voice Area Chair at the University of Oklahoma School of Music.

Shane Byrne is a composer of electroacoustic music based in Wicklow, Ireland. His work focuses on interactivity and participation within the practice of electroacoustic music composition.
His current interests include physical computing and the potential for human-computer

interaction to enhance the musical experience for both performer and audience alike. This has led him to build interactive audio installations for music festivals, symposia, and public workshops. His work has been performed globally at various conferences and electroacoustic festivals including TIES, MUSA, KLG, SMC and iFIMPac.

Rodrigo F. Cádiz is a composer, researcher and engineer. He studied composition and electrical engineering at the Pontificia Universidad Católica de Chile (UC) in Santiago and he obtained his Ph.D. in Music Technology from Northwestern University. His compositions, consisting of approximately 50 works, have been presented at several venues and festivals around the world. His catalogue considers works for solo instruments, chamber music, symphonic and robot orchestras, visual music, computers, and new interfaces for musical expression. He has received several composition prizes and artistic grants both in Chile and the US. He has authored around 50 scientific publications in peer reviewed journals and international conferences. His areas of expertise include sonification, sound synthesis, audio digital processing, computer music, composition, new interfaces for musical expression and the musical applications of complex systems. He has obtained research funds from Chilean governmental agencies, such Fondecyt and CNCA. He received a Google Latin American Research Award (LARA) in the field of auditory graphs. In 2018, Rodrigo was a composer in residence with the Stanford Laptop orchestra (SLOrk) at the Center for Computer-based Research in Music and Acoustics (CCRMA), and a Tinker Visiting Professor at the Center for Latin American Studies, Stanford University. In 2019, he received the prize of Excellence in Artistic Creation from UC, given for outstanding achievements in the arts. He is currently full professor at the Music Institute and Electrical Engineering Department of UC.

Magno Caliman - Sound artist, educator and creative coder, both his artistic and academic research activities are heavily rooted in the embracing of programming languages as places for poetical speculation, as well as the construction, modification and manipulation of electronic circuits. Has a degree in Music Composition and a master's diploma in Education, where he developed and researched learning and teaching methodologies for programming languages in the context of the arts. Former teacher of Multimedia Arts at Maia University in Porto - Portugal, and was part of the team running, managing and curating SOMAR, a venue in Lisbon dedicated to sound, art and technology.
Currently a doctoral researcher working with the "Music, Thought and Technology" research cluster at the Orpheus Institute - Belgium, he investigates how technical objects can operate as active, non-transparent agents in technologically mediated experimental sound practices.

Anıl Çamcı is a composer and professor of Professor of Performing Arts Technology at the University of Michigan. His work investigates ways of worldmaking through multimedia artworks and research in the areas of virtual reality, human-computer interaction, and electronic music. Previously, he worked at the University of Illinois at Chicago, where he led research projects on interaction design and immersive audio, and Istanbul Technical University, where he founded the Sonic Arts Program. Çamcı's research and artistic work has been featured in leading journals and conferences and has received numerous awards. His album "Dekagon" has recently been released by Innova Recordings as a selection from their first national call. His book "The Cognitive Continuum of Electronic Music" has been published by Bloomsbury as part of their Music and Sound Studies series in 2022.

Nicole Carroll is a composer, performer, sound designer, and builder working with audio, video, and tangible objects. Her work spans installation, improvisation, and fixed media performance, across noise, soundscape, and acousmatic genres. She is active as a sound designer and composer in theatre, performs electronic music under the alias "n0izmkr," and builds

custom synthesizers, controllers, and performance sensor systems. Her research focuses on generative systems that merge analogue and digital technologies to create musical performance systems from non-musical sources. Additional research areas include acoustic ecology, soft circuits and wearable sensors, augmented acoustic instruments, AV synthesis on mobile devices and embedded systems, and western esotericism, which informs her compositional and performance processes.
Nicole's works have been performed internationally in the USA, Mexico, Wales, Germany, Greece, Macedonia, Australia, South Korea, and China, including at SEAMUS, ICMC, TEI, and NIME conferences. Nicole holds an M.M. and B.M. in Composition from Bowling Green State University and Arkansas State University, respectively. She received an M.A. and Ph.D. in Computer Music and Multimedia from Brown University in Providence, RI, USA and is currently Lecturer in Digital Composition at the University of Newcastle in Australia.

Antonio Carvallo was born in Chile in 1972. Parallel to private piano lessons, studied counterpoint and harmony. Then, he studies at Universidad de Chile, where he gets a Bachelor of Composition degree.After that he moves to Rome, Italy, studing Electroacustic Music at Conservatorio Santa Cecilia, getting a First Level Academic Degree and a Second Level Specialization Degree.Back in Chile he gets a Master of Art degree in Composition and a PhD in Esthetic and Art Theory at Universidad de Chile.His compositions have been performed in Chile, Argentina, Italy, Holland, France, Sweden, Germany, Austria, Slovakia and Thailand. He has permanently published his works in CD and score.He began to teach Musical Analysis in 2000 at Universidad de Chile.Nowadays he teaches at Universidad de Chile, Pontificia Universidad Católica de Chile and Universidad Mayor.From 2015 to 2018 was the President of the National Association of Composers, Chile.

Dr Rob Casey is a pianist, composer, researcher, and lecturer in Music at Ulster University. The focus of his published research and creative practice is experimental music, composition, notation, heritage, and community music.

Jean-Michaël Celerier, born in France in 1992, is a freelance researcher, interested in art, code, computer music and interactive show control. He studied software engineering, computer science & multimedia technologies at Bordeaux, and obtained his doctorate on the topic of authoring temporal media in 2018. He develops and maintains a range of free & open-source software used for creative coding, digital and intermedia art, which he leverages in various installations and works; in particular, most of his work is centered on the ossia platform for which he is the main developer. He enjoys organizing events centered on programming and media art - most recently the Linux Audio Conference, and a C++ meetup in Bordeaux. He teaches all sorts of creative coding languages (PureData, Processing, OpenFrameworks, etc) to both computer science and graphics design students.

Gustavo Chab Argentina-Spain (b. Buenos Aires, 1964) Composer of mostly electroacoustic works that have been performed in the Americas and Europe.
He studied harmony, counterpoint and piano with Daniel Montes; composition and musical analysis with Francisco Kröpfl. He composed his first electroacoustic piece in 1993, specialising in composition techniques in electroacoustic. His compositions, including works for instrumental, electronic music, and performances. Frequently explores the spatialisation of sound in composition, mixing fixed media acousmatic and sound generation in real time.
His compositions have been performed at numerous festivals and has received-among many awards – Prize Exhibitronic 2018/International Festival of Sound Arts (Strasbourg-France); First Prize of the FNA /Juan Carlos Paz (Buenos Aires, Argentina); a special Mention of the Municipality of Buenos Aires (1995), (2014/2015) and a honourable Prize-Residence of the

International Competition of Electroacoustic Music GMEB (Bourges-France, 1993) /Artist in Residence CCMIX, Center for the Composition of Music Iannis Xenakis (France).

Professor Chris Chafe is a composer, improviser, and cellist, developing much of his music alongside computer-based research. He is the Director of Stanford University's Center for Computer Research in Music and Acoustics (CCRMA). An active performer either on the net or physically present, his music reaches audiences in sometimes novel venues. Chafe's works include gallery and museum music installations which are now into their second decade with "musifications" resulting from collaborations with artists, scientists, and MDs

Sutirtha Chakraborty is an early-stage researcher (pursuing a PhD) deeply devoted and highly passionate about science. He strives for excellence and contribution to knowledge. He is an active member of a team of post-graduated talented individuals working in Music Tech with Artificial Intelligence at Maynooth University. His areas of research are signal processing and deep learning techniques, especially with time-series data. Experienced working with hardware and sensors with Arduino and Raspberry Pi. He had been working on pose estimation and finding rhythm from video data and creating several interfaces for creative music-making.

Hong Kong-American composer **Chin Ting CHAN** has been a fellow and guest composer at festivals such as IRCAM's ManiFeste, ISCM World Music Days Festival, and UNESCO International Rostrum of Composers. He has worked with ensembles such as City Chamber Orchestra of Hong Kong, Ensemble intercontemporain (France), Ensemble Metamorphosis (Serbia), Ensemble Signal (U.S.), eighth blackbird (U.S.), Hong Kong New Music Ensemble, Mivos Quartet (U.S.), and Rosetta Contemporary Ensemble (Japan), with performances in more than twenty countries. His recordings appear in more than fifteen albums, and his scores are published through BabelScores. He is currently an Assistant Professor of Music Composition at Ball State University. He holds a D.M.A. degree from the University of Missouri–Kansas City, as well as degrees from Bowling Green State University and San José State University.

Christopher Chandler is a composer, sound artist, and a co-founder of the [Switch~ Ensemble]. He serves as Assistant Professor of Music at Union College in Schenectady, NY where he teaches courses in music theory, composition, and technology. His acoustic and electroacoustic works draw on field recordings, found sound objects, and custom generative software. His music has been performed across the United States, Canada, and France by leading ensembles including Eighth Blackbird, the American Wild Ensemble, the Oberlin Contemporary Music Ensemble, the Cleveland Chamber Symphony, and Le Nouvel Ensemble Moderne. His music has received recognition and awards for his music including a BMI Student Composer Award, an ASCAP/SEAMUS Commission, two first prizes from the Austin Peay State University Young Composer's Award, winner of the American Modern Ensemble's Annual Composition Competition, and the Nadia Boulanger Composition Prize from the American Conservatory in Fontainebleau, France. Christopher received a Ph.D. in composition from the Eastman School of Music, an M.M. in composition from Bowling Green State University, and a B.A. in composition and theory from the University of Richmond.

Chen, Shu-Huang
Based in Taichung, Taiwan. Graduated from the department of Motion Picture of National Taiwan University of Arts. After graduating from the college he stared a creating career in digital media arts including visual and sound designing. Also in the name of Decagram for music creating and publish an album called "R+i" in 2018. It also available on Bandcamp for listening. Now studying electronic music at the Institute of Music, Nation Chiao Tung University,and faculty advisor is the Professor Yu-Chung Tseng.

Yung Hsin Cheng is a Taiwanese composer who is currently pursuing a Master degree in Electronic Music Composition at National Yang Ming Chiao Tung University. She majors in electronic music under the supervision of Professor Yu-Chung Tseng. She has won numerous awards, such as WOCMAT2019 International Electroacoustic Music Young Composer Award (2nd prize) and WOCMAT 2020 Phil Winsor International Youth Computer Music Competition Award.

Youngjae Cho (*1990) studied composition in South Korea and at Nuremberg in Germany. He has been awarded with prizes, including at DAAD scholarships, George Enescu Competition, Younghi Pagh-Paan Composition Prize, Via Nova Competition. His works has been performed in Germany, France, China, Italy and Korea. Currently he studies electroacoustic composition at University of the Arts Bremen in Germany.

Grace Choi is a composer and sound-visual artist. For instrumental works, she describe her visual idea with sound. She is exploring her own field of sound visualization. She is actively performing her works in Korea and the United States, works with various music organizations, and has received commissions to compose music from NMARA International Art Exchange group and BE;Cause meditation game developer company. She also composed music for MMCA's VR works. She graduated from Seoul National University and University of Cincinnati. She is currently studying for a doctorate at the University of Cincinnati.

Se-Lien Chuang Composer, pianist and media artist, 1965 born in Taiwan, since 1991 residence in Austria. The artistic and compositional emphases range from contemporary instrumental composition/improvisation, computer music to audiovisual interactivity.International productions, research stays and lectures as well as numerous representations of compositions in Europe, Asia, North- and South America: ICMC, NYCEMF, NIME, SMC, ISEA, TENOR, Audio Mostly, SICMF Seoul, IAMAS Japan, Ars Electronica Linz, amongst others. Since 1996 jointly with Andreas Weixler running Atelier Avant Austria, with key aspects in development of audiovisual interactive systems and audio/visual realtime/non-realtime processing, computer music and algorithmic composition.

Michael Clarke is Professor of Music at the University of Huddersfield (UK). He is a composer, music analyst and developer of software for music. He currently directs IRiMaS (Interactive Research in Music as Sound), a five-year project funded by a European Research Council Advanced Grant investigating the potential for software to make research and study of music, across all genres, more interactive and based on sound. He was previously PI of the TaCEM project (Technology and Creativity in Electroacoustic Music, funded by the UK's Arts and Humanities Research Council), along with the co-authors of this paper, researching the interaction of technical innovation and musical creativity in computer music resulting in the book and accompanying software Inside Computer Music (OUP 2020) which studies nine key works from the computer music repertory in depth.

Garry Clawson is a student reading for a MSc in Robotics and Autonomous Systems at the University of Lincoln. Garry recently joined the AgriFoRwArdS Centre for Doctoral Training (CDT) and will pursuing further studies at the University of Cambridge.

Kevin Cua was born in the Philippines in 1994. He received his Master's degree in Information Systems and Application from National Tsing Hua University in Taiwan. He is an honorary member of The Phi Tau Phi Scholastic Honor Society. He received his undergraduate degree

from Ateneo de Manila University. He is a musician who plays the guitar and ukulele, and also writes his own songs. He currently works in Circle AI Taiwan as a Software Engineer.

Dr. Patti Cudd is active as a percussion soloist, chamber musician and educator. Patti is a member of the acclaimed new music ensemble, Zeitgeist. Her other diverse performing opportunities have included CRASH, the Minnesota Contemporary Ensemble, Minnesota Dance Theatre, and the Borrowed Bones Dance Theater. As an active performer of the music of the 21st century, she has given concerts and master classes throughout North America, Asia, Europe, and South America. Patti has worked closely with some of the most innovative composers of our time including Brian Ferneyhough, Morton Feldman, Roger Reynolds, Martin Bresnick, Pauline Oliveros, Jay Aaron Kernis, John Luther Adams, John Zorn, Michael Colgrass, Cort Lippe, Harvey Sollberger, Julia Wolfe, Christian Wolff, Vinko Globokar and FredericRzewski. As a percussion soloist and chamber musician, she has premiered well over 200 new works, and has recorded under the labels Hat Hut, Bridge, New World, CRI, Innova, Emf Media and Mode. Patti holds a Doctor of Musical Arts Degree specializing in Contemporary Musical Studies from the University of California, San Diego, Master of Music Degree from the State University of New York at Buffalo, undergraduate studies at the University of Wisconsin-River Falls and studied in the soloist class with a Fulbright Scholarship at the Royal Danish Conservatory of Music in Copenhagen, Denmark. Her teachers have included Steven Schick, Jan Williams, Joe Holmquist, Gert Mortensen and Bent Lylloff.

Yongbing Dai, Chinese Master Student Graduated from Wuhan Conservatory of Music, majoring in computer music composition, and PhD student in electronic music composition at Shanghai Conservatory of Music, studied under Professor Chen Qiangbin. and at the same time, study Master course of composer of Royal Danish Academy of music in Copenhagen. Member of China Electronic Music Association, national intermediate recording engineer. Among them, The Youth of Dream- seeking, an song ,won the Top Ten Original Song Award of the Youth of the 2014 Nanjing Youth Summer Olympics; Fire Waterfall fire fall, The soundtrack, won the nomination for the 2014 Yamaha & Nuendo Soundtrack Competition. Fuxi , an electronic music work, was selected into the WOCAMT2016 International Computer Music and Audio Technology and IRCAM Workshop Joint Seminar. Dot-Sky, an audio-visual work, was selected for the 2018 ICMC Korea Daegu performance. Zuihuayin, an electrical music work, was selected for the 2022 ICMC performance.

Roger B. Dannenberg is Emeritus Professor of Computer Science, Art & Music. He received a Ph.D. in Computer Science from Carnegie Mellon University in 1982. He is internationally known for his research in the field of computer music. He is the co-creator of Audacity, an audio editor that has been downloaded 100's of millions of times, and his patents for Computer Accompaniment were the basis for the SmartMusic system used by hundreds of thousands of music students. His current work includes live music performance with artificial computer musicians, automatic music composition, interactive media and high-level languages for sound synthesis. Prof. Dannenberg is also a trumpet player and composer. He has performed in concert halls ranging from the historic Apollo Theater in Harlem to the modern Espace de Projection at IRCAM in Paris. Besides numerous compositions for musicians and interactive electronics, Dannenberg co-composed the opera La Mare dels Pexios with Jorge Sastre, and translated and produced the opera in English as The Mother of Fishes, in Pittsburgh in 2020.

John D'Arcy is a Lecturer in Digital Media at Sonic Arts Research Centre, Queen's University Belfast. His research involves interactive media and live performance. Recent projects include 'Laganside', a locative media poetry experience at Belfast's River Lagan; and 'Raise Your Expectations', a walking VR experience addressing urban redevelopment in Belfast.

Andrew Davis is a composer and electric guitarist from Boston, MA who has written for a variety of media both acoustic and electroacoustic. Davis' early experiences in music were in local concert bands where he played trombone and in rock bands where he played electric guitar. Fused with a strong background in popular music, his music seeks to explore a variety of different genres and musical aesthetics.
His works have been performed by groups such as the JACK Quartet, PRISM Quartet, Alarm Will Sound, Daedalus Quartet, the Argento Ensemble, loadbang, the Boston New Music Initiative, the Luna Nova Ensemble, the University of Texas Wind Ensemble, the Yale Concert Band, the Florida State Wind Ensemble, and the University of Texas New Music Ensemble. He has received honors from ASCAP, BMI, The Lyra Society, and ISCM-Texas among others. Additionally, his music has been heard at a variety of festivals including the TUTTI Festival, RED NOTE Music Festival, Mizzou New Music International Composers Festival, New Music on the Point, and SEAMUS. He has held residencies at Atlantic Center for the Arts and ACRE.
He earned a B.A. in music from Yale University, an M.M. in composition from the University of Texas at Austin in 2012, a PhD in composition from the University of Pennsylvania in 2017, and M.S. in computer science from Stanford University in 2018. He is currently Assistant Professor of Music Technology and Production at Ursinus College.

Eric Davis is a composer and performer based in Austin, Texas. Eric graduated in May with a Bachelor's in Music Composition from the University of Oklahoma, where he also studied French Horn, piano, organ, and music technology. As a performer, Eric has played works for a wide variety of instruments, including mandolin, bass guitar, steel drums, and live electronics, and has performed in numerous chamber groups and large ensembles. This blend of influences is evident in the fluid compositional style present in his works, which have been performed across 15 U.S. states and 3 countries.

Seth Andrew Davis is a performer, composer, improviser, & electronic musician from the Kansas City area. Davis is involved in the improvised music/free improvisation, experimental, and electronic music scenes in Kansas City. Davis graduated from the University of Missouri-Kansas City Conservatory of Music and Dance in Kansas City, Mo. in 2019 with a BM in Music Composition. Since 2021, Davis has been pursuing his MM in Music Technology from the University of Central-Missouri studying with Dr. Jeff Kaiser, Dr. Eric Honour, & Dr. Travis Garrison.

Wayne DeFehr is a classically trained pianist with the Royal Conservatory of Music. Following music studies at college he began creating sound designs and compositions for live theatre. The variety of themes and moods led him to more experimental sonic work, eventually becoming involved in the lively electroacoustic scene in Edmonton, Canada. Wayne is a long serving board member of Boreal Electroacoustic Music Society (BEAMS).

Dave DeFilippo is an electronic musician, bassist, and researcher focused on experimental theory and practices. Interests include the cognitive theory of improvisation and instruments, electroacoustic improvisation, and musically grounded applications of dynamical systems theory to sound synthesis. Dave has a B.A. in Technocultural Studies from U.C. Davis, worked in research at CNMAT U.C. Berkeley, has a M.A. in Music (Computer Music emphasis) from U.C. San Diego and is currently a Ph.D. candidate at the same university.

Ding Qiancheng received his bachelor degree in composition. Now he is the graduate student of Electronic Music Department of Sichuan Conservatory of Music, and studies electronic music

composition with Prof.Lu Minjie. His works include pieces for vocal, solo instrument, chamber music, acousmatic music and mixed electronic music.

James Dooley is a musician and installation artist based in the UK, who also performs and releases electronic music under the pseudonym "formuls". Primarily working in the medium of sound, his performance and installation works combine interaction design, generative processes, and environmental elements to create emerging sonic forms that traverse the boundary between finely tuned sound and noise. His music explores an amalgamation of ambient drones and glitchy sounds all produced by digital sound synthesis. James has exhibited his projects and works internationally at festivals including: Longyou Grottoes International Festival 2019 (CN), Birmingham Weekender 2019 (UK), Electric Nights 2018 (GR), SPECTRA 2016 (MY), SonADA 2016 (UK). He is currently Lecturer in Music Technology at The Open University.

Enrico Dorigatti is a sound designer and sound artist, especially interested in music, technology, and how they connect. He is an IT specialised technician and holds a BA and an MA in electronic music composition. Currently, he is a PhD student at the University of Portsmouth, pursuing research investigating the ecological potential of circuit bending through sound art. His works—music, multimedia and software—have been presented at numerous national and international venues.

David Dow is a composer, keyboardist, sound designer and educator. He holds a Bachelor of Arts degree in music composition from the University of California, Santa Barbara, and a Master of Arts degree in music composition from San Jose State University in San Jose, California. In addition, he holds a certificate in computer music from the Massachusetts Institute of Technology. As a composer, he has created well over one hundred fifty music compositions in many different styles. His electronic music has been performed several times on the Society for Electro-Acoustic Music in the United States National Conference, the International Computer Music Conference, the Daegu South Korea International Computer Music Festival, The Electronic Music Festival in Stuttgart Germany, the New York City Electronic Music Festival, the Consumer Electronics Show in Las Vegas, Nevada and the Computer Exposition in San Francisco, California Through his recording studio, Aurora Music Productions (www.auroramusicproductions.com), he produces music for composers, theater, dance, computer games and video soundtracks as well as radio and television commercials. Besides performing music professionally as a keyboard player and singer for over forty years, he is a Professor of Music and directs the Music Technology Program at Modesto Junior College in Modesto California.

Charley Draper is a Multimedia Designer & Video Technician working in video design for live events and film production.
He has produced projection designs for companies including Auckland Arts Festival, New Zealand Festival, Toi Whakaari: NZ Drama School, Capital E: National Theatre for Children, Circa Theatre and Footnote Dance company. He has also recently had light works featured in the Prague Quadrennial (Czech Republic) and Tūrama festival.

Alexandros Drymonitis is a sound and new media artist. He is a PhD candidate at the Royal Birmingham Conservatoire doing research on the creation of musical works with the programming language Python. His artistic practice focuses on new techniques utilizing new media such as computer programming, AI, or even older practices, like modular synthesis.
He has collaborated with various artists from different art disciplines, plus several ensembles, either interdisciplinary or music ensembles.
He has taught the guitar at the Music School of Amsterdam and 'Philippos Nakas' Conservatory

in Athens, and electronic music programming at 'Musical Praxis' Conservatory in Athens. He is currently a freelancer in the field of electronic music and multimedia programming, teaching several workshops in various venues and undertaking multimedia programming in various events.

Frédéric Dufeu is Senior Research Fellow in Music and Music Technology at the University of Huddersfield (UK), where he is currently working on Michael Clarke's ERC-funded IRiMaS project (Interactive Research in Music as Sound). He previously worked as Research Assistant on the AHRC-funded TaCEM project (Technology and Creativity in Electroacoustic Music) initiated by Michael Clarke and Peter Manning, with whom he co-authored the book and accompanying software Inside Computer Music (New York, Oxford University Press: 2020).

Rodney DuPlessis is a Canadian composer and programmer exploring intersections of science, nature, technology, and music. In his work, he studies processes and patterns from natural and human-made systems to extract latent musicality and visceral sonic narratives. He incorporates algorithmic and intuitive methods, field recording, sonification, and software development to create electroacoustic and chamber music, museum installations, and network music collaborations. His music has been performed internationally and recognized by prizes such as Musica Nova International Competition (Finalist), Corwin Award for Excellence in Composition (1st prize - Percussion, 1st prize - Solo), and 2020 SEAMUS/ASCAP award (finalist). He has collaborated with new music luminaries such as Los Angeles Percussion Quartet, Formalist Quartet, Hocket, Henrique Portovedo, and Scott Worthington. As a programmer, DuPlessis creates innovative sound processing and synthesis software. In 2020, Duplessis, Curtis Roads, and Jack Kilgore released EmissionControl2, an interactive real-time application for granular synthesis. In 2021, he released QHOSYN, a synthesizer that sonifies a quantum wave function. DuPlessis is dedicated to promoting the presentation of new music and art. He has directed and produced many festivals and concerts, and serves as Programs and Development director of the Nomadic Soundsters art collective. DuPlessis' teachers have included Curtis Roads, Clarence Barlow, João Pedro Oliveira, and Martin Kutnowski. He holds a BA in Music and Psychology, Masters of Arts in Composition, Masters of Science in Media Arts & Technology, and PhD in Composition at UC Santa Barbara.

David Z. Durant (b. 1957, Birmingham, Alabama, U.S.A.) is a Professor of Music at the University of South Alabama where he is the Director of the Music Theory and Technology Program. He joined the faculty of USA in 2003. Durant received his BM and MM from the University of Florida and his DMA from the University of Alabama. His composition teachers have included Andrew Imbrie, Edward Troupin, John D. White, Fred Goossen, Harry Phillips, Marvin Johnson, and James Paul Sain. Durant started creating electroacoustic music in the 1980s and has composed 60 of his 160 compositions in that medium. He is a frequent presenter at ICMC, SEAMUS, and NYCEMF.

Kramer Elwell (B. 1990, USA) is a composer, percussionist, improviser, and sound artist currently based in Santa Barbara, CA. His acoustic and electroacoustic works attempt to create massively rich timbral spaces and soundscapes, spin cryptic and surrealist narratives, and find atypical avenues from which to perform new music. This includes any combination of graphic or multimedia notation, improvisation, computer programming, installation, or interdisciplinary collaboration.

Stewart Engart (b. 1991, he/him) is a Southern California based composer, performer, sound artist, and software engineer working in the fields of experimental electronic music, audiovisual installation, and innovative chamber music. His work explores computer-assisted musical form

and gesture, as well as experimental synthesis techniques.
Stewart recently completed his PhD dissertation titled "Composing in Latent Space: Music Information Retrieval Driven Algorithmic Composition" at the University of California, Santa Barbara where he studied with Clarence Barlow, Joao Pedro Oliveira, Curtis Roads, and Andrew Tholl.

The Munich based flutist **Karina Erhard** mainly works on contemporary chamber music, improvisation and performance.
Her interest in sound lead to a constant growth of instruments and equipment (saxophones, ethnical flutes, guitar pedals). Above that she searches for the contact point and crossover with the other arts.
She studied flute in the Netherlands at the Conservatories of Amsterdam and Utrecht.
With various chamber music groups she played at international festivals amongst others Nuovi Spazi Musicali (I), Music Accord (F), Gaudeamus Muziekweek/NL, Ciclo de Música Contemporánea (E), Ferienkurse für Neue Musik Darmstadt, Goettingen International Handel Festival, aDevantgarde und Münchener Biennale (D). She won prizes such as the 'Gaudeamus Interpreters Competition', Tera de Marez Oyens Prijs.
Numerous composers have dedicated works to her, ranging from pieces for solo flute to chamber music for her ensembles.

Swiss saxophonist **Laurent Estoppey**, the performer, after studying saxophone at the Conservatory of Lausanne, Switzerland, where he received in 1994, a concert license (master of arts soloist) established in Greensboro in 2010, Laurent Estoppey, devoted himself mostly to contemporary music, but performs and teaches classic saxophone repertoire and transcriptions of baroque music. Numerous collaborations with composers have led him to create at least two hundred works. Now his musical activity is divided between written music and improvisation, and it occurs throughout Switzerland, many European countries, but also in Canada, USA, Argentina, Guatemala and South Africa. He works with the following orchestras: Orchestre de la Suisse Romande Orchestra (from 2008 to the present, conducted by Marek Janowski, Kazuki Yamada…), Lausanne Chamber Orchestra (1998 to the present (Christian Zacharias…) Basel Symphony, UBS Verbier Festival Orchestra (1999 James Levine) Timisoara, Orchestra of the State of Lithuania, Lausanne Sinfonietta, NEC - Chaux-de- Fonds-Contrechamps Geneva, Staatskapelle Weimar (2010, Heinz Holliger). Estoppey has founded and developed several chamber music groups including: DILEMME (saxophone / piano with Myriam Migani), ST15 (saxophone / piano with Virginie Falquet) DEGRE21 (saxophone / guitar with Antonio Albanese), 1+1 (duo- concept Anne Gillot, recorders), compagnie CH.AU (set of nine musicians) and the 4TENORS (saxophone quartet with Vincent Daoud, Rico Gubler and Lars Mlekusch). A collaboration with saxophonist Dr.Steve Stusek (professor at UNCG) as well as the foundation of COLLAPSS (Collective for Happy Sounds) in Greensboro are his main activities in the United States.

Marc Evanstein is a composer currently residing in the Portland area. His music has been featured at festivals in the US and internationally, including the Seoul International Computer Music Festival, the International Computer Music Festival, the Atlantic Music Festival, and the Bowdoin International Music Festival, where he won the Composition Contest in 2015. He has collaborated with artists such as Aperture Duo, Ignition Duo, Hocket Duo, Formalist Quartet and LA Percussion Quartet.
A musician and composer since a young age, he pursued his undergraduate degree at Stanford University, where he studied composition with Jarosław Kapuściński and piano with Thomas Schultz. Following up on his interest in computers and interactivity, he then continued on at Stanford with a master's degree in Music, Science and Technology. More recently, Marc was the

recipient of a Chancellor's fellowship at UC Santa Barbara, where he completed a PhD in composition and a master's in Media Arts and Technology, studying composition with Profs. Clarence Barlow, Joel Feigin, and Curtis Roads, as well as piano with Dr. Charles Asche.
In addition to his direct output as a composer, Marc is the developer of SCAMP (Suite for Computer-Assisted Music in Python), and leads workshops on composing music in Python.

Peter Färber, Technical realisation: Piano studies with Eva Sherman and Grazia Wendling at the Lucerne Conservatory. 1992-2000 sound technician at the Schauspielhaus Zurich. From 2000-2005 responsible for lighting, sound and video at the Hochschule Musik und Theater Zurich (HMT), since 2005 research associate at the Institute for Computer Music and Sound Technology (ICST) at the Zurich University of the Arts (ZHdK) and member of the executive board of the Foundation Swiss Centre for Computer Music. 2014 Master Contemporary Arts Practice (CAP) in Music and Media Arts at the HKB Bern, 2016 Master in Research on the Arts (MRA) at the University of Bern.
Active as a composer, sound engineer, concert organizer and software/hardware developer with a focus on electronic music, digital sound synthesis, computer music, live electronics and spatial sound processes. His artistic work includes sound installations for museum exhibitions, works and sound engineering for productions in the independent theatre scene, compositions for instruments / live electronics / fixed-media, performances.
Peter works on electroacoustic settings and the question of a spatial sound aesthetic that places the loudspeaker itself at the center. Standard settings of contemporary sound strategies do not play a role here. Rather, the focus is on media strategies that take the loudspeaker seriously as an independent instrument and mediator.

Iván Ferrer-Orozco (Mexico City, 1976) is a composer and electronic media performer. His music has been performed extensively in festivals and by ensembles from Mexico, Spain, Canada, Argentina, Chile, South Korea, Vietnam, Japan, USA, Germany, Portugal, Italy, and Cyprus. He has been artist in residence in institutions such as: Akademie der Künste Berlin, Schleswig-Holsteinisches Künstlerhaus, Residencia de Estudiantes, Camargo Foundation, MacDowell Colony, Djerassi, CMMAS, Hooyong Performing Arts Centre, ARTos Foundation, Ibermusicas, I-Portonus, Conseil des Arts et Lettres du Québec, etc. As electronic media performer he performs as soloist and as sideman with artists and ensembles from Spain and abroad. In 2019 he was named Member of Sistema Nacional de Creadores de Arte, program of the Mexican government awarded to outstanding artists of all disciplines. He was a member of Neopercusion, Madrid based contemporary ensemble for eight years, currently he is a member of The Experimental Tooth, Vertixe Sonora Ensemble and Synergein Project. Among other awards the International Computer Music Association awarded him the 2021 ICMA Best Music Award.

For **Bradley Fletcher** (b. 1999), the act of being a composer and an artist is an act of at once trying to understand the world before him and telling the world how he feels about it. Apart from music, he is also interested in a wide range of creative and academic subjects, such as painting, ceramics, literature, sociology, history, politics, and philosophy. As a result of this, his pieces are often formed around a musical dialectic, seeking to create a conversation between these interests.
Fletcher is also driven to establish himself as an eclectic composer, as he passionately believes that the next major school of musical thought is eclecticism, with art and information of all kinds being instantly available to everyone. In light of this, he seeks to compose in a wide range of idioms, including post-minimalism, modernism, and sound experimentation.
Fletcher graduated from Ball State with a Bachelor's of Science in sociology with a minor in history in Fall 2021, and is currently applying to study music composition at the graduate level.

Kyle Fogarty is a student reading for a MSc in Robotics and Autonomous Systems at the University of Lincoln. Kyle recently joined the AgriFoRwArdS Centre for Doctoral Training (CDT) and will pursuing further studies at the University of Cambridge.

Luis Fonseca (Brazil, 1974-) is a polyvalent artist; architect, professional Double Bass player, profesor and composer stablished in Madrid. He studied composition by Prof. Sergio Luque and Prof. Alberto Bernal in the CSKG center in Madrid, where he could also assist to open lessons from Alberto Posadas, Mesías Maiguashca, Enrique Tomás, José Manuel Berengher and Michael Beil. These studies were in the electronic field, but after all, learning computer assisted composition as well as algorithmic composition brought him to another way of composing, with or without electronics in his works. He has a PhD personal investigation in the algorithmic composition field in the "Universidad Autónoma de Madrid" by professors José Luis Carles and Sergio Luque, which he finished in 2021 with a Cum Laude mention. He finds himself nowadays developing new ways to generate music algorithmically focusing it on the production of sound through the use of different algorithms, whether acoustically or electronically speaking, as well as the connection to its visual forming graphics and mixing it with other compositional techniques. His music has been played in Spain, Brazil, Germany, Australia, United States, Venezuela, Lithuania, Austria, Switzerland, Italy and México.
Luis Fonseca has several international prizes such as the "Honorable Mention" on the "David Walter International Composition Competition 2016" promoted by the ISB (International Society of Bassists/ USA) for his piece "Mandelbrot Sonata" for Double Bass and Piano; first prize in the 4th International Competition of Choral Composition "Ennio Morricone" 2017 in Florence - Italy for his piece "Hommage a Rothko" for Choir a Capella and also a first prize in the "2018 David Walter International Composition Competition - Double Bass and media category" from the ISB for his piece "homeTown" for Double Bass, video and electronics. His piece "Four random pattern sketches" has received its world première in the Royal Theater in Madrid - Spain (December 2018) and his piece "Sabbath v.2 (2019)" for live video and live electronics has been selected in the Call for scores from the "23rd computer and electronic music days" 2019 promoted by the JIEM - Madrid - Spain and received its world première in the Auditorio 400 at Museo Nacional Centro de Arte Reina Sofía in Madrid in March 2020.
His piece "Re-formed" for piano solo has been recorded by pianist Duncan Gifford in 2021 by label Da_sh recordings.
His compositions are published by Da_sh Editions in Madrid - Spain.

Raphaël Maurice Forment is a PhD student at the Université Jean Monnet in Saint-Etienne. He is studying the art and techniques of live coding from a musicological standpoint, highlighting the intertwined aesthetical, political and technical discourses that brought people from different background and sensibilities to form the contemporary scene of live coding as we know it. Along his research, Raphaël is also teaching computer music and live coding both in an academic and informal context. Raphaël is an active member of the french live coding scene under the nickname "Bubobubobubo", organizing and playing live shows with friends and members of the Parisian Cookie Collective.

Dr Charles Fox researches agricultural robotics, autonomous vehicles, pattern recognition and data. Current projects include the Ibex autonomous hill-farm weed-spraying robot system, human interactions with self-driving cars using game theory, and data science analytics with geographic data. Dr Fox obtained an MA in Computer Science at the University of Cambridge, MSc in Cognitive Science at the University of Edinburgh, and his DPhil in Engineering from the Robotics Research Group at the University of Oxford. He worked as a data-driven high-frequency hedge fund trader in London then as a researcher at the Sheffield Center for Robotics

and as an autonomous vehicle fellow at the Institute for Transport Studies, University of Leeds.

Davíð Brynjar Franzson is a freelancing composer based in Los Angeles.
Projects include an Urban Archive as an English Garden, developed in collaboration with Halla Steinunn Stefansdottir (Nordic Affect), Russell Greenberg (Yarn/Wire), Julia Mogensen, and Matt Barbier (wasteLAnd) with support from a joint Artist Research Residency at Ircam and ZKM; the Negotiation of Context, developed in collaboration with Yarn/Wire--described as "engagingly tactile" by the NY Times, "compelling" by the Wire which selected the release as one of their top 10 modern composition releases of 2014, and as "sonic art that is clearly going places" by Gramophone; the cello concerto on Matter and Materiality, commissioned by the BBC Scottish Symphony Orchestra and the Icelandic National Radio's commissioning fund--described as "strikingly static" by the Guardian; and the Cartography of Time, an ongoing exploration of the experience of time, developed in collaboration with Gnarwhallaby, Vicky Chow (Bang on a Can), Mariel Roberts, Matt Barbier and Weston Olencki (RAGE thrombones), Rusell Greenberg (Yarn|Wire), Matthias Engler, and Ingolfur Vilhjalmsson (Ensemble Adapter). A recent recording of the monodrama longitude was released on Bedroom Community in Fall 2019. It made multiple year-end lists, and was described as "gorgeous and somewhat terrifying in equal measure." by 5:4.
Davíð co-runs Carrier Records--a label for new and experimental music--with Sam Pluta, Katie Young, and Jeff Snyder.

Nicola Fumo Frattegiani is an electroacoustic and audio-visual composer living in Perugia, Italy. His works have been presented at various national and international festivals including ICMC (KR - IT), SCIMF (KR), NYCEMF, ICMC-NYCEMF, New Music Miami Festival ISCM, Electroacoustic Barn Dance, WSU, The 15th International Gothic Association Conference, STUDIO 300, Mise en Music Festival, Earth Day Art Model, 1st International Video Art Festival (USA), SMC (CY - IT), Atemporánea Festival, Foundation Destellos, La Hora Acusmática (AR), Festival Futura, Finale Prix Russolo (FR), Synchresis Festival (ES), Evimus (DE), MUSLAB (BR - MX), Echofluxx (CZ), Audio Mostly, BFE/RMA, Convergence, Noisefloor Festival, SOUND/IMAGE, Altered Images Festival (UK), WOCMAT (TW), ACMC (AU), XIV Festival Internacional de Musica Electroacustica y Electronica Primavera en La Habana (CU), Matera Intermedia, Diffrazioni Firenze Multimedia Festival, XXII CIM, Venice Biennale of Architecture, 9th International FKL symposium on soundscape, Moon in June, Macro Asilo, Corsie Festival, Universo Assisi, Festival Periferico, Segnali, Premio Nazionale delle Arti, Elettronicamente, XIII° International composition competition Città di Udine, Arte Scienza Festival, Chigiana Radioarte, Anamorphsys International Experimental Festival (IT). Author and performer, his research deals with electroacoustic music, sound for images, video, art exhibitions and compositions for theatrical performances.

Rikhardur H. Fridriksson (b. 1960) began his career as a rock musician, and later studied Composition in Reykjavík, New York, Siena and The Hague. His teachers included Atli Heimir Sveinsson, Thorkell Sigurbjörnsson, Elias Tanenbaum, Franco Donatoni and Clarence Barlow. Furthermore he has degrees in History and Classical Guitar performance.
His works have been performed and broadcast in many countries. He has received working grants from the Icelandic government, the DV cultural prize, and a prize at the Bourges sound art competition.
He lives in Reykjavik, composing and teaching Electronic Music, Composition and Music History at Iceland University of the Arts, Kópavogur Music School and Menntaskóli í tónlist.
His music falls into two general categories; he either makes pure electro-acoustic music, working mostly with natural sounds and their movement in space, or he does live improvisations, playing

electric guitar, processed through live electronics. In that field he either appears alone or with the Icelandic Sound Company.
In his spare time he can be caught playing punk rock at various Reykjavik clubs.

Haruyuki FUJII (Architect), Tokyo Institute of Technology, Architectural Design and Planning / Design ScienceBorn in Tokyo in 1959, he studied architecture at Waseda University and began to build computational models of architectural environment design at the school and in the practical fields. Then, he studied philosophy concentrating computational linguistics at Carnegie Mellon University in the U.S. and design computing & cognition with John Gero at the University of Sydney, Australia. Since 1999, he has been a professor at the Department of Architecture and Building Engineering, Tokyo Institute of Technology. He is teaching design theories at Tokyo national University of the Arts and Tokyo Medical and Dental University as well.

Kiyoshi FURUKAWA (Composition / Media Art),Tokyo National University of the Arts,
Born in Tokyo in 1959, he began composing under Yoshiro Irino and moved to Germany after graduating from high school. He studied composition with Isang Yun at the Berlin University of the Arts and with György Ligeti at the Hamburg University of Theater and Music. In 1991, he became a visiting composer at Stanford University in the U.S. He was an artist-in-residence at ZKM (Germany). For the opening of ZKM's new building in 1997, he was commissioned to create and compose a multimedia opera entitled "To the Unborn Gods". Since 2000, he has been a professor at the Department of Intermedia Arts, Tokyo national University of the Arts.

Larry Matthew Gaab is a native of the United States. His works utilize improvisation, composition, and computer generation. His compositions have been selected for music festivals and concerts in the United States, the Americas and in Europe.

Giorgos Gargalas works as a sound artist and performer. Focusing on sound, his work explores the relationship between contemporary music with video art, installation, and performance art.

Composer **Karl F. Gerber** began playing the electric bass autodidactically. He attended musicology lectures as a guest student in 1975 with Riethmüller in Freiburg.
After turning to jazz, he studied double bass with Adelhard Roidinger in Munich. He holds a diploma in physics from the LMU Munich.
As a composer he is self-taught, but attended courses with H. W. Erdmann, Cort Lippe, Robert Rowe, Carola Bauckholt, Götz Tangerding, Alex Grünwald, Joe Haider and Joe Viera.
He performed live algorithmic performances such as a co-improvisation with the University of Michigan Dancers at the 1998 ICMC in Ann Arbor, Michigan, USA.
"Beautiful Numbers" received the award as electronic "Music for Dance" in Bourges; with release on UNESCO CD.
"Stream" was selected by the German Society for Electroacoustic Music for CD7 on Cybele.
Since "Loops" for piano solo, he has also created works in traditional notation without electronics such as "VC3e" for harpsichord four hands. He received commissions for piano, fortepiano and harpsichord.
The self-constructed "experimental violin automaton" was first presented at the Deutsches Museum in Munich 2012. Following an invitation to the Kontakte Festival 2017 at the AdK Berlin, his "computer music without loudspeakers" has also attracted international interest: USA (Boston Berklee College), South Korea, Seoul 2019.
His installation "Violinautomat" was selected by the ISCM for the World Music Days in Tallinn, Estonia. Most recently he received the "Award of Distinction" at Matera Intermedia 2020 in

Matera Italy in the Performance/Sound Art category and the Best Music Award from CMMR Tokyo.

Kosmas Giannoutakis (b. 1985 in Thessaloniki, Greece) studied piano and percussion performance, composition, and computer music in Greece, Germany, and Austria. Currently, he is attending the Ph.D. Electronic Arts program at the Rensselaer Polytechnic Institute, with a focus on experimental, commons-centric modes of music creation with Distributed Ledger Technologies. His works have been presented and received awards at numerous international festivals and conferences.

John Gibson composes electronic music, which he often combines with instrumental soloists or ensembles. He also creates fixed-media audio and audiovisual works that focus on environmental soundscape. His portrait CD, Traces, is available on the Innova label, along with other recordings on the Centaur, Everglade, Innova, and SEAMUS labels. Audiences across the world have heard his music, in venues including the D-22 punk rock club in Beijing, the Palazzo Pisani in Venice, and the U.S. Botanic Garden in Washington, D.C. Presentations of his electroacoustic music include concerts at the Seoul International Computer Music Festival, the Bourges Synthèse Festival in France, the Brazilian Symposium on Computer Music, the Australasian Computer Music Conference, and many ICMC and SEAMUS conferences. Significant awards include a Guggenheim Fellowship, a Charles Ives Scholarship from the American Academy and Institute of Arts and Letters, the Paul Jacobs Memorial Fund Commission from the Tanglewood Music Center, and a residency in the south of France from the Camargo Foundation. He was a Mentoring Artist at the Atlantic Center for the Arts in May 2017. Gibson is associate professor of music and director of the Center for Electronic and Computer Music (cecm.indiana.edu) at the Indiana University Jacobs School of Music.

Reece Godfrey: A Masters by Research student at the University of Lincoln

Matthew Goodheart is a composer, improviser, and sound installation artist who has developed a wide body of work exploring the relationships between performer, instrument, and listener. His diverse creations range from large-scale microtonal compositions to open improvisations to immersive sound installations. With an early career as a free-jazz pianist in the San Francisco Bay Area, he worked closely with such artists as Glenn Spearman, Wadada Leo Smith, Pamela Z, Cecil Taylor, Pauline Oliveros, Rova Saxophone Quartet, and sfSoundGroup. As his career expanded both domestically and internationally, he became compelled by the interrelationship between instrument design, acoustics, and compositional/improvisational constraints. Intrigued by the potential of new technologies, he developed an electroacoustic technique called "reembodied sound" to resonate acoustic instruments so that they sound autonomously, developed primarily at CNMAT at U.C Berkeley where he worked closely with David Wessel and Adrian Freed, and The Computer Music Center at Columbia University. This practice has provided new directions to his work for over a decade, finding its expression in electroacoustic chamber compositions, algorithmically generated improvisation structures, site-specific installations, and binaural fixed-media works. His awards and honors include the Berlin Prize in Music Composition, a Civitella Ranieri Fellowship, and a Fulbright Grant. A lifelong teacher, he is Assistant Professor of Music Composition at Rensselaer Polytechnic Institute.

Dr. Owen Green
I enjoy making soundful systems that breathe and try, playfully, to adapt to their surroundings. Much of what I do involves making such system-compositions as a territory / provocation / instrument for improvising players (usually me plus chums).

Thomas Grill works as a composer and performer of electroacoustic music, as a media artist, technologist and researcher of sound. His artistic work encompasses most varied fields of audible and trans-media art, focusing on loudspeaker-based music, electroacoustic improvisation, as well as installations and interventions.
His education includes studies of technical physics in Linz, of computer music and electronic media and of interactive electronic instruments in Vienna. He earned a doctorate in composition and music theory at the University of Music and Performing Arts, Graz. Post-Doc research followed at the Austrian Research Institute for Artificial Intelligence (OFAI) in the domain of machine listening and learning. He is currently heading the Certificate Program in Electroacoustic and Experimental Music and the project of artistic research "Rotting sounds" at the University of Music and Performing Arts Vienna.
Grill has been awarded with an Honorary Mention of the Prix Ars Electronica, with the Theodor-Körner prize, the Award of Excellence of the Austrian Federal Ministry of Education, Science and Research, the Outstanding Artist Award for Interdisciplinarity (Bonus prize) of the Austrian Federal Chancellery and various work stipends.

Kerry L Hagan is a composer and researcher working in both acoustic and computer media. She develops real-time methods for spatialization and stochastic algorithms for musical practice. Her work endeavours to achieve aesthetic and philosophical aims while taking inspiration from mathematical and natural processes. In this way, each work combines art with science and technology from various domains.
Kerry performs regularly with Miller Puckette as the Higgs whatever, and with John Bowers in the Bowers-Hagan Duo.
As a researcher, Kerry's interests include real-time algorithmic methods for music composition and sound synthesis, spatialization techniques for 3D sounds and electronic/electroacoustic musicology.
In 2010, Kerry led a group of practitioners to form the Irish Sound, Science and Technology Association, where she served as President until 2015.
Currently, Kerry is a Lecturer at the University of Limerick in the Digital Media and Arts Research Centre. She is the Principal Investigator for the Spatialization and Auditory Display Environment (SpADE) and President of the International Computer Music Association.

Jinhao Han(1998),Chinese, a graduate student of the Sichuan Conservatory of Music, Department of Electronic Music. He majored in new media music and coded music. His pieces have been selected by NYCEMF2020 and ICMA2022

Yuki Handa: He is currently studying informatics at the Graduate School of Science and Engineering, Tokyo Denki University. He is conducting research on the relationship between gestures and communication under the guidance of Prof. Harumi Kobayashi.

Takayuki HAMANO (Media Architect / Software Engineering), coton inc. Takayuki Hamano (1985) is an art creator of digital media art born in Tokyo, Japan. He has studied composition, computer music, and digital art creation at the Sonology Department of Kunitachi College of Music in Tokyo. He has studied sonology at the Royal Conservatory in The Hague. He had been a researcher at Japan Science and Technology Agency. He has completed a doctoral course at the Graduate School of Fine Arts at Tokyo University of the Arts. He is currently a chief technology officer at a creative company called coton, contributing to the system development for music and media art creation. He is involved in media and programming education in many art schools as well.

Born in Makassar in 1988, **Patrick Gunawan Hartono** is an Indonesian electroacoustic composer and audiovisual artist. He earned a BMus in Composition (Cum laude) from Rotterdam Conservatory with Minor Study at The Institute of Sonology, an MMus in Sonic Arts from the University of London, Goldsmiths, and a Live Electronic Course from IRCAM, Paris. In 2017 he won the ICMA audience award for his generative audiovisual piece Matrix Studies, the 1st Prize for WOCMAT 2019 International Electroacoustic Music Young Composer Award, and Prix CIME (residency) 2021 for his audiovisual composition 'Parakletos.'
Patrick's art and musical interest are to use technology and scientific approaches as creative tools. He is also interested in 3-D sound spatialisation, analog/digital synthesis, psychoacoustic, and visual music. Most of his works use the sound of Indonesian traditional music instruments, computer-generated sound/images, and field recordings; transformed, rearranged, and modulated by mathematical rules, real-time interaction, and controlled random operations.
His music has been internationally performed at the festival, conference, and venue such as ICMC [2014, 2016, 2017, 2021, 2022], YCMF [2007, 2008, 2010], WOCMAT [2012, 2013, 2019], Sound Bridge Festival [2013, 2020], ZKM [2014, 2015, 2019], IRCAM [2014], NYCEMF [2014, 2022], Sines and Square [2014], ACL [2014], Gaudeamus [2015], Sonorities Festival [2015], ACMC [2020, 2021, 2022], BEAST [2021], CCRMA [2018], KEAMSAC [2021], NIME [2022] etc. Currently, Patrick resides in Melbourne, Australia, to pursue a doctoral degree at the University of Melbourne, where he is actively involved within national/international computer music communities.

Ryogo Hashimoto: He is currently studying informatics at the Graduate School of Science and Engineering, Tokyo Denki University.

Akiko Hatakeyama is a composer/performer of electroacoustic music and intermedia. She explores the boundaries between written music, improvisation, electronics, real-time computer-based interactivity, and visual media. Storytelling, memories, and nature play an important role in Akiko's work, and she most often finds beauty in simplicity. Akiko's research focuses on realizing her ideas of relations between the body and mind into intermedia composition, often in conjunction with building customized instruments/interfaces. It is a form of nonverbal communication with her inner self and with the environment, including the audience. By somatically actuating perceptions with sound, light, and haptic objects, her ideas of relations between the body and mind become embraceable. Her exploration in embodying time – in the form of memories, emotions, and personal experiences – is realized. As a result, the exploration brings therapeutic effects. Sharing this special experience only achievable by creating and performing music is an important part of Akiko's research and teaching. Akiko obtained her B.A. in music from Mills College, M.A. in Experimental Music/Composition at Wesleyan University, where she studied with Alvin, and Ph.D. at Brown University. She is currently an assistant professor at the University of Oregon.

Reika Hattori was born in 1988 in Gifu, Japan. She studied at Tokyo College of Music in Japan with Keiko Harada and Tomiko Koujiba and Motoharu Kawashima and Shinichiro Ikebe. And since winter of 2017 she continues to study in Germany with Prof. Dieter Mack and electronic music with Donny Karsadi at the Musikhochschule Lübeck. She won first place in the 21st Japanese Music Projects Competition. This work (Traitor for violin and 17 strings Koto) was played at the concert in Yokohama, New York, Kyoto and published by "Mother Earth" (http://www.mother-earth-publishing.com). In 2019, her orchestra work (Title:Verführungen) was selected as finalist for the "Saarbrücker Komponistenwerkstatt" Competition and played by Deutsche Radio Philharmonie. She won the first place in Possehl-Wettbewerb Category „Neue musikalische Aufführungskonzepte2021" in her multimedia work (title: Wasser). She mostly deals with the concept of duality. Her oeuvre includes works for solo instruments, chamber

ensembles, orchestras and electroacoustic music, especially live electronics. She is currently studying electronic music composition wirh Prof. Kilian Schwoon at the University of the Arts Bremen.

Jing He. I was born in Hubei, Wuhan, China. I graduated form Showa University of Music, Japan. Now I am teaching composing at Wuhan Conservatory of Music. My main research directions is AI music, algorithm composition, acoustic synthesizing and acousmatic music. This is an experimental work based on the Max / msp platform. It is a continuation of last year's ICMC2019 time series. Time is not static and one-sided. The development process of things cannot be simply divided into independent causal relationships. Therefore, the same time unit in different time periods cannot be counted as the same time. It is like the hour of yesterday and the hour of today are not the same hour. We usually refer to this concept of time as "Duree". This work uses an algorithm written by Max / msp, which tries to break the traditional view of time in music by changing different waveforms within the same time parameter.

Mara Helmuth has been involved with electronic and computer music composition and research for decades. Recent works include Sound Dunes presented in 40 channels at Sonorities 2022, Opening Spaces, for video, Cold Brew, a graphic score for flute, clarinet and fixed media, and Onsen: Hot Springs, for vibraphone and fixed media. She is Professor of Composition at College-Conservatory of Music, University of Cincinnati and director of its Center for Computer Music. Her music has been performed internationally at conferences, festivals and arts spaces, and is on recordings from PARMA, INNOVA, Fundamental Sounds, Centaur (CDCM), Open Space, Electronic Music Foundation and Everglade. She has collaborated with Esther Lamneck, Joseph Van Hassel, Andrea Vos Rochefort, Allen Otte, Rebecca Danard and Rick VanMatre in works for instruments and electronics. Her research has involved wireless sensor networks and music, Internet2 improvisation and performance, and granular synthesis instruments in the RTcmix music programming language. She created installations for the Sino-Nordic Arts Space (Beijing), the Stawa University (Uganda), and a VR installation with students. She curated the Sound and Video Anthology 2019: Women in Computer Music, Computer Music Journal. Her writings also include analyses of works by Annea Lockwood, Carla Scaletti and Barry Truax, and she has written about gender and computer music. She was on the International Computer Music Association board of directors and served as newsletter editor, Vice President for Conferences and President. She holds a D.M.A. from Columbia University, and earlier degrees from the University of Illinois at Urbana-Champaign.

Verena Hentschel (*1984) is an electronic composer and visual artist (painting/visual media) from Germany.
A focal point in her compositions is the engagement with repetition in music and sound. The basis for her compositions are field recordings, the focus lies on the experience of sound and visuals. The compositions vary between rhythmic elements, experimental soundscapes and danceable patterns.
From her paintings and electronic compositions she creates moving, audiovisual worlds which she mixes for several loudspeakers.
Her compositions are presented nationally and internationally, e.g. at the „International Computer Music Conference“ (ICMC) in Santiago de Chile/Chile, „Touching Sounds/Darmstädter Ferienkurse“ in Darmstadt/Germany, „DEGEM 30 @ZKM“ in Karlsruhe/Germany, „New York City Electroacoustic Music Festival“ (NYCEMF) in New York/USA and will be shown as an immersive experience for sound and visuals in the „Zentrum für internationale Lichtkunst“ in Unna/Germany this year.
Bachelor of Music in „Music and Media“ (Visual Music/classical double bass) at IMM/Robert Schumann Hochschule Düsseldorf, Master of Music in „Integrative Composition“ (Electronic

Composition) at ICEM/Folkwang University of the Arts Essen and furthermore three years of painting in self study.

Martin Herman is a composer whose work explores algorithmic music with a particular interest in non-linearity, feedback, bifurcation and emergent form in live performer/computer interaction. Having explored non-linear feedback mappings in his music for some time, his recent work applies these principles to musical form and spatialization of sound in live performance. His acoustic and electronic works have been performed throughout the United States, Canada, Europe and Asia, most recently at the Edinburgh Fringe Festival (2021), Seoul Performing Arts Festival (2020), LaMaMa Theatre New York City (2019), and at conferences such as the 2021 Conference on Technologies for Music Notation and Representation, Hamburg, Germany, and the 2020 International Society for Music Information Retrieval Conference, Montreal, Canada. He has received fellowships, residencies, grants and commissions from the Camargo Foundation, Valparaiso Foundation, the Sanskriti Foundation, National Endowment for the Arts, Trust for Mutual Understanding, and the Fulbright Program. Martin is Professor of Music Composition and Electronic Music in the Bob Cole Conservatory of Music at California State University, Long Beach. He holds degrees from Duke University, University of Pennsylvania, and UC Berkeley.

Jonathan Higgins is a composer and performer based in London whose music focuses on exploring how noise can be utilised as a creative tool. He works across a variety of different media, including fixed electroacoustic music, instrumental music, live electronics and sound installations, as well as performing regularly as an improvisor using a custom setup of hacked CD players. His music has been performed, prized and published nationally and internationally. jphiggins.co.uk

Mike Hodnick is a composer, performer, and software developer from Minneapolis, USA. He is best known for his work with the TidalCycles live coding environment, including over 15 musical works using TidalCycles as a primary live sequencer, and dozens of video tutorials in aid to the TidalCycles user community.
Hodnick's works and performances can be described as nothing less than diverse, including minimal algorithmic sequences, club-centric Algoraves, exploitations of digital and analog synthesis, and meterless sequencing. He has released music on notable computer music labels such as Conditional (Meme Booth, 2019; RISC Chip, 2016), Nada (VR Sunset, 2021; Mesabi Range, 2018), and Gin & Platonic (Deserted / Reclaimed, 2020).
Hodnick received the Minnesota Emerging Composer Award in 2014. He has performed internationally at events such as the Algorithmic Art Assembly (2019), the International Conference on Live Coding (2015, 2016), Algomech Festival (2016, 2017), Northern Spark (2017), and Sound of Stockholm (2017).

Ulf A. S. Holbrook works with sound in a variety of media, including composition, improvisation, electronics, sculpture, installation, text and research. His primary interest is in the representation of space and place through sound, through spatial audio, sonification, field recording and custom software. He holds a PhD in music technology from the University of Oslo. His work is performed and exhibited internationally.

Ji-Yoon Hong Cochlear Implant User.

Yi Lun Huang
Currently studying at the Music Research Institute of National Yang Ming

Chiao Tung University, Major in electronic music, Professor Yu Chung Tseng.Think that in various scenes and people and things, can receive hard-earned inspiration, So these inspirations have become one of the most important materials in creation. Music works have won the 2019 WOCMAT International Youth Electronic Music Creation Honor Award, and were selected for the NYCEMF New York Electronic Music Festival 2020 and International Computer Music Conference 2021and delivered performances.

Yu-Ren Huang was born in 1994, Kaohsiung, Taiwan. He started composing computer music by self-studying on the Internet in 2011. Since 2020, He was studying for MA in Electronic Music and Music Technology at National Yang Ming Chiao Tung University in Taiwan. His acousmatic work has been performed at 2020WOCMAT.

Kyle Hutchins has served as Artist/Teacher of Saxophone at Virginia Tech since 2016. He has performed and taught across Asia, Australia, Europe, North and South America, has premiered over 200 new works for the saxophone, and appears on more than 25 commercial albums to critical acclaim. He is a Yamaha, Légère, and E. Rousseau Performing Artist.

Nick Hwang is a composer, sonic artist, and game designer whose work explores connections in art, technology, and interaction. He is currently an Assistant Professor at the University of Wisconsin at Whitewater in the Media Arts and Game Development program.
His research interests include live electronic/acoustic instrument performances, laptop ensembles, physical/gestural musical controls, interactive musical systems, and game design in musical settings. His on-going research projects include musical controllers, networked musical communication, laptop orchestra development, and distributed performance systems. Nick is a developer of Collab-Hub.io.
Nick's work, music, and installations have been performed and presented at ISEA, NIME, SEAMUS, NYCEMF, ICMC, ATMI, NowNet Arts, Hong Kong New Music Ensemble, Root Signals, MoxSonic, SIGGRAPH Spark, Web Audio Conference, GameSoundConference, International Society of Improvised Music, and International Tuba Euphonium Association. More information at http://NickHwang.com

Jonathan Impett (networked trumpet and electronics) is Director of Research at the Orpheus Institute, Ghent, where he leads the research group Music, Thought and Technology, and Associate Professor at Middlesex University, London. He is active as a composer, trumpet-player, improviser and theorist. His work is concerned with the evolving nature of musical artefacts and practices – the reconfiguration of composition and improvisation, score and code, material and virtual, music creation and musicology. His recent monograph on the musical thought of Luigi Nono is the first comprehensive study of the composer's work; a forthcoming book on Critical Technical Practice considers the musical relevance of AI theorist Philip Agre. He continues to perform with The Orchestra of the Eighteenth Century and The Amsterdam Baroque Orchestra, as well as the experimental chamber ensemble Apartment House. A recent CD of his music was released by Attacca Amsterdam.

In composer **Carl Jacobson**'s work fragments from sources as varied as Ockeghem, Laurie Anderson, and Zimbabwean folk music find their place among morphing drones, pulsing rhythms, and glitchy electronics. With an "always-curious ear for sounds" (K. Kastner, cond.), Carl uses a colorful musical palette with a focus on texture, sound, and quotation to explore themes of place, memory, and history. He has been commissioned by ensembles including the CCM Wind Symphony, loadbang, and the Wheaton Percussion Ensemble. Carl's computer music research focuses on image sonification, and on creating virtual environments for composition. Carl is a current DMA candidate at the University of Cincinnati – College

Conservatory of Music, where he has studied with Mara Helmuth, Michael Fiday, and Ellen Ruth Harrison. Carl serves as a graduate assistant, teaching elective composition lessons and is a co-coordinator of CCM's acoustic new music series, A View from the Edge. He holds an M.M. in composition from UC-CCM and a B.M. in composition from Wheaton College.

Pablo F. Jaramillo-López is a CONACYT research scientist affiliated with the Research Institute for Ecosystems and Sustainability at the National Autonomous University of Mexico. Pablo holds an undergraduate degree in agriculture and animal husbandry from the Army Polytechnic School in Ecuador and a doctorate in biology from the University of Western Ontario in Canada. Pablo did his postdoc at the Research Center for Environmental Geography where he developed a project to restore the soils within the Monarch Butterfly Biosphere Reserve and improve community-based reforestation practices.

Constantin Jopeck (born in Paris, in 1991) is an artist whose practice is research-based and uses film as primary medium. After graduating from the Universities of Rome, Bologna, Strasbourg, Thessaloniki and Nanterre, in Aesthetics and Cinema, European Literature and Postmodern Theater, Constantin Jopeck established himslef as an artist-researcher within the Research Cooperative of the Ecole Supérieure d'Art Clermont Métropole.
In parallel with his artistic practice he founded a residency and a festival "Le dôme" (in France in Centre Region) dedicated to moving image artists. A production residency which has taken, since 2015, the form of a laboratory for production, research and international meetings.

Roxane Kalt, dancer: Roxane is a performer and creator with Movement theatre, acrobatics and dance on the ground and in the air: In addition to years of dance training in ballet and character dance at the Zurich Opera House and participation in an orchestra, Roxane also regularly experienced life and work at Circolino Pipistrello. Since 2007 she has dedicated herself entirely to contemporary dance styles as well as ballet. She did her dance training in Switzerland at the Zurich University of the Arts (DAS of Arts in Contemporary Dance), in Paris and Tel Aviv, among others. From 2010 to 2013 she successfully completed the Bachelor of Arts in Movement Theatre at the Scuola Teatro Dimitri. Since then she has been working as a stage artist and creator. Roxane is interested in the interplay and use of different means of expression as well as the exchange with other artists. She works with movement, acting, comedy, film, language, singing and music.

Upon completing a PhD in electroacoustic composition **Orestis Karamanlis** has been active in composing new music and lecturing in the academia. He has produced a diverse body of sound-art and new media work which is frequently performed in concert venues and urban spaces. His current work focuses on real-time computer music involving acoustic instruments and multi-speaker systems.

Damián Keller is an associate professor of music technology at the Federal University of Acre and the Federal University of Paraíba in Brazil. He is a co-founder of the international research network Ubiquitous Music Group and a founding member of the Amazon Center for Music Research (NAP). He has published over two hundred articles on ubiquitous music and ecologically grounded creative practice in journals on information technology, design, education, philosophy, and the arts. His latest co-edited book is Ubiquitous Music Ecologies (Routledge).

Sarah Keirle is an electroacoustic composer and PhD researcher based in Manchester, UK. She graduated from the University of Manchester in 2017 with a first class MusB (hons) in Music and the P.J. Leonard First Prize for Electroacoustic Composition, and completed an Advanced Diploma in Sound for Film, Games and TV at SSR in 2018. In 2019, she completed a Masters in

Electroacoustic Composition and Interactive Media, with Distinction. Her works have been performed at the ICMC, EASTN-DC, Radio CASo, Reform Radio, BEAST FEaST, MANTIS, ArtHouse Jersey, Diffrazioni Festival, Espacios Sonoros, TAma Festival, Ecos Urbanos, NMNW, REF Festival, BFE/RMA, MeCCSA-PGN, NWCDTP ResConf, and SHETogether. Her works has also been released by Empirica Records (FIXED.wav 2021) and ABLAZE Records (Electronic Masters vol. 8).
In September 2020, Sarah started an AHRC NWCDTP funded PhD in electroacoustic composition at the University of Manchester. Her research focuses on the use of animal sounds within electroacoustic composition to create new sonic means for conservation awareness, public engagement, and nature connection.

Curtis Roads, **Jack Kilgore**, and Rodney DuPlessis created and released EmissionControl2 from the Center for Research in Electronic Art Technology (CREATE) at UC Santa Barbara.

Hyojoo Kim is a Korean composer. She studied music composition at Yonsei University and received her DMA in Music Composition and Master's degree in Digital Media Art and Technology from Michigan State University. She is interested in electro- acoustic and acoustic music. Hyojoo KIm has been teaching a composition in Yonsei University.

Katsuya Kobayashi: He is currently studying informatics at the Graduate School of Science and Engineering, Tokyo Denki University.
Chie Kubota: She is currently studying electronic engineering at the Graduate School of Science and Engineering, Tokyo Denki University. Under the guidance of Prof. Tatsuhiko Arafune, she is conducting research on respiratory measurement in infants and work analysis for nursery teachers.

John C.S. Keston is an award winning composer of electronic, experimental, and instrumental music. His compositions convey a spirit of discovery and exploration through the use of graphic scores, chance and generative techniques, analog and digital synthesis, experimental sound design, signal processing, and performance. His work illustrates unique ways to improvise. Performers are empowered to use their phonomnesis, or sonic imaginations. Originally from the UK, John currently resides in Minneapolis, Minnesota where he is a professor of Digital Media Arts at the University of St Thomas. He founded the sound design resource, AudioCookbook.org, where you will find articles and documentation about his projects and research.
John has appeared at the ISSTA conference in Ireland, Northern Spark, the Weisman Art Museum, the Montreal Jazz Festival, the Walker Art Center, the Eyeo Festival, INST-INT, Echofluxx (Prague), and Moogfest. He has been commissioned by the Walker Art Center to compose music for Merce Cunningham dancers during the Common Time series, and PANIC BY PROXY in remote collaboration with Syrian artist and filmmaker Khaled Alwarea. He composed the music for Parking Ramp Project (2018) for choreographer and Guggenheim fellow Pramila Vasudevan. He has appeared on more than a dozen albums including five solo albums. His recent solo album, Parochial Dissonance (2020) is a series of pieces improvised within sets of rules applied to process, time, texture, and tonality.

Odysseas Klissouras is an architect and artist. His research interests derive from the development of expanded architecture and its infusion to soundscapes and local environments. His work ranges from abstract to material synthesis, from form to sound, from geometry to ametry, from word to movement, from air to rhythm, and from light to concrete mythoplastic topologies. His artistic work has been presented at Haus Kultur der Welt (HKW), Center for Media Karlsruhe (ZKM), Jewish Museum Berlin, and at the local experimental scene of Berlin.

He has lived in Athens since 2018, where he co-founded "oneContinuousLab" a transdisciplinary art-science studio-lab, and "a|tectonics" office and research studio for expanded architecture.

Dr Andrew Knight-Hill is a composer specialising in studio composed works both acousmatic (purely sound based) and audio-visual. His works have been performed extensively across the across the world. He composes with materials captured from the human and natural world, seeking to explore the beauty in everyday objects. He is particularly interested in how these materials are interpreted by audiences, and how these interpretations relate to our experience of the real and the virtual. He is an AHRC Leadership Fellow (Audiovisual Space: Recontextualising Sound Image Media) and Co-Investigator on the AHRC Research Projects – Sonic Palimpsest & Exploring Cultural Diversity in Experimental Sound. He is Senior Lecturer in Sound Design and Music Technology at the University of Greenwich, curator of the Loudspeaker Orchestra Concert Series and SOUND/IMAGE festival and director of the SOUND/IMAGE Research Group.

Tomás Koljatic S. is a Chilean composer. After studying music and mathematics in his native country, he pursued higher studies in composition at the Paris Conservatoire (CNSMDP), where he studied with professors Frédéric Durieux (composition), Claude Ledoux (analysis), Denis Cohen (orchestration), Luis Naón, Tom Mays and Karim Haddad (musical technology and computer music). In parallel, he was a student at IRCAM (Cursus 1). Currently, he is an academic at the Pontificia Universidad Católica de Chile, where he teaches music history and analysis.

Alexandros Kontogeorgakopoulos is an academic, musician and artist, conducting transdisciplinary research and creating work at the intersection of art, science and technology. He has equally a scientific, engineering and musical background which is reflected into the nature of his creative practice and his techno-scientific exploration. After completing his PhD in 2008 in France, he joined Cardiff School of Art and Design (CSAD) at Cardiff Metropolitan University where he is currently Senior Lecturer in Sound and Media Art. In this environment, he got exposed into the language, ideas and materials of visual arts, craft, design and architecture, which he assimilated in his work and thinking. He is currently partner coordinator of the EU funded EASTN-DC European Art Science Technology Network - Digital Creativity project. He is also co-founder of stiwdioEverywhere, an art & design studio that travels around the world following the digital nomads lifestyle, and oneContinuousLab, a transdisciplinary art-science studio-lab based in Athens, Greece.

Gintas K (Gintas Kraptavičius) a Lithuanian sound artist, composer living and working in Lithuania.
Gintas is working in the field of digital experimental and electroacoustic music, making music for films, sound installations. His compositions are based on granular synthesis, live electronic, hard digital computer music, small melodies. Collaborations with sound artists @c, Paulo Raposo, Kouhei Matsunaga, David Ellis and many others. He has released numerous of records on labels such as Cronica, Baskaru, Con-v, Copy for Your Records, Bolt, Creative Sources, Sub Rosa and others.
Since 2011 member of Lithuanian Composers Union. He has presented his works, performed at various international festivals, conferences, symposiums as Transmediale.05, Transmediale.07, ISEA2015, ISSTA2016, IRCAM forum workshop 2017, xCoAx 2018, ICMC2018, ICMC-NYCEMF 2019, NYCEMF 2020, NYCEMF 2021, Ars Electronica Festival 2020.
Artist in residency at DAR 2016, DAR 2011, MoKS 2016.
Winner of the II International Sound-Art Contest Broadcasting Art 2010, Spain.

Winner of The University of South Florida USF New Music Consortium 2019 International Call for Scores in electronic composition category.

Nikki Krumwiede is a composer and pianist currently residing in Moore, Oklahoma. She earned an MM in composition in Spring 2019, and is currently working toward a DMA from the University of Oklahoma where she serves as a graduate assistant to the composition area and directs the New Century improv! Ensemble. She writes a variety of music, from contemporary classical to experimental, electronic, and improvisational.
Nikki's goal is to create music that is engaging for performers and allows for flexibility and interpretation. Much of her music draws upon her experience as an improv performer and asks musicians to create along with her, whether through improvisation, selection of unspecified pitch, or a flexible rhythmic structure. She consciously attempts to incorporate various musical techniques and genres (such as electronic music and improv), as well as her background in writing and literature, into her compositional process in a way that is engaging to a diverse audience.

The music of American composer **Mikel Kuehn** (b. 1967) has been described as having "sensuous phrases... producing an effect of high abstraction turning into decadence," by New York Times critic Paul Griffiths. A 2014 Guggenheim Fellow, he has received awards, grants, and residencies from ASCAP and BMI (Student Composer Awards), the Banff Centre, the Barlow Endowment, the Chicago Symphony Orchestra (First Hearing Prizes), Composers, Inc. (Lee Ettelson Award), the Copland House, the International Destellos Competition on Electroacoustic Music, the Alice M. Ditson Fund at Columbia University, the Flute New Music Consortium, the Fromm Music Foundation at Harvard, the League of Composers/ISCM, the MacDowell Colony, the Ohio Arts Council, the Virginia Center for the Creative Arts, and Yaddo. His works have been commissioned by the Civic Orchestra of Chicago, Ensemble 21, Ensemble Dal Niente, Flexible Music, the International Contemporary Ensemble, violist John Graham, clarinetist Marianne Gythfeldt, cellist Craig Hultgren, guitarist Dan Lippel, Perspectives of New Music, pianist Marilyn Nonken, Selmer Paris, and the Spektral Quartet, among others. Kuehn is Professor of Creative Arts Excellence at Bowling Green State University and received degrees from the Eastman School of Music (PhD, MA) and the University of North Texas (BM). His music can be heard on two New Focus Recordings portrait albums, Object/Shadow (2016) and Entanglements (2022 forthcoming) as well as on ACA Digital, Centaur, Erol, ICMA, MSR Classics, and Perspectives of New Music/Open Space labels. He is the author of the computer music application nGen.

Kuo, Yng-Torng. Based in Taiwan, Taipei.
After starting the creating career of Electronic music since 2018, her works has been presented in the concert at Wocmat2019(TW), SICMF2019, 2020(KR), ICMC-NYCEMF2019(NY), 2021(CL) and it has been published many times in domestic music avenues. Now as a master's degree student in National Yang Ming Chiao Tung University (NYCU), majoring in Electronic music with Prof. Yu-Chung Tseng.

Composer-performer **Oliver Kwapis** (b. 1997) has written orchestral, chamber, vocal and electronic pieces which have been performed and recorded by a diverse range of ensembles and artists, including the Los Angeles Philharmonic (through the LA Phil's Composer Fellowship Program), National Children's Chorus, Wet Ink Ensemble, Calder Quartet, Atlantic Brass Quintet, Jacobs School of Music Concert Orchestra, Oberlin Contemporary Music Ensemble, and pianist Eric Huebner. His work been featured at NSEME, Fresh Inc Festival, June in Buffalo, the Mostly Modern Festival Institute, and the soundSCAPE Composition and Performer Exchange.

Recently, his master's thesis, Dreams of Flight, was selected as a winner of the 70th annual BMI Student Composer Awards as well as the IU Jacobs School of Music's New Voices for Orchestra Competition. His piano work, Approach to Zion, was selected as a finalist for the 2021 ASCAP Foundation Morton Gould Young Composer Awards, and his string sextet, My Mad Dances, was named as a finalist for Delirium Musicum's 2019 Call for Scores and received an Honorable Mention from the Boston New Music Initiative's Fifth Annual Young Composers Competition. He holds a B.Mus. in Composition from the Oberlin Conservatory of Music and an M.Mus. in Composition with a Minor in Electronic Music from Indiana University's Jacobs School of Music. He is currently pursuing a D.M.A. in the Performance of Data-driven Instruments at the University of Oregon's School of Music and Dance under the tutelage of Jeffrey Stolet where he is also a Graduate Employee in the Department of Intermedia Music Technology.

Esther Lamneck, Clarinet and Tárogató

The New York Times calls Esther Lamneck "an astonishing virtuoso". She has appeared as a soloist with major orchestras, with conductors such as Pierre Boulez, with renowned chamber music artists and an international roster of musicians from the new music improvisation scene. A versatile performer and an advocate of contemporary music, she is known for her work with electronic media including interactive arts, movement, dance and improvisation. Ms. Lamneck makes frequent solo appearances on clarinet and the tárogató at music festivals worldwide including ICMC, SEAMUS, NYCEMF, the Diffrazioni Festival etc. Many of her solo and Duo CDs feature improvisation and electronic music and include "Cigar Smoke"; "Tárogató "; "Winds Of The Heart"; "Genoa Sound Cards"; "Stato Liquido" etc. Her latest new music improv. album, "Small Parts of a Garden" is available at https://www.setoladimaiale.net/catalogue/view/SM4420. Computer Music Journal calls her "The consummate improvisor."

Recent release, "Sky Rings" for clarinet and electronic music on Neuma Records has received rave reviews: "Surrealistically Captivating Electronic Solo Clarinet Sounds from Esther Lamneck" New York Music Daily; "Esther Lamneck has fascinating chops and ideas" jazzweekly.com; OPDUVAL "The music on Sky Rings contains depth and tension and sounds adventurous. A beautiful Album."

Esther Lamneck has long been at the center of adventurous uses of the clarinet, not to mention the Hungarian Tárogató. The New York Times calls her "an astonishing virtuoso." She has appeared as a soloist with major orchestras, with conductors such as Pierre Boulez, and with renowned chamber music artists and music improvisors throughout the world. A versatile performer and an advocate of contemporary music, she is known for her work with electronic media including interactive arts, movement, dance, and improvisation.

Ms. Lamneck maintains an active solo career. She is a frequent performer at international music festivals and presents Master Classes in Universities and Conservatories around the world. Her collaborations with many distinguished composers of our time, have led to hundreds of new compositions in many genres including works for the clarinet, tárogató, and ensemble.

Esther Lamneck is known for her performances on the Hungarian Tárogató, a single reed woodwind instrument with a hauntingly beautiful sound. Its aural tradition has greatly influenced her performance and has led her to work with composers who are creating sound environments for improvisation. Many of her Tárogató albums are dedicated to this work.

Dr. Lamneck received her B.M., M.M., and Doctoral degrees from the Juilliard School of Music. Dr. Lamneck served as Program Director of Woodwind Studies and the Clarinet Studio at New York University for more than three decades and was artistic director of the NYU New Music and Dance Ensemble. Dr. Lamneck has worked together with choreographer Douglas Dunn and Alfonso Belfiore for many years creating multimedia productions for festivals in the U.S. and Italy.

An internationally renowned recording artist, she has received rave reviews for her albums and

has releases on Amirani Records, Bridge Records, Capstone, Centaur, Cero records, CRI, EMF, Innova, Music and Arts, Neuma Records, Opus One, SEAMUS, SkyDeck Music, Romeo, New World Records, and Parma.
"Quanti di luce e suono" has been designed by Alfonso Belfiore to allow me to create a sonic and visual composition during live realtime performance on my Tárogató.

Peter Van Zandt Lane is an American composer of acoustic and electroacoustic music, whose unique musical style draws from his eclectic musical background in genres ranging from classical, Renaissance music, avant-garde electronic music, electronic dance music, folk, and progressive rock. When awarded the Charles Ives Fellowship in composition, the American Academy of Arts and Letters noted "at every turn, his propulsive, incisive work is beautifully and confidently made. . . Lane's music is as inviting as it is sophisticated." Peter has held artist fellowships at Copland House, Composers Now, Yaddo, and MacDowell Colony. Recent works include Radix Tyrannis, a concerto for Joseph Alessi commissioned by American Chamber Winds, Piano Quartet: The Longitude Problem commissioned by the Atlanta Chamber Players, and Chamber Symphony commissioned by the Barlow Endowment for EQ Ensemble (Boston). His concert music –in particular his works for wind ensembles and his collaborations in contemporary dance– have accumulated hundreds of performances across six continents. His electroacoustic ballet, HackPolitik, was a New York Times Critic's Pick, praised for "exploring anarchy and activism in a refreshingly relevant way." Peter holds degrees from Brandeis University and the University of Miami Frost School of Music, and is currently Associate Professor of Composition at the University of Georgia Hugh Hodgson School of Music in Athens, Georgia.

Prof. Victor Lazzarini is a graduate of the Universidade Estadual de Campinas (UNICAMP) in Brazil, where he was awarded a Bachelor of Music in Composition. He completed his doctorate at the University of Nottingham, UK, where he received the Heyman scholarship for research progress and the Hallward composition prize for a large-scale work, Magnificat. His interests include musical signal processing and sound synthesis; computer music languages; electroacoustic and instrumental composition. Dr Lazzarini received the NUI New Researcher Award in 2002 and the Ireland Canada University Foundation scholarship in 2006. He has authored over one hundred articles in peer-reviewed publications in his various specialist research areas. He is the author of Aulib, an object-oriented library for audio signal processing, and is one of the project leaders for the Csound sound and music programming system.

Sylvain Le Beux holds an electronics and signal processing engineering degree from CPE Lyon, obtained in 2004, and a PhD from Université Paris-Saclay, obtained in 2009, focusing on Control of Speech and Singing Synthesis Expressivity. He has been a live coding practitioner since the mid-2010's and a modular synthesizer enthusiast since around the same time. He is now employed as a Music Data Scientist at LANDR Audio Inc. since 2018, working on the creation of novel systems for music creation and production, through the help of machine learning.

Steven Lewis is a drummer, technologist, and multimedia artist. His creative work and scholarly research has been accepted for presentation at the New York City Electro-Acoustic Music Festival (NYCEMF), The International Computer Music Conference (ICMC), The Society for Electro-Acoustic Music in the United States (SEAMUS), and GameSoundCon. His current focus is in deriving methods for constructing computer mediated systems that facilitate live sound processing and real-time improvisation between virtual avatars and their human counterparts within immersive environments.

Li Gengyu (1996),Chinese, a graduate student of the Sichuan Conservatory of Music, Department of Electronic Music.

Shuoyi Li, is an undergraduate student majored in Electronic Music at Electronic Music Department of Sichuan Conservatory of Music (SCCM) in China. Her composition focus on acousmatic music and live electronic music. Her works were shortlisted for the 2020 New York City Electronic Music Festival and the 2020 ICMC, won the second and third prizes given by the 2020 and 2019 China University Student Computer Design Contest, won the WOCMAT 2020 Phil Winsor International Youth Computer Music Competition Award and were included in the WOCMAT 2020 agenda. Her major works include Gene Code, Eclosion, Sun Era, Ice Dance.

Award winning composer **Tao Li** was born and raised in Beijing, China and currently based in Eugene, Oregon working on her second Doctoral degree in Intermedia Music Technology at the University of Oregon. The philosophy, literature, and spirituality of the ancient East play a formative role in the aesthetic of Tao's work. Her music consists of vivid soundscapes, colorful timbres, and interdisciplinary elements that often lead her audiences on a multi-dimensional journey full of imagination. As an Asian female musician, Tao is devoted to promoting gender equity and cultural diversity through her music as well as through collaboration with other artists.
Tao's music has been performed at concerts and music festivals throughout the world including China, Japan, Korea, Australia, Ireland, Ukraine, and the U.S.A. Her primary interests include acoustic and electroacoustic composition, performance practices, and analysis of compositional techniques, aesthetics, and intercultural dialogues.

Yunpeng Li
Shuyu Lin is a doctoral student and an associate instructor in the composition department at Indiana University, Jacobs school of music. She earned a B.M. in Composition from the Shanghai Conservatory of Music in 2018, studying with Daqun Jia and Deqing Wen. She later earned an M.M. in Composition from the Indiana University, Jacobs school of music. Her teachers there included David Dzubay, Aaron Travers, and Eugene O'Brien. For electronic music, She studies with Jeffrey Hass, John Gibson, and Chi Wang.
Shuyu Lin works both in electronic music and acoustic composition. Her electronic music has been played in the festivals such as NYCEMF, WOCMAT, and MUSICACOUSTICA-BEIJING, ICMC etc; her acoustic music has been featured in venues and festivals, such as in China, the United States, Europe and has been performed by groups, such as Shanghai Kun Opera, Shanghai Philharmonic Orchestra, Ukraine Philharmonic Orchestra, Moscow Contemporary Music Ensemble, and IU New Music Ensemble, etc.

A tech-savvy composer, **Zoe (Yi-Cheng) Lin** earned her DMA degree in music composition from the University of Wisconsin-Madison, with a focus on technology and music theories, programming, and research.
Her multidisciplinary musical work includes the music, sound effects, and 3D immersive mixing of the VR film "Diving into Siraya;" the VR app "VArt Journey;" the algorithmic composition within the app titled "The Forest Breath;" and the algorithmic music parts of the sound and light installation "The Image of the Light Score," a part of the permanent outdoor exhibition at The Taiwan Music Institute.
The VR film "Diving into Siraya" with her music composition has been exhibited at the internationally famous film festival BIFAN in Korea and Immersive Pavilion at ACM Siggraph, United States in 2021, and her multi-media work for solo saxophone, piano, and electroacoustic music "Journey into the World of Dimensions" which is the first contemporary music with VR

scene in Taiwan (possibly in Asia or the world in 2016), has been performed at World Saxophone Congress 2018, and other countries, such as Germany, UK, Japan, Hong Kong, and Taiwan.
Her research includes algorithmic composition, reinforcement learning, neural networks (especially NLP), Unity 3D, and VR development. Her music pushes the boundary of contemporary musical aesthetics and media. She is presently experimenting with auditory-visual synesthesia in electroacoustic music compositions and developing new immersive mixing techniques in binaural format.
Zoe Lin has worked as Chief Music Officer at AMPai Music in charge of the AI music compositional system. In academia, she is one of the course designers of the national project "/PLUS: Programming Learning for University Students." Currently, Zoe Lin is teaching"Learning Programming for Music at National Taiwan Normal University, and music composition at Fu-Jen Catholic University in Taiwan. She is the founder of Interval Studio and focuses on working on any project or online/offline exhibition relating to programming and contemporary music. She has built a four-voice harmony AI generating system, and a 16th century, two-voice counterpoint AI generating system, and a metaverse WebXR online 3D music exhibition event.

Liu Jiayue (1998),Chinese, a graduate student of the Sichuan Conservatory of Music, Department of Electronic Music. He previously spoke at EMSAN2021

Longyu Liu: Graduate student of Electronic Music Department of Sichuan Conservatory of Music

Sebastian Löbbers is a researcher, software developer and musician currently pursuing a PhD at the Centre for Digital Music at Queen Mary University of London. His work explores how cross-modal associations between sounds and shapes can be used for synthesis control. Besides research, he develops interactive software and artworks and composes music for contemporary dance, film and video games. His works have been staged and exhibited internationally in galleries, performance halls and music venues. Recent projects have been displayed at the Edinburgh Science Festival, Ars Electronica and the WeSA Festival.

Luo Chao is a full-time teacher works in the Music Department of Hubei University of Science and Technology. Luo got his Master's degree in Computer Music Composition from the Composition Department of the Wuhan Conservatory of Music. Luo participated The Shanghai International Electroacoustic Music Week and MUSICACOUSTICA-BEIJING, and won Excellence Award in Group B of the 12th and 13th MUSICACOUSTICA-BEIJING. In 2021, the work Ancient and Modern Sound created by Luo's students won the first prize in Video Music Group of The 14th China College Student Computer Design Competition.

Frank Lyons is Professor of Music and Associate Dean of Research and Impact in Arts, Humanities and Social Sciences at Ulster University. He has developed an international profile as a composer and researcher with over 150 performances and exhibitions of his works having been given in China, Japan, Australia, South Africa, the US, Europe, the UK and Ireland and broadcast on BBC, RTE, NPR and ABCFM by some of the world's leading soloists and ensembles. In 2010 he was awarded the Japanese Agency of Cultural Affairs Media Art Prize with media artist Masaki Fujihata for their interactive installation piece Simultaneous Echoes which has been exhibited in Canada, Germany, Japan and Poland. His intermedia piece The River Still Sings, co-commissioned by the City of London Festival and Derry~Londonderry City of Culture 2013, was premiered by the Fidelio Trio in June 2013. The River Still Sings features a newly commissioned poem by Seamus Deane, narration by James Nesbitt and video by Paul

Moore. His groundbreaking piece, NonZeroSum for inclusive ensemble was performed across Europe in 2017 to widespread acclaim and was showcased in a multi-site networked performance in March 2019.Frank recently co-led the successful Future Screens NI bid to AHRC Creative Industries Clusters programme which secured funding of £13million to support the development of creative industries in Northern Ireland.

Wenbin Lyu is a Cincinnati-based Chinese composer and guitarist. The composition written by Wenbin Lyu combines contemporary western techniques with ancient oriental culture. He seeks inspiration from nature, science, and video games.
Lyu has received fellowships from Tanglewood Music Center, Cabrillo Festival Composers Workshop, and Britten-Pears Young Artist Programme. Lyu's works have been performed at many events, including ICMC, EMM, NYCEMF, TUTTI, Alba, SPLICE, among others. His music has been performed by Beijing Symphony, Tianjin Symphony, Fifth House Ensemble, Del Sol Quartet, icarus Quartet, and Transient Canvas. Based on his outstanding academic performance, he was honored to receive the China National Scholarship in 2016 and Donald Martino Award for Excellence in Composition in 2020. Lyu is the recipient of the 2021 ASCAP Young Composer Awards. Two VR movies he composed premiered at the Cannes International Film Festival in 2016. Lyu serves as a composer-in-residence at HAcappella based at Harvard University, and the all-female musician group New Downbeat in Cincinnati.
Lyu received his degrees from China Conservatory (BA) and New England Conservatory (MM), and he is currently pursuing a Doctorate at Cincinnati-College Conservatory.

Rob Mackay is an award-winning composer, sound artist and performer. Recent projects have moved towards a cross-disciplinary approach, including geology, soundscape ecology, theatre, audiovisual installation work, and human-computer interaction. His work has been performed in 18 countries (including several performances on BBC Radio 3, BBC Radio 1, BBC Radio 6, and Radio France), and a number of his pieces have received international awards (Bourges (1997 and 2001), EAR (1999), La Muse en Circuit (2007)). He has held composer residencies at Slovak Radio (Bratislava), La Muse en Circuit (Paris), the Tyrone Guthrie Arts Centre (Ireland), Habitación del Ruido (Mexico City), and CMMAS (Morelia).

Thor Magnusson is a Professor in Future Music at the University of Sussex and a Research Professor at the Iceland University of the Arts. His work focusses on the impact of digital technologies on musical creativity, explored equally through practice (software development, composition, performance), theory (publications, lecturing, talks) and education (teaching, workshops, tutorials). Magnusson's research is underpinned by the philosophy of technology and cognitive science, exploring issues of embodiment, artificial intelligence, and compositional constraints in digital musical systems as practiced by musicians in concrete situations. He is the co-founder of ixi audio and he has developed audio software and systems of generative music composition, written computer music tutorials, and created three musical live coding environments.
During his period as Arts and Humanities Research Council Leadership Fellow, on a project that involved organising conferences and symposia on new musical technologies, he wrote a monograph called Sonic Writing: The Technologies of Material, Symbolic and Signal Inscriptions, published by Bloomsbury Academic. By exploring how contemporary music technologies trace their ancestry to previous forms of instruments and media, including symbolic musical notation, the book builds theoretical foundations for the study of creative AI and machine learning in future music.
Current research involves developing machine learning for creative coding as part of the MIMIC project, of which the Sussex team has recently launched the Sema system for developing new live

coding languages for machine learning. Magnusson is also running the 5-year ERC-funded Intelligent Instruments project at the Iceland University of the Arts.

Peter Manning (1948-2022) was Emeritus Professor of Music at Durham University (UK). His primary research interests were the history and development of electronic and computer music and the associated technologies, his associated publications covering key aspects of their evolution from the early experimental years prior to 1950s to the most recent years. He was the author of Electronic and Computer Music (New York, Oxford University Press: 1985, 4th ed. 2013) and co-author of Inside Computer Music (OUP 2020).

Dr. Brona Martin is an electroacoustic composer and sound artist from Banagher, Co. Offaly, Ireland. Her compositions explore narrative in electroacoustic music, acoustic ecology and spatialisation techniques through the creation of metaphorical and real-world representations of soundscapes. Brona's portfolio of works explore the layers and textures of sounds that contribute to the overall sonic-makeup of specific places both real and imaginary. Her research also explores ways in which creative music technology can be more inclusive and diverse through the facilitation of community engagement projects. She is currently exploring ways in which different media are being used to bring soundscape studies into the wider community through VR projects, smart phone applications and streaming technologies.Her works have been performed internationally. She has been guest composer at EMS, Stockholm and Associate Artist in Residence at Atlantic Centre for the Arts, Florida.Brona is currently a Research Associate at the University of Kent, on the AHRC funded project, A Sonic Palimpsest: Revisiting Chatham Historic Dockyards. She is also a member of the SOUND/IMAGE Research group at the University of Greenwich.

Anthony T. Marasco is an Assistant Professor of Music Technology and Composition at the University of Texas Rio Grande Valley. As a composer and sound artist, his works take influence from the aesthetics of today's Digimodernist culture, exploring the relationships between the eccentric and the everyday, the strict and the indeterminate, and the retro and the contemporary. His works and research have been featured at festivals such as New Interfaces for Musical Expression (NIME), the Web Audio Conference, the Toronto International Electroacoustic Symposium, the Society for Electro-Acoustic Music in the U.S. (SEAMUS), Electroacoustic Barn Dance, New York City Electroacoustic Music Festival, the International Computer Music Conference (ICMC), the National Student Electronic Music Event (NSEME), Mise-En Festival, Montreal Contemporary Music Lab, Electric LaTex, and the Sound, Image and Interaction Design Symposium (SIIDS). His research focuses on web audio, hardware hacking, and creating hardware and software tools for networked music performance practices.
Anthony earned his Ph.D. in Experimental Music & Digital Media at Louisiana State University. His dissertation research centered on extending mediated and networked performance techniques to circuit-bent readymade devices through the creation of a hardware/software framework called Bendit_I/O. He is a co-developer of Collab-Hub.io along with Nick Hwang and Eric Sheffield. More information about his compositions and research can be found at www.atmarasco.com.

Takumi Mashita: He is currently studying informatics at the Graduate School of Science and Engineering, Tokyo Denki University. Under the guidance of Prof. Shibayama, he is designing an automatic generative model of electroacoustic music.

Kiko Matsuhashi is a musicologist and violinist. She received a BA, a MA, and a PhD in historical musicology from the Tokyo University of the Arts. She was a visiting researcher at Yale Institute of Sacred Music in Winter 2018. In addition to performance activities as a violinist,

she conduct research into Japan's Catholic hymnology and the crossing of confessional boundaries in Dresden and Leipzig in the 18th century viewed from a standpoint of academic intersection of musicology and theology. She is currently Research Assistant at the Tokyo University of the Arts and Lecturer at J.F. Oberlin University in Tokyo, Japan.

Dariusz Mazurowski is a Polish electroacoustic music composer, producer and performer born and residing in Gdansk. While the majority of his compositional activity has focused on acousmatic works, he has also composed instrumental music in conjunction with electronics, audio installations and improvised electroacoustic music. His works combine analog instruments with the sonic potential of digital technology and computers, i.e., synthesized sounds with processed microphone recordings (concrete sounds) and samples. He has performed in Europe, North America, South America and Asia. Recent performances include : Audio Art (Krakow 2012 – 2018), MUSICACOUSTICA (Beijing 2012, 2018), Resonance (Krakow 2013), ohrenhoch der Geräuschladen (Berlin 2012, 2014), Echofluxx14 (Prague 2014), LEMESG (Saint Petersburg 2014), Music for No Tape / ERARTA (Saint Petersburg 2014), ICMC / SMC (Athens 2014), Cross-Art 2015 (Saint Petersburg 2015), CIME 2015 (Lisbon), MUSLAB 2015 (Buenos Aires), NYCEMF 2016 (New York), Visiones Sonoras 2016 (Morelia), MUSLAB 2016 (Mexico), NYCEMF 2017 (New York), TIES 2017 (Toronto), CIME 2017 (Moscow), the Brussels Electronic Marathon 2017, Screen&Sound 2017 (Krakow), MUSLAB 2017 (Mexico), Festival de Arte Nuevo 2017 (Chihuahua, Mexico), Vox Electronica 2018 (Lviv), EM-VISIA 2018 (Kyiv), Electroacoustic Spring 2018 (Rethymnon, Crete), NYCEMF 2018 (New York), digitIZMir / 4 (Izmir), IV Accordion Festival (Krakow), Screen&Sound 2018 (Krakow), ICMC / NYCEMF 2019 (New York), Approaches 2019 (Gdansk), Acousmonium / CIME 2019 (Krakow), Electroacústica del mundo: Polonia 2019 (Mexico), NYCEMF 2020 (online), CIME 2020 (online), digitIZMir 6 (online edition), Audio Art 2020 (online), NYCEMF 2021 (online), ICMC 2021 (Santiago, Chile), Musiques Démesurées 2021 (Clermont-Ferrand, France) and others.

Composer, programmer and guitarist **Kieran McAuliffe** investigates the interaction between personality and music in a variety of settings ranging from completely notated to free improvisational. Asa composer and/or performer, Kieran has worked with artists such as Billy Martin(of Medeski Martin and Wood), Kiyoshi Kitagawa, Andy Milne, Ensemble Decipher, Unheard-of Ensemble, and the NYJW Saxophone Quartet(led by Marc Momaas). He has performed and/or had his music performed at major venues and festivals including the Blue Note NYC, the Apollo Theatre, The Stone, and Bern Jazz Festival. Kieran is currently pursuing a DMA in composition at the University of Cincinnati where he studies with Mara Helmuth.

Adam McCartney works as a composer and a software developer. His interests focus on notated music and various forms of modular synthesis.He studied music at University College Cork and later earned a masters in music composition at the University of Music and Performing Arts, Graz. He spent a number of years working as an apprentice piano maker and after discovering his lack of skill or talent for woodwork, he reverted to hacking on computers. Adam really enjoys collaborating with other musicians and ensembles like Longleash (a piano trio), Klangforum Wien, Crash Ensemble and airborne Extended. Some of his artistic work has been generously supported by the Austrian Federal Ministry of Arts, the Arts Council of Ireland, the City of Vienna and others.

Robert McClure's music attempts to discover beauty in unconventional places using non-traditional means. His work has been featured at festivals including NYCEMF, Beijing Modern Music Festival, ISCM, TIES, SEAMUS, and ICMC.
His works may be found through ADJ·ective New Music, Bachovich Music Publications, Resolute Music Publications, and Tapspace Publications as well as on ABLAZE, Albany, and

New Focus Record labels.
Robert received his doctorate from Rice University's Shepherd School of Music. Robert has previously held positions at the Shanghai Conservatory of Music and Soochow University in Suzhou, China. He serves as Assistant Professor of Composition/Theory at Ohio University.

Grace McEllroy (b. 2000 Texas, USA) is a multidisciplinary artist working primarily in sound. Her audio storytelling challenges listener's perceptions of real world sounds and their origins. McEllroy enhances her audio art with supplemental writings and models. For each story, McEllroy mixes the old with the new, the expected becomes twisted, whether it be an original script fashioned into a child's rhyme scheme or a classic poem reinvented. Her 3D-printed audio samples challenges audiences to explore audio with a different sense: touch. To feel sound as if it were a solid being, to try and match once more the origin to the physical.
McEllroy completed her BA in Digital Arts in 2022 at Stetson University in DeLand, FL. She was the recipient of a 2020 SURE Grant from Stetson, and completed research for Dr. Nathan Wolek involving 3D-printed audio classroom manipulatives. McEllroy also worked as an Activity Assistant for Young Sound Seekers, a program designed to teach low-sighted children about audio. Young Sound Seekers is a collaboration between Atlantic Center for the Arts, the National Parks Service, and Stetson University.

Andy McFarlane composes acoustic and electronic music using a range of modern and historical styles to portray themes of joy, vigor, mindfulness, and hope. He's written for a wide array of talent from the New York Philharmonic Principal Brass Quintet to the Dayton Philharmonic Youth Orchestra. Andy is a doctoral student at the University of Cincinnati's College-Conservatory of Music from which he earned his Master of Music in Composition.

Alex McLean is a researcher based in Sheffield UK, working on "algorithmic patterns" including in music, textiles and dance. He has been working professionally in creative technology since the year 2000, including as live coding musician and software artist, crowdfunded free/open source developer, festival curator/producer, and through research fellowships. Alex created the popular free/open source live coding environment TidalCycles, and co-founded the TOPLAP live coding and Algorave movements, and the AlgoMech festival of algorithmic and mechanical movement. He also co-edited the Oxford Handbook on Algorithmic Music, and co-authored Live Coding: A User's Manual, forthcoming on MIT Press. He now holds a UKRI Future Leaders Fellowship, hosted by nonprofit independent lab Then Try This.

Scott L. Miller is an American composer of 'high adventure avant garde music of the best sort' (Classical-Modern Music Review). Best known for his electroacoustic chamber music and ecosystemic performance pieces, his music is characterized by collaborative approaches to composition and performer/computer improvisation. Recent work experiments with AR/VR applications in live performance. Miller is a three time McKnight Composer Fellow, Fulbright scholar, and recipient of the Hellervik Prize. Recordings are available on New Focus Recordings, Innova, and other labels, many featuring his long-time collaborators, the new music ensemble Zeitgeist. His music is published by the American Composers Alliance, Tetractys, and Jeanné. A Professor of Music at St. Cloud State University, Minnesota, he teaches composition, electroacoustic music and theory. He is Past-President (2014-18) of the Society for Electro-Acoustic Music in the U.S. (SEAMUS) and presently serves as Director of SEAMUS Records.

Damian Mills is a PhD candidate and ember of the Performance without Barriers research group at Queen's University Belfast. He comes to research from having engaged in community music making since 1994. He has been a lead associate with Drake Music Northern Ireland, partners in the Collaborative Studentship Award alongside the Department of the Economy

Northern Ireland. Drake Music NI are a charity who provide access to independent music making for children and adults with and without disabilities.

Mikako Mizuno: Composer, musicologist, and Professor of Nagoya City University. Graduated from Tokyo University with the thesis concerning Adorno's music aesthetics. Master degree for composition. Doctoral degree of Engineering with the thesis titled <Space Concept in the Contemporary Music>.
Her pieces were performed in France (Bourges, Paris) Austria(Salzburg), Hungary(Budapest), Germany(GEDOK), Italy(Venice, Alba, Treviso, Udine) Republic of Moldova (Ars Poetica), ISEA2000 and 2002, ISCM2003 and 2010, EMS2010 Changhai, Musicacoustica2010 (Beijing), ACMP2011, 2012, 2013, 2016 , WOCMAT2013, ICMC2017,2018,2019, NIME2021 and in several cities in Japan. Prize of Ars Poetica, Japan-France contemporary music contest, Japan Foundation for Orchestral Music, Aichi Art Prize, Suntory Saji-Keizo prize and so on. Many writings and articles were published, including Terminology of the French Philosophy(2017), Remoteness and Compensation in Electroacoustic Music (2016), Japanese Composers in GRM before 1970 (2016), The History of Japanese Contemporary Music After WW Ⅱ (2006).
She is now the president of JSEM (Japanese Society of Electronic Music), a steering member of JSSA (Japanese Society of Sonic Arts) and DRA (Design Research Association), directional member of Nagoya Philharmonic Orchestra and Aichi International Art Festival, and board member of ICMA. Recent works include; Au-delà de l'azur for sho and cello(2020), Diastema for two remote pianos(2020), Diastema2 for a percussionist and network(2021), Parva naturalia for grand orchestra(2021).

Barry Moon is an Associate Professor in the Interdisciplinary Arts and Performance program at ASU West in sunny Arizona. He is an interdisciplinary artist working in sound, video, and technology whose creative work has been performed and presented at various conferences and festivals throughout the world. Much of his work focuses on interactions between performers and technology. Barry also performs as a guitarist in experimental music ensembles, including the duo Pincushioned with percussionist Doug Nottingham. Pincushioned have been performing live since 2010, and their first recorded works can be heard on the album "Fragile" available on most streaming services.

Dr Ted Moore
Ted Moore is a composer, improviser, intermedia artist, and educator living in the UK. He holds a PhD in Music Composition from the University of Chicago. His work focuses on fusing the sonic, visual, physical, and acoustic aspects of performance and sound, often through the integration of technology.

Bethan Moncur is a student reading for a MSc in Robotics and Autonomous Systems at the University of Lincoln. Bethan recently joined the AgriFoRwArdS Centre for Doctoral Training (CDT) and will pursuing further studies at the University of Cambridge.

Timothy Moyers Jr. is a composer and audio-visual artist originally from Chicago. He is currently an Assistant Professor of Music Theory and Composition at the University of Kentucky and supervises the Electroacoustic Music Studio. Prior to joining the University of Kentucky, Timothy was an Assistant Professor in the Department of Human Centered Design at IIIT-D (Indraprastha Institute of Information Technology), Delhi, India where he was the Founder & Director of ILIAD, Interdisciplinary Lab for Interactive Audiovisual Development, and GDD Lab, Game Design and Development Lab. He completed his PhD in Electroacoustic Composition from the University of Birmingham (England), an MM in New Media Technology

from Northern Illinois University (USA), a BA in Jazz Performance and a BA in Philosophy from North Central College (USA).

Yunze Mu is a sound artist and music programmer based in Cincinnati, Ohio. He is currently pursuing a DMA (Doctor of Musical Arts) in Composition at the College-Conservatory of Music, the University of Cincinnati where he studies computer music with Mara Helmuth and teaches introductory courses in electronic music. Mu holds a bachelor's degree in music composition from Central Conservatory of Music. His music, paper, and installation have been performed at numerous events and conferences such as ICMC, NIME, SEAMUS, NYC Electronic Music Festival, and venues in China, Poland, France, the United States, and Korea.

Christon Nada is a Ph.D. Student at the Technical University of Ilmenau under Prof. Karlheinz Brandenburg's supervision and actively collaborating with the Semantic Music Technology group at Fraunhofer IDMT institute. Christon's research mainly focuses on applied research in music information retrieval.

Tsuzuki Nagai: He is currently studying informatics at the Graduate School of Science and Engineering, Tokyo Denki University.

Jonathan Nangle

Jon Christopher Nelson (b. 1960) is currently a Professor of Composition at the University of North Texas where he is as an associate of CEMI (Center for Experimental Music and Intermedia). Nelson's electroacoustic music compositions have been performed widely throughout the United States, Europe, Asia, and Latin America. He has been honored with numerous awards including fellowships from the Guggenheim Foundation, the National Endowment for the Arts, and the Fulbright Commission. He is the recipient of Luigi Russolo (1995), Bourges Prizes (1996, 1997, 1999, 2002 and the Euphonies d'Or prize in 2004) and the International Computer Music Association's Americas Regional Award (2012) and Music Award (2020). In addition to his electro-acoustic works, Nelson has composed a variety of acoustic compositions that have been performed by ensembles such as the New World Symphony, the Memphis Symphony, the Brazos Valley Symphony Orchestra, ALEA III, and others. He has composed in residence at Sweden's national Electronic Music Studios, the Visby International Composers Center and at IMEB in Bourges, France. His works can be heard on the Bourges, Russolo Pratella, Innova, CDCM, NEUMA, ICMC, and SEAMUS labels. Recordings can be heard at his SoundCloud page.

Z.M. Rebecca Nie is the Buddhist Chaplain-Affiliate at Stanford. She is also a Stanford alum, Zen Master of the Korean JogyeOrder, and an established Bay Area visual artist. California. As an heir of one of the oldest living mystic orders, she creates to artistically invite the audience into Zen encounters that are directexperiences of the transcendental. The inspiration for Z.M. Nie'sart comes from her introspection, global adventures, and attainment in diverse disciplines.

Miho Nogaki: She is currently studying at the Graduate School of System Design and Technology, Tokyo Denki University. Under the guidance of Prof. Saito, she is conducting research on mutual feedback between CV signals and video. She is concurrently studying informatics at the Graduate School of Science and Engineering, Tokyo Denki University.

Composer and Performer **Neil O'Connor** has been involved in experimental & electro-acoustic music for the past 23 years and has performed in Ireland, Europe, Australia, Asia, and the US. His work has been shown/performed at MOMA, New York, IRCAM Paris, Institute of

Contemporary Art, London and has held residencies at the Massachusetts Museum of Modern Art and EMS – Swedish Institute of Electro-Acoustic Music, Stockholm, Sweden. Neil has worked / collaborated with members of the Philip Glass Ensemble, the Glenn Branca Ensemble and Crash Ensemble.
Neil studied at Trinity College (M.Litt./PhD Mus) under Composer Donnacha Dennehy and has lectured in Composition and Performance Technology since 2005 at the Art Institute of California (San Francisco), The Institute of Audio Research (New York City) and Trinity College (Dublin). He is currently based at DMARC (Digital Media Arts Research Centre), Dept. of Computer Science, University of Limerick, Ireland.

Composer **João Pedro Oliveira** holds the Corwin Endowed Chair in Composition for the University of California at Santa Barbara. He studied organ performance, composition and architecture in Lisbon. He completed a PhD in Music at the University of New York at Stony Brook. His music includes opera, orchestral compositions, chamber music, electroacoustic music and experimental video. He has received over 70 international prizes and awards for his works, including three Prizes at Bourges Electroacoustic Music Competition, the prestigious Magisterium Prize and Giga-Hertz Special Award, 1st Prize in Metamorphoses competition, 1st Prize in Yamaha-Visiones Sonoras Competition, 1st Prize in Musica Nova competition. He taught at Aveiro University (Portugal) and Federal University of Minas Gerais (Brazil). His publications include several articles in journals and a book on 20th century music theory.

Ryan Olivier (b. 1985), who grew up in the southern United States, is a composer and multimedia artist. Ryan continues to compose for both traditional concert ensembles and fixed media, but his current focus is the real-time incorporation of visualized electronic music with live performers. Deb Miller of DCMetroTheaterArts described his evening-length show, Imaginary Music, with performing partner Andrew Litts as, "a highly intelligent synthesis of the arts with science and technology,…an equally lofty aesthetic of transcendent beauty;…at once cerebral and emotive, intellectual and hypnotic." Ryan is an Assistant Professor of Music at Indiana University South Bend where he teaches courses in music technology and interdisciplinary composition. Previously Ryan taught at St. Joseph's University and Temple University where he earned a master's degree and a doctorate after completing his undergraduate studies at Loyola University New Orleans. www.ryanolivier.com

Eoghan Ó Néill is a recent Audio Engineering graduate of Queen's University Belfast. currently studying for a MRes in Instrument Design. His interests include novel instrument design and improvisation as well as audio-visual performance.

Miguel Ortiz is a Composer and Lecturer in Instrument and Installation Design at the Sonic Arts Research Centre, Queen's University Belfast. His interests include performance and improvisation with novel instruments and digital systems as well as composition.

Felipe Otondo studied acoustics in Chile and composition at the University of York in England with Ambrose Field and Roger Marsh focusing in electroacoustic composition and music theatre. His music has been played across Asia, Europe, North and South America. He is currently Senior Lecturer and Director of the Arts and Technology Lab (LATe) at Universidad Austral in Chile. His music is published by Sargasso Records.

Marcin Pączkowski (pronounced `marr-cheen pawnch-`koav-skee) is a composer, conductor, digital artist, and performer, working with both traditional and electronic media. As a composer, he is focused on developing new ways of creating and performing computer music. His pieces involving real-time gestural control using accelerometers have been performed worldwide,

including International Computer Music Conference in Daegu, Korea, Music of Today concert series in Seattle, Washington, Northwest Percussion Festival in Ashland, Oregon, Toronto International Electroacoustic Symposium in Toronto, Canada, and the Audio Art festival in Kraków, Poland.
As a conductor he regularly works with Evergreen Community Orchestra, presenting concerts of diverse repertoire to local communities. He is also involved in performing new music and has led premieres of numerous works in Poland and the United States. His conducting performances with Inverted Space ensemble include Anahit by Giacinto Scelsi, featuring Luke Fitzpatrick on violin, Flurries by Brian Ferneyhough, and Hermetic Definition by Joël-François Durand.
He received his Ph.D. in Digital Arts and Experimental Media (DXARTS) at the University of Washington in Seattle where he currently works as a Postdoctoral Scholar. He is also a UW Data Science Postdoctoral Fellow. He holds Masters' degrees from the Academy of Music in Kraków, Poland, and from the University of Washington. He received grants and commissions from Seattle Symphony, eScience Institute, Adam Mickiewicz Institute, Polish Institute of Music and Dance and from Lesser Poland Scholarship Foundation Sapere Auso.

Ken Paoli, Professor of Music at College of DuPage, studied composition with Phil Winsor at DePaul University and. M. William Karlins at Northwestern University.
Ken is involved in archiving and researching the works of American composer Phil Winsor. His paper on Winsor's "Formosan Aboriginal Legends" was presented at WOCMAT 2016 in Taoyuan, Taiwan and a paper on Winsor's MAX/MSP instrument, MYST was presented in August 2018 at the International Computer Music Conference in Daegu, South Korea. His paper on "Winsor's Poetics of Music" was presented at ICMC 2021.
Ken's research interest includes algorithmic composition and his paper titled "Macrostructure and Transition in an Algorithmic Composition Environment" was published in the proceedings of the ICMC in 2017 and his paper titled "Hindemith and Algorithmic Harmonic Generation" was published by the ICMC in 2019.
His String Quartet #3 was recently performed in a streaming concert by the Lehner String Quartet through the auspices of Virtual Concert Halls and Vox Novus. Recent premieres include Forks in the Road, The Papyrus of Ani and Side Effect Blues.
Ken remains active as a commercial and jazz keyboard performer and arranger in the Chicago metro area.

Dimitri Papageorgiou's music presents a continuous negotiation of the distinction between the self and the other and the fluidity of their relationship. The core of his work revolves around specific themes: time, identity/similarity/difference, repetition, memory, and order — the fragility of order in the creative process. Papageorgiou perceives the concept of memory - the way we consider the past - not as faithful reconstitution driven by nostalgia, but from the point of view of its creative dimension, that is, as a constantly updated reconstruction of the past from the point of view of the present and through a process of constant reformulation: the workings of memory as a compositional metaphor. All musical ideas are imperfect and vulnerable, ephemeral and distorted. They are constantly in a state of flux and under constant revision.

Currently an associate professor of composition, he was appointed at the Department of Music Studies of the Aristotle University of Thessaloniki in 2007. He majored in composition with Hermann Markus Pressl and Andrej Dobrowolski at the University of Music and Drama at Graz, Austria. From 1998 to 2002 he held a Presidential Fellowship of the University of Iowa, U.S.A., for a Ph.D. in composition with Donald Martin Jenni, Jeremy Dale Roberts, and David Karl Gompper.

He is artistic co-director of the outHEAR New Music Week, a symposium and master class for new music featuring the ensemble Klangforum.

Mattia Parisse (*1998) is an Italian composer, sound artist and performer. He studied electronic music at the Conservatory of Perugia with Simone Pappalardo and Angelo Benedetti (110/110 summa cum laude).
He create mixed-music and electroacoustic music compositions, interactive sound installations, audiovisual works and augmented musical instruments.
He is interested in the new and unconventional digital sound production techniques as well in the design and self-constructive research of instruments and their relationship with the technological medium.
He currently collaborates with the contemporary music ensemble "Opificio Sonoro" of Perugia, directed by Marco Momi.
His music has been programmed in festivals and events such as CUVO Festival 2021 (Madrid), Festival SIIDS2020 (Portugal), Festival Artescienza 2021 (Rome - Goethe Institut Rom), Orizzonti Festival 2021 (Perugia), Festival AiMaako 2021 (Chile), ID2021 (Stuttgart), Festival Web Biennial 2020 for electronic arts (Istanbul), Suoni Controvento 2020, New Media Fest 2020, IDKF 2020 (Stuttgart), Simultan Festival 2021 (Romania), Festival Ecos Urbanos 2021 (Mexico City) etc.
Upcoming projects include a new work for sax Tenor and percussion for the ensemble Duo Dubois, a new sound art work for the project "Blooming Sciarrino", a work in collaboration with the composer Carlo Elia Praderio and with the accordionist Carlo Sampaolesi, a laptop ensemble duo with Nicola Cappelletti, live activities with the program "Space is only Noise" with Carlo Sampaolesi, documentary on Salvatore Sciarrino in collaboration with the ensemble "Opificio Sonoro" directed by Marco Momi.

Jong-Hwa Park Research Scientist, Bell Therapeutics Inc.

Juan Parra Cancino (computer and modular electronics), studied Composition at the Catholic University of Chile and Sonology at The Royal Conservatoire The Hague (NL), where he obtained his Masters degree with focus on composition and performance of electronic music. In 2014, Juan obtained his PhD degree from Leiden University with his thesis “Multiple Paths: Towards a Performance practice in Computer Music”.
His work in the field of live electronic music has made him recipient of numerous grants such as NFPK, Prins Bernhard Cultuurfonds and the International Music Council.
Founder of The Electronic Hammer, a Computer and Percussion trio and Wiregriot (voice & electronics), he collaborates regularly with Ensemble KLANG (NL) and Hermes (BE), among many others. Since 2009 Parra is a fellow researcher at the Orpheus Institute (Ghent, BE), focused on performance practice in Computer Music. Juan has been recently appointed as Regional Director for Europe of the International Computer Music Association for the period 2022-2026.

Dr Aki Pasoulas is a composer and a Senior Lecturer in Music at the University of Kent. He is the Director of MAAST (Music and Audio Arts Sound Theatre) and the Principal Investigator for the AHRC-funded research project ‘A Sonic Palimpsest: Revisiting Chatham Historic Dockyards’. His research interests include acousmatic music, time and timescale perception, psychoacoustics and sound perception, spatial sound, acoustic communication, and soundscape ecology especially in relation to listening psychology. In addition to electroacoustic music, he has written for instruments, found objects, voice and mixed works with live electronics, he composed music for the theatre and for short films, and organised and performed with many ensembles. Aki received honourable mentions at international competitions; his scholarly and

music works have been published through KPM/EMI, ICMA, Sonos Localia, Stolen Mirror, Gruenrekorder, HELMCA, Pinpoint Scotland, Cambridge University Press and Oxford University Press, and his compositions have been performed worldwide.

Dave Payling is an audio-visual artist who teaches and studies Electronic Music at Staffordshire University, teaching audio-visuals, sound synthesis, mastering and Touchdesigner. He is a visual music composer and holds a PhD in Visual Music composition. His earlier research centred on sonification and auditory display and his composition Listen (Awakening) was performed at the Sydney Opera House as part of the ICAD conference in 2004. His more recent work focuses on composition and performance of Visual Music with abstract animation and electronic music. Dave is From the Floor section editor for Dancecult: Journal of Electronic Dance Music Culture. Dave's compositions have been performed at the Soundings Festival Edinburgh, MANTIS Festival University of Manchester, flEXiff Experimental Film Festival Sydney Australia, Seeing Sound Bath Spa, ICMC, NoiseFloor Festival Staffordshire and the Understanding Visual Music Conference in Brasilia, Brazil

Sean Peuquet is a composer, sound artist, audio programmer, curator, scholar, and educator. He presents his work regularly at national and international venues for contemporary art and music such as the International Computer Music Conference (Daegu, Shanghai, Utrecht, Ljubljana, Belfast), Sound and Music Computing Conference (Cyprus), Toronto Electroacoustic Music Symposium, Korean Electro-Acoustic Music Society (Seoul), Sines and Squares (Manchester, UK), Society for Electro-Acoustic Music in the United States, Society of Composers, Inc., New York City Electronic Music Festival, Electronic Music Midwest, VU Symposium, and more.
Currently, Sean is an Associate Professor and Chair of the Music Production Department at Rocky Mountain College of Art + Design in Denver, CO. Between 2015 to 2020, Sean served as Programs Director and Lead Music Instructor for the Madelife Creative Accelerator program, based in Boulder, CO. He also co-founded two Colorado Front-Range companies: RackFX, an online platform for automated analog signal processing, and CauseART, a curatorial firm that advances the role of artists as cultural service providers within the business community through commissions, exhibitions, and participatory programming for local and multinational companies, including Google Boulder. In early 2018, Sean was in residence at the Atlantic Center for the Arts in New Smyrna, FL to work on multichannel sound spatialization and electroacoustic composition with Robert Normandeau.
From 2012 to 2014, he served as Visiting Professor of Digital Arts at Stetson University while completing his PhD in Music Composition at the University of Florida ('13). He received his MA in Electro-Acoustic Music from Dartmouth College ('07) and holds a BA in Music, Psychology, and Astronomy (minor) from the University of Virginia ('05). Across his education, he had the privilege of studying computer music and composition with Paul Koonce, Larry Polansky, Jon Appleton, Matthew Burtner, Paul Richards, Judith Shatin, Charles Dodge, James Paul Sain, Ge Wang, Newton Armstrong, and Marina Rosenfeld. His current research interests include immersive musical systems, self-reflexive listening practices, and identifying new paths for art as a socio-cultural determinant. His music is available through Ablaze Records and SEAMUS.

Christopher Poovey (b. 1993) is a composer, media artist, and creative coder based in Dallas Texas who creates music and software which produce rich and colorful sound and encourages interactive structures. Christopher's compositions have been performed by Ensemble Dal Niente, Ensemble Mise-en, University of North Texas's Nova Ensemble, Indiana University's New Music Ensemble, and Indiana University's Brass Choir. Chris was a finalist for the 2021 International Confederation of Electroacoustic Grand Prix and has received a special mention

from the 2021 Ars Electronica Forum Wallis. His work has also been selected for performance at conferences such as the International Computer Music Conference, Seoul International Computer Music Festival, International Confederation of Electroacoustic Music General Assembly, New York Electronic Music Festival, Society for Electroacoustic Music in the United States National Conference, Inner SoundScapes, National Student Electronic Music Event, Electronic Music Midwest, and Mox Sonic.
Chris is ABD for a PhD in composition from the University or North Texas and has MA from the same institution. He also has a BM in composition from Indiana University. In addition to his formal studies, Christopher has taken courses at the Institut de Recherche et Coordination Acoustique/Musique, at Princeton University for the Só Percussion Summer Institute, and has attended a residency at the Atlantic Center for the Arts.
In addition to his work in composition, Christopher develops software for electronics music production and performance primarily in Max and Csound including the Grainflow package for Max, a plethora of Max for Live devices, and VST instrument build using the Cabbage framework. These tools and his compositions may be found at christopherpoovey.com.

Stephen Travis Pope is an award-winning composer, film-maker, computer scientist and social activist based in Ojai, California. He has worked developing multimedia software since the early 1980s and has over 100 technical publications on music theory and composition, computer music and artificial intelligence, and he has taught and conducted music research at Stanford University, the Universities of California Berkeley and Santa Barbara and elsewhere. Stephen is also a practicing Quaker, a conscientious objection and counter-recruitment counsellor and a seasoned workshop facilitator with the Alternatives to Violence Project, working for over 10 years in the state and federal prison systems.

Annkathrin Pöpel, Composer-Performer: Annkathrin is a neurologist and psychiatrist with her own practice in Zurich. She is also a composer, performer and singer. For several years she has been working with the sonification of biosignals, moving loudspeakers and creating multidisciplinary performances. Together with Peter Färber she developed the kinetic sound sculpture "sounding Influencer". Her research interest is human-machine interaction with dynamic audio sources and biological signals on an artistic level. In addition, she deals with correlations between audio- and biosignals in the clinical-therapeutic field. She is researcher at the Institute for Music Research at Zurich University of the fine Arts, Switzerland.

Spyros Polychronopoulos was born in Athens, Greece in 1980. His interest in sound, both as a physical phenomenon as well as a form of art, began at an early age. He holds a degree in Physics and a PhD in Electrical Engineering from University of Patras, Greece. His thesis focused on tuning the acoustics of closed spaces. After relocating to London, UK in 2014, he gained three years of practical experience working as an acoustic consultant. Then he moved to Brighton, UK where he worked as a Research Fellow in the Informatics Department at the University of Sussex, researching 'Human-computer Interaction for Acoustic Levitation'. He has published a number of papers in the field of acoustics and one of his works "acoustic levitation with optimized reflective metamaterials" was awarded as it reached 10th position out of the most downloaded papers in 2020 in Nature Scientific Reports. Further to his research in sound, he has developed unique sound objects (i.e. LEM), released 18 albums and performed a number of concerts around the world. Spyros regularly leads workshops and lectures on new technologies in composition and aesthetics of sound. He currently works as a researcher, on digital simulation of ancient Greek instruments, and as a lecturer, teaching music technology and image processing, at National and Kapodistrian University of Athens department of Informatics and Telecommunications, Greece.

Michael Pounds is a Professor Emeritus of Music Theory and Composition at Ball State University, where he taught composition, acoustics, music perception, computer music, and related courses. His creative interests include electroacoustic compositions with and without instruments, computer-interface performance systems, interdisciplinary installations, instrument design and building, and electroacoustic ensemble performance. Past activities include performances at the Society of Composers, Inc. conferences, the International Computer Music Conference, the national conference of the Society for Electro-Acoustic Music in the US, the MOXsonic festival, the Electronic Music Midwest festival, and others. In the past he has co-hosted national conferences of SCI and SEAMUS.

QI Mengjie (**Maggie**) is currently the assistant professor at China Conservatory of Music. As a composer, sound artist and curator, her music and installation works have been presented at many international festivals, including ICMC, Audio Arts Festival, WOCMAT, CIME General Assembly concerts, International Electronic Music Festival of New York, SEAMUS, ISCM, NYCEMF, SPLICE Festival, Cube Fest, SICPP, Beijing Modern Music Festival and MUSICACOUSTICA-Beijing. She received her master and doctoral degree in electronic music at the Central Conservatory of Music in Beijing. She studied at the City University of New York for two years. She worked as postdoctoral research fellow on AI music and multimedia music performance at the Central Conservatory of Music. Her teachers include Ping Jin, Zhang Xiaofu, Douglas Geers and Morton Subotnick.
As a curator, Qi Mengjie is devoted to the promotion of the cultural and musical communication between China and the Western countries. She has served as International Coordinator for MUSICACOSTICA-Beijing since 2012. She was curator for a number of concerts, contemporary art exhibitions and festivals. She was a member of a jury on ICMC and She is one of the associate editors of Intelligent Arts, an online academic platform based in New York. In 2020, she founded the Ensemble Phoenix Beijing which dedicates itself to the exploration and presentation of the works of multiple music styles, cultural elements and media languages.

Giulia Regini is an electroacoustic and audio-visual composer living in Italy.
In 2021 she obtained the Master Degree in Electronic Music.
His works have been presented at various national and international festivals including: XV PNA - Premio Nazionale delle Arti (Italy), NYCEMF - New York City Electroacoustic Music Festival (USA), ICMC - International Computer Music Conference (Cile), TNMAS - Thailand New Music and Art Symposium (Thailand), SICMF - Seoul International Computer Music Festival (South Korea).
She attended several electronic music workshops and masterclasses, including those taught by professor John Chowning in 2013 and Lelio Giannetto in 2015.
Her artistic career includes audiovisual works, acousmatic pieces and commercials.

Leah Reid is a composer, sound artist, researcher, and educator, whose works range from opera, chamber, and vocal music, to acousmatic, electroacoustic works, and interactive sound installations.
Winner of a 2022 Guggenheim Fellowship, Reid has also won the American Prize in Composition (Vocal Chamber Music Division), first prize in the 8th KLANG! International Electroacoustic Composition Competition, Sound of the Year's Composed with Sound Award, the International Alliance for Women in Music's Pauline Oliveros Award, and prizes in the Iannis Xenakis International Electronic Music Competition and the 13th International Destellos Competition. She has received fellowships from the Guerilla Opera Company, the MacDowell Colony, the Virginia Center for the Creative Arts (VCCA), the Ucross Foundation, and the Hambidge Center.
Her compositions have been presented at festivals, conferences, and major venues throughout

the world, including Aveiro_Síntese (Portugal), BEAST FEaST (England), Espacios Sonoros (Argentina), EviMus (Germany), ICMC (USA, Chile & Ireland), IRCAM's ManiFeste (France), LA Philharmonic's Noon to Midnight (USA), MA/IN Festival (Italy), NYCEMF (USA), OUA-EMF (Japan), Série de Música de Câmara (Brazil), the Tilde New Music Festival (Australia), TIES (Canada), and WOCMAT (Taiwan), among many others. Her works are published with Ablaze Records, New Focus Recordings, Parma Recordings, RMN Classical, and BabelScores. Reid received her D.M.A. and M.A. in music composition from Stanford University and her B.Mus from McGill University. She is currently an Assistant Professor at the University of Virginia.

Jane Rigler, flutist, composer, improviser and educator and has been a featured performer in contemporary music festivals throughout the U.S. and Europe. Jane's compositions (solo acoustic pieces and interactive electronic works) explore language and the sounds of the environment. As a Deep Listening® Certificate holder she offers exploratory listening workshops for all people. She was a 2019-20 Fulbright Scholar (University College Cork, Ireland) and Japan-US Friendship commission winner (2009-10). She has been invited to numerous residencies such as Civitella Ranieri and Montalvo Arts Center among others. She appears on various labels such as Innova, Neuma, Tzadik, Porter, DewDrop, Sachimay, etc. As an Associate Professor at the University of Colorado, Colorado Springs (UCCS) in the VAPA interdisciplinary art department, she teaches flute, composition, improvisation, sound art, computer music and listening and is an affiliate faculty with the Lyda Hill Institute for Human Resilience.

Curtis Roads, Jack Kilgore, and Rodney DuPlessis created and released EmissionControl2 from the Center for Research in Electronic Art Technology (CREATE) at UC Santa Barbara.

Brad Robin is a composer, singer, pianist/keyboardist, improvisor, computer programmer, director/choreographer, and creator of new opera, electroacoustic multimedia works, and works for instruments and computer.
Robin creates visceral experiences crossing into the world of theater, dance, and video in such a way as to merge mediums. He integrates musical and naturally occurring sounds and images creating sonic fabrics natural and imagined, streams of water and glass, striking and scraping of objects metallic and wooden, natural and electronic air, and acoustic sounds with electronically processed sounds. His music swirls, bites, and caresses, creating a transformative experience for both performers and audience.
Robin will perform Spread at the Golden Key Piano Composition Competition awards ceremony in Vienna, Austria as the 2nd place recipient in the National Professional category. He has recently appeared with Telefauxcus and 4th Dimension Ensemble, both ensembles dedicated to the integration of improvised music and dance, and his recently released 5000 Fingers, an improvisational album with Chris Mercer of dueling electroacoustic "hyper-pianos."
His music has been performed at national and international festivals including ICMC, SEAMUS, and NYCEMF. His recent work appears on RMN Classical's Call of Piano Works 2020, and also through the Centaur. He received his Phd from University of North Texas, and also from DePaul and Northwestern Universities where he currently teaches.

Jessica J. Rodríguez (MA–Universidad de Guanajuato (Mexico), BA–Visual Arts, Universidad Michoacana de San Nicolás de Hidalgo (Mexico)), is a visual/audio artist, designer and researcher. She has collaborated with composers, writers, designers, and other visual artists to explore practices such as visual music, electronic literature, video experimentation, live coding, among others. Currently, Jessica is part of two projects: andamio.in –a collaboration platform that collides technologies with practices that mix text, visuals, and sound, and RGGTRN –a collective that engages in algorithmic dance music and audiovisual improvisation informed by

the Latinx context. For her Ph.D. at McMaster University, Jessica will build a programming language for "live" video performance and develop a series of works around this language. Jessica also works as a research assistant at the Networked Laboratory Imagination with Dr. David Ogborn developing Estuary –a collaboration platform for hosting different languages for live coding. She often listens, sings, and dances reggaeton and cumbia.

Rolando Rodríguez (Mexico) is a poet, performer, and media artist. He has a Masters in Contemporary Arts and is currently studying a Masters in Pedagogy. His work focuses on the exploration of three elements: image, text and sound. It has research and production projects that use analog and digital technologies as tools to explore expanded possibilities through text. He is a member of Andamio.in, which is a collaboration project where producers with different formations are found. The sound is the base element that is ramified in different applications: within the body, textures and visuals. The sound image has a rhythm that assembles with the live or recorded reading, with live or pre-produced and manipulated visual images, with the textures that are added to each project.

Jøran Rudi's first academic training was in social sciences, followed by a few years as a rock musician in one of the influential bands that emerged in Norway at the end of the 1970s. This brought him in contact with electronic instruments and electroacoustic music, and he travelled to the United States for studies in computer music at New York University. In 1993, he was brought in to be the founding director of NOTAM. From 1993 – 2010 he was responsible for the academic and artistic profiles of the institution, its research and development, mediation, education, administration and economy. Jøran Rudi stepped back to a researcher position in 2010, a position he held until 2019. He is currently visiting professor at University of Huddersfield.

Kseniya Rychkova is an alumna of the Computer Science department at The College of New Jersey. She is currently pursuing a master's degree in quantum computing at the University of Helsinki.

Andrea Salgian is a Professor of Computer Science at The College of New Jersey, specializing in Human Computer Interaction. Much of her research is centered on gesture recognition and on how various gestures can be used in human to human or human to machine communication. She has published multiple papers on visual analysis of conducting gestures and conducting robots at ICMC and other conferences.

Ayako Sato is a composer, musician, and artist working mainly in the field of electroacoustic music. Using recordings materials of noises, sounds of everyday, and sound objects she encounters in her travels and daily life, she creates works that retrace and overwrite memories of environments and places. Her works have been presented at international conferences and festivals including ICMC (Australia, Greece, USA, Korea, and Ireland), SMC (Sweden, Greece, Germany, Cyprus, Italy, and France), Festival Futura (France), NYCEMF (USA), Born Creative Festival (Japan), etc. She was awarded the third prize of International Electroacoustic Music Young Composers Awards at WOCMAT (2012, Taiwan), the honorary mention of Destellos Competition (2013, Argentina), the third prize of Prix Presque Rien (2013, France), Special Prize for Music&Sound at Korea Independent Animation Film Festival (2019, South Korea), and the third place by public jury in Destellos Competition (2022, Argentina). In 2019 she received her Ph.D. from Tokyo University of the Arts for her study of Luc Ferrari's works. She is currently a part-time lecturer at Tamagawa University, Osaka University of Arts, and Shobi College of Music, and a visiting researcher at Université Paris 8.

Antonio Scarcia graduated in Electronic Engineering at University of Padua and holds a postgraduate diploma in Signal Processing from University of Bari and an academic diploma in Electronic Music cum laude from the Conservatory of Bari. He is interested in computer aided music and multimedia composition. He has held various teaching positions as an adjunct professor at the Genoa Conservatory of Music in the decade 2011-2021. His works for digital media have been included in music programs of several important events such as editions of NYCEMF (2022, 2021, 2019), ICMC (2014, 2013, 2012, 2010, 2007), North Carolina Computer Music Festival (2008), SMC (2012, 2010, 2009), Mantis Festival 2010), CIM (2018, 2016, 2014, 2012, 2010), EMuFest (2013, 2012, 2011, 2010), SICMF (2013), Csound Conference (2013) and Musica Nova Competition (honorary mentions in 2016 and 2013, first prize in 2011).

Franziska Schroeder is the Queen's University lead for the "Performance Without Barriers" Project. She is a saxophonist, theorist, and a Reader at the Sonic Arts Research Centre, School of Arts, English and Languages and a Fellow of the HEA (Higher Education Academy in the UK). She serves on the peer review panel for the UK's AHRC (Arts and Humanities Research Council) and is a registered expert for the EU's Education, Audiovisual and Culture Executive Agency (EACEA). Franziska was awarded her PhD from the University of Edinburgh in 2006, and has since written for many international journals, including Leonardo, Organised Sound, Performance Research, Cambridge Publishing and Routledge. She has published a book on performance and the threshold, an edited volume on user-generated content and in 2014 a book on improvisation entitled "Soundweaving".

Douglas Scott was born and raised in Southern California, U.S.A. He studied music theory and composition at UCLA, Indiana University, and Columbia University. His interest in electronically-generated music began with an early fascination with albums of classical and popular music performed on synthesizers. He has been active as both a composer of computer-generated music and as a co-creator and author of the RTcmix software toolkit.

Connor Scroggins is a composer who explores the mutual coexistence of nature and technology as well as relationships across subtle yet visceral soundscapes to engage a flow of listening. He recently completed a Master of Music from Bowling Green State University and previously received a Bachelor of Music from Arkansas State University in 2020. At Arkansas State's Create@State research symposium, he presented on musique concrète instrumentale and won awards for his presentations on spectralism and musical logic. His current research interests include phenomenology and acoustic ecology. His works have been read and performed by Robin Meiksins, The Rhythm Method String Quartet, Hypercube, New Thread Quartet, Apply Triangle Trio, the Parker String Quartet, Unheard-of//Ensemble, and The ___ Experiment. His music has been performed at NYCEMF, SEAMUS National Conference, SPLICE Institute, NSEME, and the Saarburg Music Festival. He has participated in masterclasses from Clara Iannotta, Jason Eckardt, Augusta Read Thomas, Cort Lippe, Mari Kimura, Greg Wilder, Marina Kifferstein, and Stephanie Lamprea. He has previously studied with Elainie Lillios, Timothy Crist, Mikel Kuehn, Christopher Dietz, Derek Jenkins, and Carrie Leigh Page.

Robert Seaback is a composer and sound artist from the US currently based in Oslo, NO. His music expresses corporeality, the hyperreal, digital stasis, and continuums between—integrating voices, instruments, soundscapes, and synthetic sources with digital techniques. He composes immersive electronic works for loudspeaker arrays, mixed music for instruments, and sound installations.
Robert has a PhD in composition from the University of Florida and degrees in music from Mills College (MA) and Northeastern University (BS). He is currently an Artistic Research Fellow at the Norwegian Academy of Music researching the concept of presence as it relates to

the composition and reception of digital music. His compositions have been presented at international events such as ICMC, SMC, Sonorities, MA/IN, and the ISCM World New Music Days, and have been recognised with awards from IEM & VDT 3D Audio Production Competition, Xenakis International Electronic Music Competition, ASCAP/SEAMUS, University of Florida, and Mills College.

After completing a BMus in Music (1996) at Goldsmiths College, University of London (England, UK), **Ambrose Seddon** composed, produced, and performed electronic music, which was released through a number of independent record labels. During this period, sonic experimentations with field recording, hardware processing, and computer audio led him to discover the extensive possibilities of electroacoustic music. As a result, he pursued an MA in Electroacoustic Composition (2004) followed by a PhD in Music (electroacoustic composition, 2013) both at City, University of London, and both supervised by Denis Smalley. Since 2002 he has focused primarily on acousmatic music composition, although he also creates interactive multichannel sound installations, collaborates on immersive audiovisual projects, and performs improvised live electronic music. He has twice been composer in residence at Elektronmusikstudion (EMS Stockholm, Sweden, 2015, 2016).
Ambrose Seddon's music has been performed in concerts and festivals, and has been awarded prizes in several international competitions such as: Klang! (France, 2014, 2019), Destellos (Argentina, 2010, 2018), Métamorphoses (Belgium, 2012, 2018), ICMC International Computer Music Conference (Denmark, 2007), Visiones Sonoras (Mexico, 2006), and Bourges (France, 2005, 2006). He is currently a Principal Academic in Music and Audio Technology in the Creative Technology Department of Bournemouth University (Bournemouth, England, UK).

Serkan Sevilgen is an Istanbul-based computer programmer and electroacoustic music composer. He uses several programming languages for sound synthesis and composition. His musical works and research focus on stochastic procedures, sonification, networked music systems, live coding, spatial audio, and, soundscape. His music is being performed at international festivals, radio shows, symposiums, and conferences. He co-started Soundinit (http://soundinit.org/) with the aim of creating collective sound works and raising awareness for the sonic environment through soundwalks and concerts. He is a member of the Istanbul Coding Ensemble (ICE) which has a focus on improvisation with musical algorithms.

Seth Shafer is a composer and researcher whose work hybridizes technology, new media, and art/science, with a specific focus on real-time notation, interactive music, and algorithmic art. Recent performances include the 2021 Edinburgh Fringe Festival, 2021 International Computer Music Conference (Santiago, Chile), 2021 New York City Electroacoustic Music Festival, 2021 Conference on Technologies for Music Notation and Representation (Hamburg, Germany), 2021 SEAMUS Conference (Virginia), 2020 International Society for Music Information Retrieval Conference (Montreal), 2019 Omaha Under the Radar Festival, Stonewall at 50 at La Mama (NY), 2018 Sound and Music Computing Conference (Limassol, Cyprus), and the 2015 Shanghai Conservatory Electronic Music Week (China). His sound installations have been shown at Kaneko (Omaha), the Perot Museum of Nature and Science (Dallas), Long Beach Museum of Art's Pacific Standard Time Exhibit, and the Long Beach Soundwalk. Seth is Assistant Professor of Music Technology at the University of Nebraska at Omaha and he holds degrees from the University of North Texas and California State University, Long Beach.
As a performer, Seth plays live electronics and tuba, founded and directed several experimental technology-centric ensembles, and played in popular acts including a performance on the Grammy-winning Vampire Weekend album Modern Vampires of the City.

Hailed as one of "Boston's best percussionists" by I Care if You Listen, **Matt Sharrock** (they/them) is a versatile marimbist, percussionist, and conductor who tirelessly champions the music of living composers. As half of the bass clarinet/marimba duo Transient Canvas, they have premiered over 80 pieces while touring extensively in the United States and abroad. From 2013-2020 they served as Music Director and conductor for Equilibrium and are a founding member of the mixed quartet Hinge and the Boston Percussion Group. In demand as a chamber musician, Matt is the resident percussionist with the Chameleon Arts Ensemble of Boston and has performed with the Lydian String Quartet, Boston Musica Viva, Sound Icon, the Lorelei Ensemble, and Dinosaur Annex, among others. As an orchestral percussionist, Matt can be heard regularly with the New Hampshire Music Festival Orchestra, the Orchestra of Indian Hill, and the Grammy-winning Boston Modern Orchestra Project. They have recorded on Beauport Classical, BMOP/sound, Innova, Navona, New Focus, and Ravello record labels. They are an assistant professor of core studies and composition at the Boston Conservatory at Berklee and a course developer and facilitator for Berklee Online. Matt proudly endorses Marimba One and Encore Mallets. For more information, visit www.mattsharrock.com.

Composer **Kyle Shaw** writes colorful, energetic music, in acoustic and electro-acoustic mediums, tailored to the people and circumstances of their occasions and informed by his performance experience as a pianist and organist. He has presented his work at the Intellectual Worlds of Johannes Brahms International Conference, the Grawemeyer Award's 30th Anniversary Conference, the University of Nebraska's Chamber Music Institute, Electronic Music Midwest, the Studio 300 Digital Arts Festival, the New York City Electroacoustic Music Festival, Electronic Music Eastern, and the SEAMUS conference. He has been a finalist for the ASCAP Morton Gould Young Composer Award, a prize winner of the Belvedere Chamber Music Festival, the American Guild of Organists Composition Competition, and 1st-prize winner of the Iowa State University Carillon Composition Competition and the Vera Hinckley Mayhew Creative Arts Contest.He has been commissioned by the Barlow Endowment, the 17th-annual 21st-Century Piano Competition, and has been a resident fellow at the Osage Arts Community's Mid-Missouri Composers Symposium.In 2018, he earned his DMA from the University of Illinois and is currently assistant professor of music theory and composition at California State University, Bakersfield.

Eric Sheffield is a musician and maker interested in physics-based modeling, networked performance, and popular music. He has served as the tech director for the Electroacoustic Barn Dance and has performed and presented work internationally at several conferences and festivals, including NowNet Arts, NYCEMF, Root Signals, SEAMUS, NIME, and EMM. Eric is a founding member of the group Bell Monks, which has several self-produced releases available on clang (clang.cl). He currently teaches as Visiting Assistant Professor in both the Music and Emerging Technology in Business & Design departments at Miami University, where he directs the Miami University Laptop Ensemble, aka MULE. More information about Eric's music and research can be found at: https://ericsheffield.net

Victor Shepardson is a doctoral student in the Intelligent Instruments Lab at the Iceland Academy of Arts. Previously he worked on neural models of speech as a machine learning engineer and data scientist. Before that he was an MA student in Digital Musics at Dartmouth College and a BA student in Computer Science at the University of Virginia. His interests include machine learning, artificial intelligence, generative art, audiovisual music and improvisation. His current project involves building an AI augmented looping instrument and asking what AI means to people, anyway.

Shi Bowen: 2019 undergraduate of the Department of ElectronicMusic, Sichuan Conservatory of Music. Participated in the USC media and film and television research project of the University of Southern California, and won a special scholarship for exchanges. The work "All Sound: Fantasia In Green" won the second prize of the computer music creation professional group in the The 14th Chinese Collegiate Computing Competition in 2021.

Takuro Shibayama:
He was born in Tokyo in 1971. He received an M.A. degree from the Tokyo College of Music in 1997 and a Ph.D. from Tokyo University of the Arts in 2010. He studied composition under Akira Nishimura, Shinichiro Ikebe, Joji Yuasa, Masao Endo, and Kiyoshi Furukawa. He was deeply fascinated by S. Reich in the late 1980s and M. Feldman in the early 1990s. Through these experiences, he has been particular about his monotonous and texture-like style that refuses to yield to trends that unfold over time. In recent years, he has been trying to understand his own creations through the transversal contexts of linguistics, epistemology, and cognitive science. He is exploring the possibility of expression through research about the generation of worth and the meaning of music. Furthermore, he is conducting collaborative research with engineers, psychologists, and cognitive scientists regarding various system emergence problems that relate to the theme "how human expectations composed of reasoning and emotion generate the future." He was invited to Zentrum für Kunst und Medien Karlsruhe (ZKM) as a guest artist and researcher from April 2017 to March 2018, subsidized by the Japanese governmental Agency for Cultural Affairs.
https://soundcloud.com/takuro-shibayama-1

George Sioros joined the University of Plymouth, UK, in 2022 as a Lecturer in Creative Computing. After studying classical Piano and Music Theory at the Orfio Conservatory in Athens, he completed his studies (BSc) in Physics at the University of Ioannina and an MSc in Physics and Technological Applications at the National Technical University of Athens, Greece. In 2016, he received a PhD in Digital Media from the University of Porto, Portugal, and subsequently conducted his post-doctoral research project on music-related body motion at the RITMO Centre for Interdisciplinary Studies in Rhythm, Time and Motion of the University of Olso, Norway. Prior to his music-related research, he carried out experimental research in the field of Biophysics at the National Centre for Scientific Research 'Demokritos', Greece. His research interfaces the disciplines of music technology and music cognition. Driven by a passion for musical rhythm, George investigates the perception of 'groove' and music-related body motion and develops algorithms and tools for music generation and analysis.

Grant Smith is an artist and writer working on sound, transmission, ecological and social projects in Loughborough Junction, South London. Grant co-founded the Soundcamp cooperative in 2013 and maintains a long-term documentation project at self-noise.net. Recent collaborations include Biosphere Open Microphones with Leah Barclay and Biosphere Soundscapes; Acoustic Commons (2020-22) for Creative Europe; Reveil (2014-), an annual long-form dawn chorus broadcast, Meet Me On The Radio, a weekly lockdown broadcast with Hannah Kemp-Welch, The Albany and older residents of Deptford, South London; and As if radio.. an experiment in ecological activist radio at COP26 Glasgow.

Lewis Smith is a PhD candidate, composer, saxophonist, clarinettist, and programmer currently developing a package of software with Disabled musicians using immersive technology and participatory design methods.
For almost 30 years he has been a professional musician, performing for television, radio, at international music festivals across Europe, Central Asia and on the Irish jazz scene. During those years he composed works for jazz ensembles, and, of note, works based on his research of

music in Kazakhstan.
Having returned to academia Lewis has focused his expertise on inclusive arts, composing three works. Works for string quartet and electronics, for jazz quartet and electronics and one for VR and electronics for the Open Youth Orchestra of Ireland. Lewis was technical lead in that project which also led to the foundation of three new inclusive ensembles around Ireland. Lewis designs and programs all the software used in his compositions.

Walker Smith (b. 1999) is a composer and researcher from Knoxville, TN. He is pursuing dual bachelor's degrees in music composition and chemistry at Indiana University. His music often integrates elements of his scientific research with an eclectic combination of musical styles to produce works attracting audiences from diverse backgrounds. He has studied composition at Indiana University, Boston University Tanglewood Institute, and Interlochen Summer Arts Camp, and electronic music at Indiana University, SPLICE Institute, and IRCAM. His professors and mentors include Sky Macklay, Claude Baker, Don Freund, Eugene O'Brien, John Gibson, Chi Wang, and Carla Scaletti.
Walker is particularly interested in data sonification, and his recent works use chemistry data from his laboratory research to create interesting sounds, textures, and musical narratives. Walker has written acoustic and electroacoustic works for a variety of ensembles, and his compositions have been performed by notable ensembles such as the Cincinnati Symphony Orchestra, Wet Ink Ensemble, and pianist Jihye Chang. He has received honorable mentions from the Tribeca New Music Young Composer Awards and was a finalist in the 2019-20 ASCAP Morton Gould Award.
In addition to composing, Walker is an active researcher in organic chemistry. His research has been recognized with prestigious national awards from the Goldwater Scholarship Foundation and the American Chemical Society, and he has presented his work at MIT, Rice, Indiana University, and Pfizer Headquarters. He won the "Outstanding Presentation in Organic Chemistry" award for his presentation at Rice University's Gulf Coast Undergraduate Research Symposium.

Von-Wun Soo was born in Kaohsiung, Taiwan, in 1953. He received the Ph.D. degree in computer science from Rutgers—The State University of New Jersey, New Brunswick, in 1987.,He joined the Department of Computer Science, Tsing Hua University, Hsinchu, Taiwan, as an Associated Professor in 1988. During 1997–1998, he also served as President of Taiwanese Association for Artificial Intelligence. Since 2004, he has also served as Professor at the Department of Computer Science and Information Engineering and concurrently as Dean of Research and Development and since 2008 as Vice President of Academic Affairs at the National University of Kaohsiung. His research interest covers many fields in artificial intelligence such as machine learning, natural language acquisition, intelligent agents, ontological engineering, and bioinformatics.

Cecilia Suhr is an award-winning intermedia artist and researcher, multi-instrumentalist (violin/cello/voice/piano), interaction designer, multimedia composer, painter, author, and improviser, who is working at the intersection between art, music, and digital technology. Her creative work has been featured in New York City Electro-Acoustic Festival, Festival of Contemporary Art Music, Splice Festival, Hot Air Music Festival, Electronic Music Midwest Festival, Moxonic Festival, Beast Feast, Irish Sound, Science & Technology Association, Performing Media Arts Festival, Oh My Ear Festival, SEAMUS, iDMAa, ICMA, Audio Mostly Conference, ACM International Conference on Multimedia, IEEE Games, Entertainment and Media Conference, Convergence, International Conference/Festival of Music, Technology & Ideas, Music Diaries Festival, Klingt Gut International Symposium on Sonic Art and Spatial Audio, CICA Museum, IANG Gallery, Pensacola Museum of Art, Society of Composers,

Outside the Box Biennial, Artech: International Conference on Digital and Interactive Arts, National Associations of Composers, ELO Conference and Media Arts Festival, etc. She is a recipient of the MacArthur Foundation, Digital Media and Learning Research Grant Award (2012). She is an author of Social Media and Music: The Digital Field of Cultural Production (2012, Peter Lang Press) and Evaluation and Credentialing in Digital Music Communities (MIT Press, 2014). She also served as an editor and contributing author to Online Evaluation of Creative Arts (Routledge Press, 2014). She is currently an Associate Professor of Humanities and Creative Arts as well as an Affiliate Professor of Art at Miami University Regionals, Ohio.

Marija Šumarac is a Serbian sound designer, composer and trombonist. She holds a BA Diploma in Recording and Sound Design from University of Arts Belgrade. She performed with ensembles such as the Youth Philharmonic, New Spark Jazz Orchestra and many others. Her work in film, radio (Electronic Studio Radio Belgrade) and television influences her compositions and drives her interest in sound manipulation. She has presented her work internationally at festivals and venues such as Prague Quadrennial, Ars Electronica and UCLA ArtSci Center.

Takahiro Suzuki: He is currently studying informatics at the Graduate School of Science and Engineering, Tokyo Denki University.Misaki Tsuboya: He is currently studying informatics at the Graduate School of Science and Engineering, Tokyo Denki University.
Taiga Yamaguchi: He is currently studying informatics at the Graduate School of Science and Engineering, Tokyo Denki University. Under the guidance of Prof. Kambe, he is conducting research to develop an advertising service presentation system for use during autonomous driving.

Stephany Svorinić is a composer and vocalist. She obtained her undergraduate degree from NYU and her Master of Music in classical vocal performance at New Jersey City University. In December 2019 she completed a graduate diploma in composition from The Longy School of Music, studying with Dr. Osnat Netzer. There, she was the winner of the Radius Ensemble's Eighth Annual Pappalardo Composition Competition for her chamber work, Woodscrossing, which has since been played on classical radio stations nationwide. In 2020, the International Contemporary Ensemble premiered her trio for harp, guitar, and flute at Connecticut Summerfest. She was also a composer fellow for the 2021 Etchings Festival in Northampton, MA. She is completing a master's in music composition at Tufts University where her thesis project sets the poetry of 19th Century Cuban poetess, Juana Borrero.

Michael Taenzer received the M.Sc. in Computational Visualistics from the University of Koblenz-Landau in Koblenz, Germany. He is currently a Doctoral Student at the Ilmenau University of Technology, and a Researcher in the Semantic Music Technologies group at the Fraunhofer Institute for Digital Media Technology IDMT in Germany under a DFG (German Research Foundation) funded project. During the summer of 2021 he was interning at Audioshake in San Francisco, USA. His research interests include music instrument recognition, source separation, and deep learning.

Akira Takaoka is a leading composer of contemporary classical music and music theorist in Japan. He has received many commissions and his compositions have been performed at major festivals worldwide such as NYCEMF, ISCM World Music Days, ICMC, SEAMUS, and SMC in London, Copenhagen, Venice, Florence, New York, Tokyo, etc. His music combines computer technologies, live performance, and visual arts, light art in particular. He also organizes international festivals of contemporary classical and electroacoustic music in Tokyo and other major cities in Japan.

He is currently Professor of Music at both J.F. Oberlin University and Tokyo College of Music, Japan, as well as a lecturer at Tokyo University of the Arts and Chuo University in Tokyo. He is also frequently invited to give lectures internationally. His research on atonal pitch organization, algorithmic composition, and music cognition is internationally recognized at major conferences such as ICMPC, SMPC, and ICMC.
He received a BA and an MA in philosophy from Keio University in Tokyo and an MA and a PhD in music from Columbia University, where he was a Fulbright scholar.

TAN Liuyang is the undergraduate student in the Elecronic Music Department of Sichuan Conservatory of Music. He studiies electronic music composition with Prof. LU Minjie.At present, his composition focus on electroacoustic music and mixed electronic music.

Zach Thomas

Dr. Joe Timoney joined the Dept. of Computer Science at Maynooth University in 1999. He teaches on undergraduate programs in Computer Science and in Music Technology. His research interests are based in the areas of Software Engineering and Audio signal processing, with a focus on musical applications. He has supervised a number of Ph.D. students. In 2003 he spent a 3- month research visit at ATR laboratory in Kyoto, Japan, and in 2010 to the College of Computing at Zhejiang University, Hangzhou, China. He also is a keen DIY electronics enthusiast and has built a number of electronic instruments.

Pierre Alexandre Tremblay is a composer and performer on bass guitar and electronic devices, in solo and group settings, between electroacoustic music, contemporary jazz, mixed music, and improvised music. He also worked in popular music, and somehow enjoys creative coding. His music is available on various platforms, most notably empreintes DIGITALes. Pierre Alexandre is currently Professor of Composition and Improvisation at the University of Huddersfield (England, UK). When not musicking, he likes spending time with his family, reading prose, and going on long walks.

Dr. Yu-Chung Tseng is a professor of electronic music composition at Institute of Music at National Yang Ming Chiao Tung University in Taiwan.
His music has been recognized with selection/awards from Bourges Competition (Finalist, 2005), Pierre Schaeffer Competition (1st Prize in 2003, 3rd Prize in 2007), Cittàdi Udine Competition (Finalist, 2006), Musica Nova Competition (1st Prize in 2010, Mention award in 2009, Mention award in 2012), Metamorphoses Competition (2006, 2008, 2010), ICMC 2011 Asia-Oceania Regional Best Music Award and ICMC 2015 Asia-Oceania Regional Best Music Award.
Dr. Tseng's works have also received many performances at festivals and conferences, including ICMC (16 times selected), Musicacoustica (China, Beijing), SICMF (Korea, Soul), EMW (China, Shanghai), Schumann Festival (Germany, Dusseldorf), ACL(Japan, Israel, Singapore, Philippine, Taiwan), Musica Nova (Czech, Prague), Taiwan-France Exchange (Bordeaux, Hans, Pairs) and Chengdu International Electronic Music Festival..etc.
His music can be heard on labels including CDCM (U.S.A.), Discontact iii (Canada), Pescara (It.), Contemporanea (It.), Metamorphoses (Belgium), SEAMUS (USA), KECD2 (Demark), Musica Nova (Czech), ICMC 2011 DVD and ICMC 2015 CD.

Kari Vakeva (b 1957) is a Finnish composer and sound artist whose oeuvre includes orchestral works such as Symphony (1976-1979) which was partly recorded by Finnish RSO/Jorma Panula in 1982 and Elegia (1989-1990) performed by RSO Frankfurt/ Diego Masson in 2005, and electroacoustic works like Ray 6 (2002), Halo (2005-2007), p(X) (2011), Sundog i (2012-2015),

Sundog ii (2012-2015), I saw Eternity (2016), I kiss the Sky (2017-2018), and If Bees are few (2018). Electroacoustic works have been performed in ICMC, EMM and NYCEMF. An installation was exhibited in Blacksburg, VA. Early works are acoustic. From 2001 onward the electroacoustic works use computer to synthesize the sound: Csound, and from 2003 with MAL-d, an evolving synthesis software. He is a self-educated composer.

The music of composer and multi-instrumentalist **Dan VanHassel** has been described as "energizing" (Wall Street Journal), "a refreshing direction" (I Care If You Listen), and "an imaginative and rewarding soundscape" (San Francisco Classical Voice). His works create a uniquely evocative sound world drawing from a background in rock and metal, Indonesian gamelan, free improvisation, and classical music. VanHassel's compositions have been featured at top national and international contemporary music festivals, including the MATA Festival, Gaudeamus Music Week, International Computer Music Conference, Bowling Green New Music Festival, Shanghai Conservatory Electronic Music Week, and the Bang on a Can Summer Festival. Recordings of his works are featured on albums by the Now Hear Ensemble and Ignition Duo, as well as releases on the New Focus, Soundset, Pinna, and Thinking OutLoud labels. VanHassel's work has been awarded grants and awards from the Boston Foundation, Chamber Music America, the Barlow Endowment, New Music USA, and the Johnstone Fund for New Music. He was a founding member and artistic director of contemporary chamber ensemble Wild Rumpus in San Francisco until 2016, and is the founder and electric guitarist of the contemporary music quartet Hinge. VanHassel received degrees in composition from the University of California, Berkeley, New England Conservatory, and Carnegie Mellon University. He has taught composition and electronic music at MIT, Brandeis University, UC Berkeley, Clark University, and Connecticut College and is currently Assistant Professor of Composition at the Boston Conservatory at Berklee.

Igor Vatolkin is postdoctoral researcher at the Department of Computer Science, TU Dortmund, where he received a diploma degree in Computer Science and Music as a secondary subject and a Ph.D. degree. His main research interests cover the optimization of music data analysis with the help of computational intelligence techniques, in particular evolutionary multi-objective algorithms. He has co-authored more than 45 peer-reviewed papers and journal articles.

Juan Carlos Vasquez is an award-winning composer, sound artist, and researcher. His electroacoustic music works are performed constantly around the world and to date have premiered in more than 30 countries across the Americas, Europe, Asia, and Australia. Vasquez has received grants and commissions from numerous institutions, including the ZKM, the International Computer Music Association, the Nokia Research Center, the Ministry of Culture of Colombia, the Rensselaer Polytechnic Institute, the Arts Promotion Centre in Finland, the Finnish National Gallery, and CW+ in partnership with the Royal College of Music in London, UK. Some of the events and venues that have featured Vasquez's works include Ars Electronica (AU), the Ateneum Art Museum (FI), The New York City Library for Performing Arts (Lincoln Center, NY, USA), the Berklee College of Music, Matera Intermedia Festival (IT), Sonorities Festival Belfast (UK), BEAST FEaST (UK) and the New Music Miami ISCM Festival (USA) along with a large number of academic events held by universities across the globe.
As a researcher, Vasquez's writings can be found in the Computer Music Journal, the Leonardo Music Journal, and the proceedings of all the standard conferences in the field. Vasquez received his education at the Sibelius Academy (FI), Aalto University (FI), and the University of Virginia (US). His scores are published by Babel Scores, and his music is distributed by Naxos, MIT Press (US), Important Records (US), and Phasma Music (Poland). Finally, Vasquez is sponsored by Genelec (FI).

Andrea Veneri was born in Rome on 7/01/1994. In 2020 he graduated in Electronic Music at the Ottorino Respighi Conservatory. He studied at the Institute of Sonology of the Hague .He has been composing electronic music since 2014 with a greater interest in the possible interactions between the performing arts: film composition, music for theater and dance, live electronics and improvisations. He collaborates with various artistic realities, holding improvisation concerts, live sonification of silent films and working on theatrical performances. In the last two years he has performed in cities such as: Rome, Bologna, Lugo, Naples, San Sepolcro, Bassano del Grappa, Seneghe, Matera, Ravenna, Bisceglie, The Hague, Oostende, Moscow, Zadar, Vitlycke.

Jack Walker

Maarten van Walstijn in a Researcher and Lecturer in Music Technology and Sonic Art at the School of Electronics. Electrical Engineering and Computer Science, Queen's University Belfast. His interests include numerical methods for the emulation of musical instruments and analog audio processors, experimental characterisation of musical instruments under playing conditions, and room acoustics simulation and spatial audio.

Fang Wan is an intermedia composer and performer. Fang's primary research interests are sound design and interactive composition. Her compositions have been performed internationally including performances in Asia, North America, and Europe, and at major music festivals, such as the Future Music Oregon Concerts (FMO), the Kyma International Sound Symposium (KISS), the Society for Electro-Acoustic Music in the United States (SEAMUS) National Conference, MUSICACOUSTICA-BEIJING, the New York City Electroacoustic Music Festival (NYCEMF), Turn Up Festival, and the International Computer Music Conference (ICMC) where, in 2017, she was awarded the top prize for a student composition. The quality of Fang Wan's musical composition was again acknowledged when her work Origin for Wacom tablet and Kyma was selected to be in SEAMUS compact disc series. Fang received her BA in Electronic music from Xinghai Conservatory of Music, a MM in Intermedia Music Technology, and a D.M.A. degree in the Performance of Data-driven Instruments at the University of Oregon.

Chi Wang is a composer and performer of electroacoustic music. Her research and compositional interests include sound design, data-driven instruments creation, musical composition, and performance. Chi's compositions have been performed internationally including presentations at the International Computer Music Conference, the Society for Electro-Acoustic Music in the United States, Musicacoustica–Beijing, the New York City Electroacoustic Music Festival, New Interface for Musical Expression International Conference, Kyma International Sound Symposium, International Confederation of Electro-Acoustic Music, Electronic Music Midwest Festival, Third Practice Festival, and Electroacoustic Barn Dance. Chi's composition was selected for inclusion on the music from SEAMUS CD Volume 28. She is the recipient for the Best Composition from the Americas at the 2018 International Computer Music Conference. Chi received her D.M.A. at the University of Oregon. Chi is currently an assistant professor of music (composition: electronic and computer music) at the Indiana University Jacobs School of Music.

Rodney Waschka II is probably best known for his algorithmic compositions and his unusual operas. His music has been called "astonishing" and "strikingly charismatic" by Paris Transatlantic Magazine, "a milestone in the repertoire" by Computer Music Journal, and "fluent and entertaining" by Musical Opinion of London. More than two-dozen recordings of his

compositions and performances appear on record labels based in the USA, Canada, Portugal, England, Poland, and Australia. Waschka's mentors include Larry Austin, Robert Ashley, Paul Berg, Clarence Barlow, Konrad Boehmer, Thomas Clark, Charles Dodge, and George Lewis. Waschka is Director and Professor of Arts Studies at North Carolina State University.

Andreas Weixler Composer, performer, university professor, lecturer *1963, Graz, Austriateaching computer music as the director of the Computer Music Studio at the Anton Bruckner Private University as well as at Interface Culture in Linz and at the University of Music and Performing Arts Vienna.Andreas Weixler is currently emphasising in contemporary composition and improvisation with live electronics and interactive visuals.As an instrumentalist he plays electric guitar in a contemporary style including realtime electronics. Performances in Austria, Japan, Australia, Croatia, Slovenia, Denmark, Norway, Ohio, France and recently - online.Presentation of more than 200 works in 24 countries in over 230 international festivals and concert series with contemporary instrumental ensemble, computer music. Multiple selections for international conferences (NYCEMF, ICMC, NIME, SMC, ISEA, SICMF etc.) in Europe, Asia, South and North America. Andreas Weixler and Se-Lien Chuang run together the artists group Atelier Avant Austria.

Bihe Wen is a Chinese composer whose works span instrumental, electroacoustic music, and collaborative work for multimedia installations. Bihe's compositions have received several distinctions and prizes in international competitions, including the Musicacoustica-Beijing competition (2011, 2017), Monaco International Electroacoustic Composition Competition (2014), XXVIII Luigi Russolo Contest, Leibniz's Harmonies Prize (2016), MÉTAMORPHOSES 2016 Acousmatic Competition, XII° Destellos Competition 2019, Shanghai International Electronic Music Competition 2020, and Denny Awards (Denver International Festival of Arts & Technology) 2021. He obtained his bachelor's degree from the Central Conservatory of Music in China, and his master's degree from the University of North Texas, where he studied with Panayiotis Kokoras. He is a recipient of the GREAT Scholarships from the British Council and is currently a PhD candidate at the Sonic Arts Research Centre of Queen's University Belfast.

Jake Williams cut his teeth playing live electronics with the Warp-signed avant-jazz band Red Snapper, as well as creating music and sound design for major TV shows and the occasional well-received techno record. He currently works as a DJ, producer, researcher, and educator with particular interest in radical creative applications of digital DJ technology. He performs solo (Iklectik, Cafe Oto, New River, Centrale) and with a number of international audio-visual and live art collaborations (Mutek/EM15, Sonar, NIME, Open Out) and is currently undertaking a practice-based PhD at the University of Birmingham.
http://www.jfbwilliams.com

Nathan Wolek (b. 1977 Florida, USA) is a sound artist and audio researcher whose work encompasses electronic music, audio field recording, multimedia performance, and sound design. He is currently the Lydia Pfund Endowed Professor of Digital Arts at Stetson University in DeLand, Florida.
His music and sound installations feature rapid edits, gradually changing textures, and environmental recordings of personal significance. Among many electronic musicians and sound artists, he continues to be best known for the Granular Toolkit and LowkeyNW package, both popular software extensions to Cycling74's Max environment.
Wolek has presented his creative work across the United States, in addition to engagements in Korea, Germany, Norway, Switzerland, Canada and Brazil. His research has been featured at the ICMC, SEAMUS, CMS, ATMI and CENSE conferences.

He is also a two-time Fulbright Scholar, recognized twice by this prestigious academic exchange program (Norway 2012 and Scotland 2021).

Composer **WONWOORI** expands human potential with music and technology.
For composer WONWOORI, computer music is a medium for understanding the world around us and humans. The world we live in and humans are often so complex that it is difficult to understand. Composer WONWOORI put the data of the object to be interpreted into the sinusoidal wave, the smallest component in music, and analyzes it. In this process, he seeks inspiration for composition and strives to put the analyzed object at the center of the art medium. In particular, he is studying to expand human possibilities with music and technology, looking at objects that are easy to be excluded from art. Since 2019, he is studying the limited sound perception of hearing-impaired people and exploring what is the essence of music.
He majored in music technology at Korea National University of Arts(M.A.) and music composition at Kyunghee University. (Bachelor) He is currently working as a creator at Hyundai Motor Group's open innovation hub, ZER01NE.

Recipient of the 2022 Chamber Music America Michael Jaffee Visionary Award and hailed by The Guardian as "a cellist of power and grace" who possesses "mature artistry and willingness to go to the brink," cellist **Seth Parker Woods** has established a reputation as a versatile artist straddling several genres. In addition to solo performances, he has appeared with the Ictus Ensemble (Brussels, BE), Ensemble L'Arsenale (IT), zone Experimental (CH), Basel Sinfonietta (CH), Ensemble LPR, Orchestra of St. Luke's, and the Atlanta and Seattle Symphony's. His debut solo album, asinglewordisnotenough (Confront Recordings-London), has garnered great acclaim since its release in November 2016 and has been profiled in The New York Times, Chicago Tribune, LA Times, and The Guardian, amongst others. Woods recently joined the faculty of the Thornton School of Music at The University of Southern California as Assistant Professor of Practice - Cello and Chamber Music.

Dr. Jiayue Cecilia Wu is an award-winning scholar, musician, and audio engineer. She has 10 years of diversified work experience in music and media technology companies such as Universal Music Group, EMI Records, and Shazam. She holds a Master of Arts degree in Music, Science, and Technology from Stanford University and a Ph.D. degree in Media Arts and Technology with an emphasis in Computer Music from the University of California Santa Barbara. Her research focuses on how music technology can augment the healing power of music. Her music has been performed in Asia, the U.S., Canada, Australia, South Africa, Brazil, and Europe. Her multisensory HCI design projects have been exhibited at museums and international arts and engineering societies such as the National Museum of China, AES, and IEEE. Her audiovisual composition <Mandala> was selected by the Denver Art Museum for its permanent collection. Currently, Dr. Wu is an Assistant Professor at the University of Colorado's College of Arts and Media. She is the chairperson of the Diversity, Equity, & Inclusion (DEI) Committees at both Audio Engineering Society (AES) and Colorado MahlerFest. She also serves as a voting member of the Recording Academy (GRAMMY), the Editor-in-Chief of the Society for Electro-Acoustic Music in the US (SEAMUS), and the board director-at-large at the International Computer Music Association (ICMA).

Berk Yağlı (born 5 January 1999) is a Cypriot guitarist, composer, and producer. His mission with his music has been to talk about social, political, and philosophical matters interestingly to invite the listeners into reflecting on the topics. He has been active in the UK for the past couple of years due to his education in Music and Sound Technology (University of Portsmouth), Masters in Composition (University of Sheffield), and currently in University of the Arts London working under Adam Stanovic for his PhD topic: hybridity between metal and electroacoustic

music. During his masters, his main focus has been electroacoustic music composition, and currently, he is studying and working for potential hybridity of electroacoustic music with metal music. He also composed, produced, and released a cinematic/epic social commentary progressive metal album 'Symphony of Humanity' in 2021. His works have been presented in the UK and internationally.

Azeema Yaseen is a third-year Ph.D. candidate in the Department of Computer Science at Maynooth University, Ireland. Her bachelor's (2015) and master's (2017) degrees are in the field of Computer Science from Lahore College for Women University (LCWU), Pakistan. She has been a lecturer at the Department of Computer Science and Software Engineering at the University of Gujrat (UoG) and the University of Management and Technology (UMT), Lahore from 2016 to 2019 respectively. From her interest in the Internet of Things and big data during her master's to the current research work, she is concerned with the applications of the Internet of Musical Things (IoMusT) and Human-Computer Interaction. In her Ph.D. research, she is striving to create better interface and interaction frameworks in musical contexts where amateurs are the primary users. This research is also applicable to systems that employ multimodal interactions in the domain of digital wellbeing.

Yurina Yoshida: She is currently studying informatics at the Graduate School of Science and Engineering, Tokyo Denki University. Under the guidance of Prof. Shibayama, she is conducting creative expression research on spatial acoustic installations using LED tape lights with a multi-speaker system controlled by external sensor inputs.

Junhong Zhang, graduated from Sichuan Conservatory of Music, his main research direction is new media music, computer music, music production, etc. His works have been performed and won awards in academic activities such as ICMA Music Showcase: Asia 2022, ICMC2018, musicacoustica-Beijing2017 and 2019, NYCEMF2020/2022, WOCMAT2019, Denny Awards2021, etc.

Małgorzata Żurada (PL) is an interdisciplinary artist, researcher and art writer currently based in Zurich. She develops her works from esoteric theories and rituals of past and present. The main areas of her research are visual languages connected to various belief systems and means of coding secret knowledge. Recipient of various grants, including the scholarship from Ministry of Culture and National Heritage of the Republic of Poland in 2016. Works mainly with sculptural installations, digital image, text and sound.