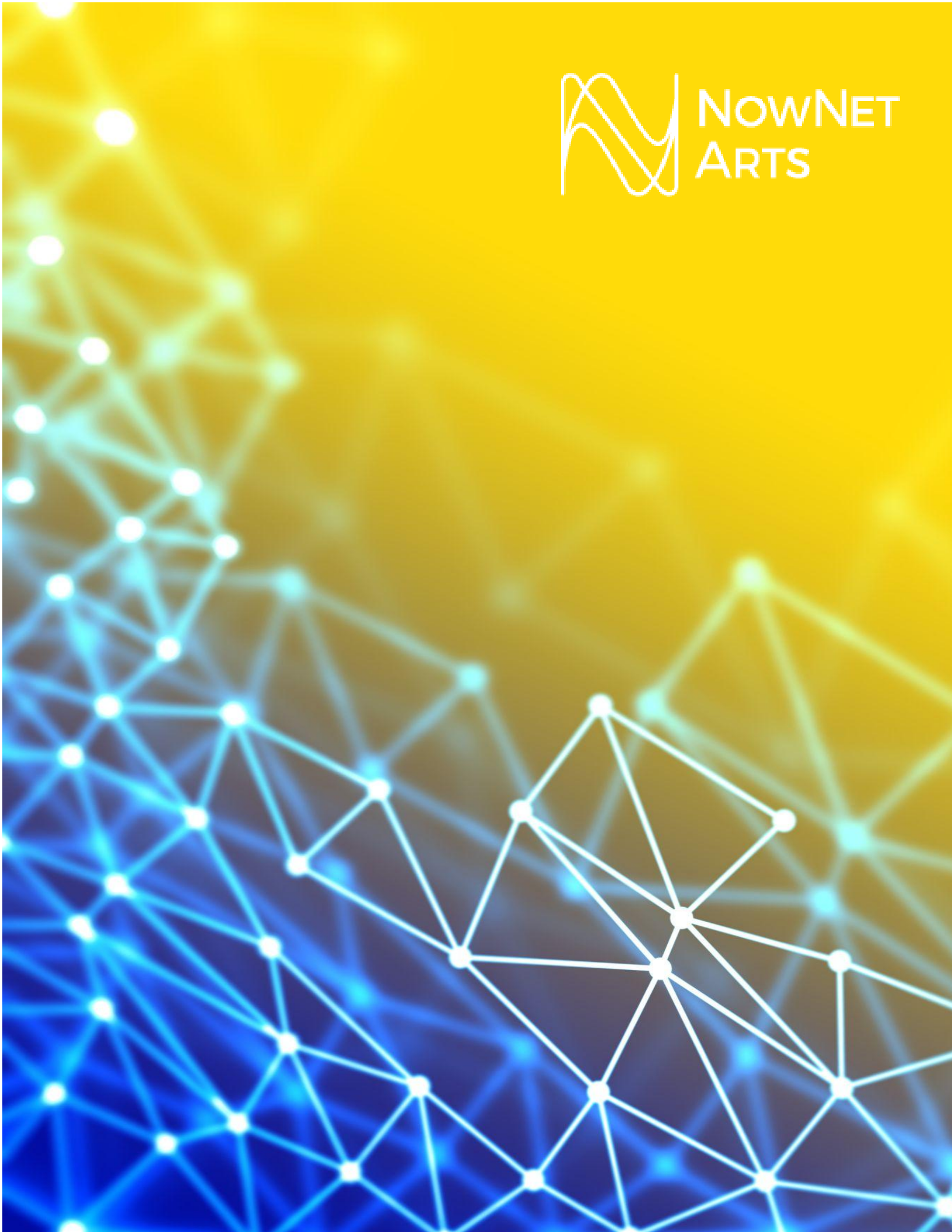




NOWNET
ARTS



NOWNET ARTS CONFERENCE 2021

Network Arts: Transformation of Distance

November 4-7, 2021 (Eastern Daylight Time Zone)

NowNet Arts Conference is an annual event for artists, technologists, researchers, educators, and industry professionals advancing topics in contemporary network arts for the ongoing development of the field. The 2021 theme “Network Arts: Transformation of Distance” refers to geographic distance and broader concepts such as physical, emotional, societal, environmental, and dimensional distance. What is distance? How is distance transformed in the field? How can the field address distance through diversity, equity, access, and inclusion? How can the geographic nature of network arts transform environmental relationships? Is there distance in loss on individual and collective scales that can be transformed? How can we develop artistic and technological components of these transformations in our field? The NowNet Arts Conference 2021 is a program of papers, workshops, presentations, panels, and concert demonstrations that feature this topic and generate new innovations for this work forward.

PRIMARY SITE

Institute for Advanced Computational Science (IACS), Stony Brook University, New York, USA

SATELLITE SITES

Center for Computer Research in Music and Acoustics (CCRMA), Stanford University, California, USA

LASALLE College of the Arts, Singapore

The Learning Environments virtual reality lab, University of Melbourne, Australia

Orpheus Institute, Ghent, Belgium

The Peabody Institute of the Johns Hopkins University, Maryland, USA

CONFERENCE COMMITTEE

Director: Sarah Weaver, NowNet Arts
Chris Chafe, Stanford University
Margaret Schedel, Stony Brook University

NOWNET ARTS CONTACT

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<https://nownetarts.org/nownet-arts-conference-2021>

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DAILY SCHEDULE

THURSDAY NOVEMBER 4

11:00AM Lab

12:00PM Paper: The Territory of Telematic and Networked Music: Dreams of the Singularity and Insurmountable Space
Eric Lemmon, Stony Brook University, New York

12:30PM Paper: Sonic proximity: locating oneself and the others within “a migratory journey”
Ximena Alarcón, United Kingdom

1:00PM Panel: Network Arts Technology Panel: JackTrip
Chris Chafe, Stanford University, California
Synthia Payne, California
Sarah Weaver, New York

2:00PM Concert Demonstration: Tuning to Rhythm
Mistah Isaac, Reinier van Houdt, Sirishkumar Manji, Caroline Nevejan, Daniil Pilchen, Rebekah Wilson, International

3:00PM Presentation: Transforming the Emotional Distance of Improvisation through Telematic Performance
Tom Zlabinger, York University, New York
Jarrod Ratcliffe, Mercy College, New York

3:30PM Presentation: The KaonCPT collective: building a musical culture of not-in-real-life performance through conducted live improvisation
Nicolas Bouillot, Society for Arts and Technology, Montreal

4:00PM Social

(5:00pm–8:00pm Break)

8:00PM Concert Demonstration: The New School Network Arts Ensemble
Sarah Weaver, director, The New School College of Performing Arts, New York

9:00PM Lab

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10:00PM Paper: Telematics and Training Performing Artists: An Approach for the Twenty-First Century
Peter Zazzali and Dirk Stromberg, LASALLE College of the Arts, Singapore

10:30PM Presentation: Synthesis Series: Music by Sarah Weaver and Collaborations
Sarah Weaver, NowNet Arts, New York

11:00PM Paper: allhands Software Tool: Bidirectional Transmission of controller data over the web
Michael Palumbo, Toronto

(11:30PM-12:30AM Break)

FRIDAY NOVEMBER 5

12:30AM Paper: Tectonic: Pannotia a telematic, interactive, generative-score
Lindsay Vickery and Stuart James, Edith Cowan University, Perth Australia

1:00AM Social

3:30AM Paper: Fusion solutions for remote performers: A Telepresence Stage
Steve Dixon, LASALLE College of the Arts, Singapore
Paul Sermon, University of Brighton, United Kingdom

4:00AM Concert Demonstration: From Gesture to Texture: Developing and transforming improvised music language in telematic performance.
Timothy O'Dwyer, LASALLE College of the Arts, Singapore
Georg Wissel, University of Cologne

5:00AM Concert Demonstration: Solstices by Georg Friedrich Haas
Ulrich Pöhl, director, INSOMNIO Ensemble, Netherlands

(6:00AM-11:00AM Break)

11:00AM Lab

12:00PM Concert Demonstration: Telemidi
Matt Bray, Edith Cowan University, Australia
Bernardo Varela, London

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12:30PM Paper: Puentes Telemáticos / Telematic Bridges: Experiments in intercultural, telepresent and creative music pedagogy

Michael Dessen, University of California Irvine

Juan David Rubio, University of Texas at El Paso

1:00PM Presentation: De-territorialization and Re-territorialization of the Band in Creating an album Online

Gareth Dylan Smith, Boston University

David Knapp, Syracuse University

Bryan Powell, Montclair State University

1:30PM Presentation: Virtual Is the New Real: Experimental Performances in the Virtual Era of the COVID-19 Pandemic

Ioannis Sidiropoulos, University of Melbourne

2:00PM Paper: "Thrilling and Frustrating": A Case Study of Networked Music Performance

Seth Adams, Northwestern University

2:30PM Paper: A Spectrum of Online Rehearsal Applications: A Potential Means for Cultural Connection

Dana Kemack Goot, Indiana University-Purdue University at Indianapolis

3:00PM Workshop: How-To Session: A Pretty-Good Jacktrip Toolkit

Mike O'Connor, Wisconsin

4:00PM Presentation: Peabody Institute Music Studios

Theron Feist, Peabody Institute

4:30PM Social

(5:30PM-8:00PM Break)

8:00PM Lab

9:00PM Panel: Reimagining Music Performance with Immersive Reality Technologies

Ben Loveridge, Margaret Osborne, and Solange Glasser, University of Melbourne

10:00PM Presentation: Comparing singing in virtual reality and video conferencing

Ben Loveridge, University of Melbourne

11:00PM Concert Demonstration: In Front of the Body

Dirk Stromberg, LASALLE College of the Arts, Singapore

Michal Seta, Society for Arts and Technology, Montreal

D. Andrew Stewart, University of Lethbridge, Alberta

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SATURDAY NOVEMBER 6

12:00AM Concert Demonstration: Networked Music Performance
Federico Cámara Halac and Jacob Kopcienski, Ohio State University
Berenice Llorens, Argentina

1:00AM Social

(2:00AM–11:00AM Break)

11:00AM Lab

12:00PM Concert Demonstration: NowNet Arts Lab Ensemble
Sarah Weaver, director, International

1:00PM Concert Demonstration: Say That Again Ensemble
Anne Sophie Andersen, Cassia Carrascoza, Viv Corringham, Luisa Muhr, Diane Roblin, International

1:30PM Concert Demonstration: Telematic Immersion and Collaborative Performance
Cássia Carrascoza Bomfim, University of São Paulo
Paulo Chagas, University of California Riverside

2:30PM Concert Demonstration: “I am reaching out...”
Anna Pasztor, New York and Gloria Damijan, Austria

3:30PM Concert Demonstration: UnStumm – Augmented Voyage
UnStumm directed by Nicola Hein and Claudia Schmitz with Katherine Liberovskaya, Dafna Naphtali, Lillevan, and Seth Cluett, New York and Berlin

4:30PM Social

(5:30PM–8:00PM Break)

8:00PM Lab

9:00PM Concert Demonstration: NowNet Arts Lab Ensemble
Sarah Weaver, director, International

10:00PM Concert Demonstration: COINCIDENT: Strategies for Telematic Collaborative Creation informed by Themes of COMMUNICATION, ISOLATION, and DISTANCE
Scott Miller, director, Ensemble Zeitgeist, St. Cloud State University, Minnesota

11:00PM Concert Demonstration: Electo Electro: Whitewash
Mike Richison, Monmouth University

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SUNDAY NOVEMBER 7

12:00AM Concert Demonstration: As of So Little Space
Michal Seta, director, Kaon'CPTs, International

1:00AM Social

(2:00AM-11:00AM Break)

11:00AM Lab

12:00PM Paper: Blended Learning in Performing Arts/ Stage Management - Understanding Stage Management in the 21st century in Australia - A Preliminary Survey
Teresa Fok, Edith Cowan University, Australia

12:30PM Paper and Concert Demonstration: The artefacts of 'not here'
Juan Parra Cancino, Jonathan Impett, Nicholas Brown, Magno Caliman, Daniela Fantechi Orpheus Institute Belgium

1:30PM Concert Demonstration: The Sonic Arts Ensemble
Marc Ainger, director, Ohio State University
Ann Stimson, Marc Ainger, Scott Deal, Oded Huberman (live-streaming)
Special Guests, Atelier Avant (Austria): Se-Lien Chuang, Andreas Weixler

2:30PM Presentation: Monarch Sanctuary
James Ilgenfritz, University of California Irvine
Jiryis Ballan, California
Miyama McQueen-Tokita, Tokyo
Yuri Zupancic, Paris

3:00PM Concert Demonstration: Construction/Deconstruction - A concert demonstration using Raspberry Pi's
Gloria Damijan, Austria
Jane Wang, Boston
Ximena Alarcon, United Kingdom

4:00PM Concert Demonstration: The Core
Constantin Basica, Chris Chafe, Henrik von Coler, Fernando Lopez-Lezcano, Juan Parra Cancino, Klaus Scheuermann, Christopher Jette, International

5:00PM Social

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FULL SCHEDULE

THURSDAY NOVEMBER 4

11:00AM Lab

12:00PM Paper: The Territory of Telematic and Networked Music: Dreams of the Singularity and Insurmountable Space
Eric Lemmon, Stony Brook University, New York

Telematic music and networked music are performance practices that have developed alongside the expansion and liberalization of the internet, digital and networked technologies, and the physical and protocological infrastructures that support them. This paper seeks to relate the networking technologies that both performance practices mobilize to a broader critical literature on networked and digital culture as it pertains to distance, time, virtuality, and latency. It will first provide a broad overview of recent conceptual works such as Manuel Castels' *The Rise of the Network Society* and Tiziana Terranova's *Network Culture*, as well as the canonical critiques offered by cultural theorists Marshall McLuhan and Paul Virilio. The latter two respectively concluded that mass media and a hyper-connected society had reduced a disparate globe with variegated temporalities into a space that is the size of a "village" and has a singular "time system" where everything occurs all at once (McLuhan 1964; Virilio 1995). From these theoretical works, it is often concluded that these changes in distance and temporality coincide with or bring a variety of negative effects to bear on society, such as the usurpation of traditional labor relationships for late-stage capitalist exploitation, broadscale political disinformation campaigns, or social isolation. Since both telematic and networked music are embedded within networked modes of production and networked cultures, I argue, these critical reflections on space and temporality also offer useful frameworks through which to consider contemporary musical practices and communities.

Through a closer examination of human auditory faculties, the physical reality of latency, and the methods and modes of production that practitioners have grappled with to ameliorate the unavoidable effects of latency on making music over networks, the paper will further show that networked music and telematic music—as artistic practices—push back on, complicate, and resist the temporal and spatial singularities imposed upon society by our hyper-connected and globalized networks. Here, the work on latency by Sarah Weaver, Chris Chafe, Nathan Schuett (among many others), as well as the work on compositional techniques within latency-rich environments by Robert Rowe, Reid Oda, Alexander Carôt, and Juan Pablo Cáceres and Alain Renaud (also among many others), will offer the starting point for a rich and variegated discussion of networked and telematic creative practices today.

Composer Eric Lemmon's artistic practice and academic research is preoccupied with the politics that circumscribe and are woven into our musical technologies and

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institutions. His music has been reviewed by the New York Times and featured on WQXR's Q2, and has been performed in venues ranging from underground bars (le) Poisson Rouge and SubCulture to the DiMenna Center for Classical Music and FIGMENT arts festival on Governor's Island. Eric's work has been recognized locally and internationally with grants and residencies like MetLife's Creative Connections Grant, UMEZ and LMCC Arts Engagement Grants, multiple Puffin Foundation Grants, a Tofte Lake Center Emerging Artist Residency, a Can Serrat International Artist Residency, a Westben Performer-Composer Residency, and ConEd's Exploring the Metropolis Residency. Further, he has been awarded a Mancini Fellowship, a long-term fellowship from the German Academic Exchange Service (DAAD), Stony Brook University's Presidential Dissertation Completion Fellowship, and a Fulbright Award for his artistic research and profile as a performer. Eric has written works for Yarn|Wire, Cadillac Moon Ensemble, Jacqueline LeClaire, and The Chelsea Symphony. He is a member of the experimental and technology-focused music collective Ensemble Decipher and is currently a Ph.D. candidate in Music Composition at Stony Brook University.

12:30PM Paper: Sonic proximity: locating oneself and the others within "a migratory journey"

Ximena Alarcón, United Kingdom

This presentation focuses on the artistic exploration of listening experiences, and the social and environmental dimensions of distance that emerged for people when using the INTIMAL App®. The INTIMAL App is a mobile phone application that invites people to listen to their "migratory journeys", by walking in their surroundings, to sense place and sense presence, alone and with others across distant locations. The App departs from the findings and original designs of the INTIMAL system, a physical-virtual embodied system for relational listening that explores the body as an interface that keeps memory of place, in the context of human migration, and within the practice of telematic sonic performance.

The INTIMAL App synchronously senses users' walking rhythms, in different locations, to be sonified and perceived as breathing: an embodied telepresence. Within the journey, the app also reveals excerpts of stories of migration that might trigger a response from the listener, who can record their voices and be heard by others who are walking: building a path with words and memories, as relations emerge between voices and sound frequencies.

In this first iteration the INTIMAL App revealed fragments of migratory journeys from Colombian migrant women living in Europe. These stories are a reflection on female narratives of migrancy, that might connect with other women in a different context. My artistic intention was to open new paths and insights in people's daily limited walks during and after the pandemic lockdown.

I worked in collaboration with Liliana Rodriguez, a Service Designer, and Kieran Harte, a mobile app Programmer, to implement and test the app with ten women from

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different parts of the world living in the city of Bath (UK). Experiencing the app in groups, first without seeing each other, and then connecting outdoors in the same physical location, following the COVID social distancing measures, the women's listening experiences suggest to me the emergence of a "sonic proximity" that might reduce existing perceived distance between: 1) stories of "migrants" and "local" women; 2) the environmental distance between humans and other beings in the built and natural environment; 3) the physical distance and virtual encounters imposed by the pandemic.

This sonic proximity, potentially brings people and environments closer through tacit and overt sonic links within the locality, the self and the others, in the midst of social and environmental global rapid transformations. As people walk to activate the app, using the body as a playback and pause button, and rotating the body to change directions as if a tuning dial, I suggest that the INTIMAL App becomes an interface for relational listening that expands people's listening experience along with their understandings of migration. I infer that this technological listening tool embedded in an artistic improvisatory experience of an embodied "migratory journey", helps to raise awareness of how close we really are, how deep our connections to the self and others can be, and how listening within relations in a networked listening environment can spark social and environmental transformations.

Ximena Alarcón is a sound artist and Deep Listening® certified tutor, with a PhD in Music Technology and Innovation, interested in listening to sonic migrations. She creates telematic sonic improvisations using Deep Listening, and interfaces for relational listening. She has developed her artistic career mainly through practice-led research to understand sensorially her and others' migratory experience, as if in search of a collective interface that holds such sonic in-betweenness. Her major artistic research projects are: the online environment Sounding Underground (IOCT-DMU, The Leverhulme Trust Fellowship 2007-2009); the telematic performances Networked Migrations (CRiSAP - UAL, 2011-2017); and INTIMAL: an "embodied" physical-virtual system for relational listening in telematic sonic performance (RITMO-UiO, 2017-2019, Marie Skłodowska Curie Individual Fellowship). She currently leads the INTIMAL co-creation collective of Latin American migrant women in Europe, and has developed the INTIMAL App® for people to listen to their "migratory journeys" (The Studio Recovery Fund 2021). Ximena has been improvising with spoken word and voice in the NowNet Arts Lab Ensemble since 2020. <http://ximenaalarcon.net>

1:00PM Panel: JackTrip Network Audio Technology

Chris Chafe, Stanford University, California

Synthia Payne, California

Sarah Weaver, New York

JackTrip is a system for high-quality low-latency audio network performance over the Internet. The panel will discuss updates and current developments for JackTrip.

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Chris Chafe is a composer, improviser, and cellist, developing much of his music alongside computer-based research. He is Director of Stanford University's Center for Computer Research in Music and Acoustics (CCRMA). In 2019, he was International Visiting Research Scholar at the Peter Wall Institute for Advanced Studies The University of British Columbia, Visiting Professor at the Politecnico di Torino, and Edgard-Varèse Guest Professor at the Technical University of Berlin. At IRCAM (Paris) and The Banff Centre (Alberta), he has pursued methods for digital synthesis, music performance and real-time internet collaboration. CCRMA's jacktrip project involves live concertizing with musicians the world over.

Synthia Payne has a 15-year history with JackTrip, beginning as a grad student who collaborated with JackTrip creators Chris Chafe and Juan-Pablo Caceres, and musical pioneer, Pauline Oliveros, Cynthia is a seasoned vocalist and musical improviser with experience producing and performing in hundreds of online music sessions over the years. When Jacktrip became a critical need for those wanting to continue playing music together during the COVID-19 pandemic, Cynthia was thrilled to become a consultant and support agent for JackTrip including CCRMA's open-source JackTrip software and the JackTrip Labs' Virtual Studio device. She also became an instructor for JackTrip Training through NowNet Arts. Cynthia holds an MFA in Digital Arts and New Media from the University of California, Santa Cruz.

Sarah Weaver, Ph.D. is a New York-based contemporary composer, conductor, technologist, educator, and researcher working internationally as a specialist in large ensemble and network arts. Her work innovates contemplative concepts on network, synchrony, synthesis, and interconnection for artistic and social purpose. Weaver has composed solo, chamber, and large ensemble works for groundbreaking musicians for twenty-five years, integrating influences of classical, jazz, world, contemplative, electronic music, and individual music languages of performers. She is an innovator in network arts advancing live performance via the internet by musicians and artists in different geographic locations. Weaver is the Director of NowNet Arts and Sarah Weaver Ensemble, Executive Director of JackTrip Foundation, Editor of the Journal of Network Music and Arts (JONMA), and Faculty of The New School College of Performing Arts.

2:00PM Concert Demonstration: Tuning to Rhythm

Mistah Isaac, Reinier van Houdt, Sirishkumar Manji, Caroline Nevejan, Daniil Pilchen, Rebekah Wilson, International

On May 20, 2021, Source Elements facilitated the opening concert of the Dutch pavilion at the International Architecture Biennale in Venice. The concert program was built around the research on rhythm conducted by the Chief Science Officer for the City of Amsterdam, Professor Dr. Caroline Nevejan. The musicians—Mistah Isaac, Reinier van Houdt, and Sirishkumar Manji—came together from different parts of the world into the virtual space developed by Source Elements to create three collaborative compositions reflecting on the topic of rhythm as a value for survival.

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The questions that were posed to the musicians included: how do you share the first beat? How do you tune to the rhythm of the other and, conversely, how do you allow for the other to join your rhythm? How can you play and listen at the same time? How do you deal with mistakes?

The recording of the concert, along with the research programme of the Dutch pavilion, is published on the official website of the pavilion <https://whoiswe.nl/>

During the development of the project, Daniil Pilchen (Source Elements) took a series of interviews with the musicians, covering a range of topics that included their musical upbringing, their approach to rhythm, improvisation, collaborative performance and composition, and networked music performance. The interviews are available on the Open Research Amsterdam website:

<https://openresearch.amsterdam/nl/page/70235/opening-concert---tuning-to-rhythm>

The concert demonstration will include the live performance of the pieces the musicians created for the project accompanied by the conversation with Caroline Nevejan and the Source Elements CEO, Rebekah Wilson.

Mistah Isaac was born on May 1st, 1986, in an eccentric neighborhood called Cazenga in Luanda, the ever-growing capital of Angola. He came to Europe by the age of 11 and fell in love with the sounds of Miles Davis, Miriam Makeba, and Bob Marley. By the age of 16, he chose the guitar to compose and share his feelings and stories. From that age, Mistah Isaac became an international musician, traveling and sharing his music throughout the four corners of the globe. With his music, he mixes African rhythm with Western influences, creating a bond between different cultures. He played in Brazil several times: in Salvador, São Paulo, Rio de Janeiro, and Belo Horizonte, opening for the international singer Donavon Frankenriter. He played in Berlin at the Exenberg Theater and in Italy, Belgium, France, Hamburg, and Spain, among others. His most recent work is called "Third World Peace."

Reinier van Houdt started working with tape recorders, radios, objects, and various string instruments at a young age. He studied piano at the Liszt Akademie in Budapest and The Royal Conservatory in The Hague. He developed a fascination for matters that escape notation: sound, timing, space, physicality, memory, noise, environment—points beyond composition, interpretation, and improvisation. He has built himself an unusual repertoire that consistently resulted from personal quests: from collaborations with composers and musicians, from research in archives, from the composing and staging of music performances or from unorthodox studies of classical music, and from endless tape recordings he made since the eighties. Aside from his own music, he premiered music by Robert Ashley, Alvin Curran, Kaikhosru Sorabji, Francisco López, Christian Marclay, Charlemagne Palestine, Yannis Kyriakides, Maria de Alvear, Jerry Hunt, Michael Pisaro, Walter Marchetti, Jürg Frey, Nomi Epstein. He has also worked with Annea Lockwood, John Cage, Alvin Lucier, Luc Ferrari, Peter Ablinger. Reinier van Houdt plays in David Tibet's Current 93, where he worked with

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Nick Cave, John Zorn, Anohni, Jack Barnett. He is also one of the moving forces behind the experimental music collective MAZE. He performed in such diverse venues as The Roulette & the Issue Project Room in New York, Colegio Ildefonso Mexico City, Café Oto & Queen Elizabeth Hall in London, DOM in Moscow, Setagaya Gallery Tokyo, Paradiso Amsterdam, Apollohuis Eindhoven, the New Library in Alexandria Egypt, REDCAT & the Wulf in Los Angeles, Mills College Oakland, Non Event Boston, Kuryokhin Center in St Petersburg, Trafo Budapest, Nuits Nomadiques in Paris, Brut in Wien, HAU and Volksbühne in Berlin, Empty Gallery Hong Kong, Tramway Glasgow and Klangraum Düsseldorf. Appearances in festivals CTM Berlin, Meltdown London, Angelica Bologna, Holland Festival, Warsaw Autumn, Incubate Tilburg, UNSOUND Poland, Primavera Barcelona, November Music Den Bosch, and many others. He won an award at Ars Electronica Linz 2012 with Francisco López, the Prix Europe 2015 with the Andcompany&Co and the first prize at Videoex 2019 with filmmaker Takashi Makino.

Sirishkumar Manji has tabla in his blood. He is a third generation Indian classical tabla maestro, who was introduced to the tabla at the age of seven by his late father and teacher, Pandit Bhagwanji Manji, a highly gifted vocalist, multi instrumentalist, and a disciple of the great singer Pandit Omkarnath Thakur. His family home was always buzzing with music, a never ending flow of artists came through the door, sharing stories, food and of course playing together. Sirishkumar has a unique gift for bringing the tabla into diverse musical situations. He has worked with an incredible variety of musical talents and performers, combining Indian classical flavours with jazz, contemporary classical, pop, the avant garde and musical traditions from across the world. His open-minded and creative approach has seen him tour world wide, working with some of the brightest talents.

Prof. dr. Caroline Nevejan is a researcher and designer who has been involved with the emerging network society and digital culture since the 1980's. Nevejan is professor by special appointment with the Amsterdam School for Social Science Research, University of Amsterdam (2018-2023). Since 2017 she has been appointed Chief Science Officer of the city of Amsterdam. In 2016 and 2017 Nevejan is a research fellow with the Amsterdam Institute for Advanced Metropolitan Solutions where she is the principal investigator of the City Rhythm study, which identifies and analyses rhythms in physical neighbourhoods and in the data about these neighbourhoods in 6 cities of the Netherlands (Den Haag, Rotterdam, Amsterdam, Zaanstad, Zoetermeer en Helmond). Before Nevejan was associate professor with the Participatory Systems Initiative at Delft University of Technology. Nevejan's interdisciplinary research focuses on witnessed presence as a fundamental communication structure that defines how trust is built or breaks down. To this end she developed the YUTPA framework, which supports the analyses and design of trust in social, organisational and business contexts. Methodologically Nevejan focuses on artistic research and research through design. From March 2016 to September 2017 Caroline Nevejan was chair of the Centre of Investigative Journalism at Goldsmiths, University of London, where she was curator of the Logan symposium in 2014 and 2016. The Logan Symposium aims to build alliances against surveillance, secrecy and

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mentorship and brings together an impressive network of investigative journalists and technological hacktivists.

Daniil Pilchen is a composer based in The Hague. Graduated from Royal Conservatoire The Hague in 2020. Daniil's musical practice is closely intertwined with his research into the confusing and unpredictable nature of the human experience of time as an immeasurable and indivisible continuity. Such an understanding of time offers a special way of organizing interpersonal relationships between musicians and audiences in his pieces, embracing and exploring the inherent precarity of each human and the inescapable uncertainty of the relationship between them. In April 2020, he organized the networked edition of the Conservatoire's annual Spring Festival. Since the same time, works on the Networked Music Performance Library for Source Elements.

Rebekah Wilson is the technical director and one of the co-founders of SourceElements, which created and markets the Source-Connect and Source-Live software for remote audio recording and real-time collaboration for sound professionals. She works daily with international voice talent, studios and musicians to understand and serve the direct needs of remote sound production and recording. The magic of music and science combined, which forms the backbone of her (and her co-founders') training, has kept the spark alive for Source Elements since it was founded in 2005. Rebekah believes that the future is full of wonderful options. Her main goal with SourceElements is to continue improving network collaboration software so she can travel as widely as she does now: she's lived in more than 10 countries and loves to ask (and answer) "where are you?" every day.

3:00PM Presentation: Transforming the Emotional Distance of Improvisation through Telematic Performance

Tom Zlabinger, York University, New York

Jarrod Ratcliffe, Mercy College, New York

This presentation reflects on the experiences of the presenters in mounting telematic student performances in the spring and summer of 2021. The York College Jazz Band, after having their spring 2020 concert cancelled, and not meeting at all in the fall of 2020, started up again, telematically, in the spring of 2021, with students participating in weekly rehearsals, independent sectionals, and the live performance, while scattered across New York City's five boroughs and Long Island. At the University of New Haven, with many students enrolled in the Music Technology course of study, a special class was offered in the summer of 2021 where students could utilize low-latency audio tools, and explore methods for remote music collaboration. As part of this class, students executed remote production work, and rehearsed and performed as a telematic ensemble, while spread across multiple states (Connecticut, New Jersey, Washington, D.C., Massachusetts, and Maine). In both performances, there was certainly transformation across geographical distance. There was also transformation due to the technical learning curve. Perhaps the most profound

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transformation, however, was the journey that several students embarked on to improvise.

All work in both ensembles was executed with a combination of tools, including low-latency audio tools and Zoom for video. At a time when disparities of access to various technologies has made the pivot to remote and hybrid instruction daunting for many educational institutions and working remotely has been a significant challenge for many music educators, the presenters have found positive aspects of performing and working with students telematically, becoming fruitful ground for developing students' skills as musicians and improvisers.

Using student anecdotes and observations by the teachers, the presentation will discuss the students' development and reactions to rehearsing and performing telematically. The presentation will discuss ideas of inclusivity, access, and sustainability in regard to telematic performance and how to implement pedagogical strategies to create a supportive space that promotes student development and reduces the fear of improvisation. As Jason Robinson asserts in his 2013 TEDx talk, telematic performance is well-suited for improvisation. This presentation affirms Robinson's assertions and provides suggestions to further develop the potential of teaching improvisation in a telematic space.

Dr. Tom Zlabinger is a bass player and ethnomusicologist. He directs the York College Jazz Band, teaches popular music, and hosts a weekly jam session at York College / CUNY. Under his direction, his student ensembles have been invited to perform at Minton's Playhouse, the Louis Armstrong House, the Vision Festival, Flushing Town Hall, and as finalists to the Charles Mingus Festival. He has also been the guest director of jazz ensembles at Adelphi University, the New York City High School Honors Festival, and the New York City All-County Middle School Festival. Though born and raised in the U.S., Dr. Zlabinger graduated from high school in Vienna, Austria and the experience deeply informed his international perspective. Dr. Zlabinger holds a B.A. in music from Grinnell College, an M.A. in jazz performance from Queens College, and a Ph.D. in ethnomusicology from the Graduate Center / CUNY, with his dissertation entitled FREE FROM JAZZ: The Jazz and Improvised Music Scene in Vienna after Ossiach (1971-2011). His areas of research include psychedelic music, improvisation, and the depiction of musicians and music making across various media franchises, such as the Big Lebowski, Neil Gaiman's Sandman, the Peanuts comic strip, the Simpsons, Star Wars, Star Trek: The Next Generation, and others. He has published, lectured, and performed both nationally and internationally.

Jarrold Ratcliffe tells stories through immersive media, sound, and computational technology. He has done a variety of work in audio production, music composition, sound and creative technology design. He has an MM in Music Technology from NYU and is currently on the music faculty at Mercy College. Jarrold has worked in several roles at music, television and post-production studios, including recording, editing, mixing, mastering, and producing works for commercial release. He co-founded IN

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MEDIAS ARTS, a multi-medium production company and artist collaborative, in 2016. There, he conceives projects and productions to bring together artists from multiple mediums to create narrative-based interdisciplinary works. Jarrod is also a designer for live performances, including sound design, live sound and creative technology design encompassing interactive systems with various sensors, live visuals, projection, and projection mapping. He has designed for live theater, opera and installation pieces. Jarrod is interested in immersive media, networked and telematic arts, user experience design and user interface metaphors in music creation, performance and production contexts. He has presented his work at the Conference on New Interfaces for Musical Expression, the IMPACT Conference at NYU, and the Audio Engineering Society Convention.

3:30PM Presentation: The KaonCPT collective: building a musical culture of not-in-real-life performance through conducted live improvisation
Nicolas Bouillot, Society for Arts and Technology, Montreal

We describe a Networked Music Collective for online live performance events. Four characteristics of live performance (bodies, space-and-time, musical culture and social process) are identified as the conceptual and technological basis of our approach. Our recent distributed improvisations *Perripplayear* and *As of So Little Space* are used to illustrate these concepts and to describe the technology stack we employed. The Kaon'CPT collective uses diverse instrumentation including acoustic and electronic instruments, voice and Digital Musical Instruments (DMIs). Its members span 12 time zones and their improvisation is conducted via a custom distributed score.

Departing from our previous experience and faced with the new global context of shifting music performance culture, we initiated a network music collective in which we sought to reduce the need of formal process and advanced musical knowledge as determinants/necessary/requirements for participation. We will describe the concepts and tools we used in our compositional approach, including shared tempo, a dynamic score and a virtual space, all glued together with network technologies. They help structure the collective sound aesthetic and create a spontaneous habitus that allows the individuals in the collective to have a significant impact on the performance, and possibly a better sense of engagement with the ensemble.

The presentation will include a qualification of IRL music performance, along with a comparison with the non-IRL context. From these learnings we will describe the building of the Kaon'CPT musical culture, rooted in both the *Perripplayear* improvisation and its technical set up. The presentation concludes with a discussion about this experience, and next steps about the compositional process.

Nicolas Bouillot is research codirector at the Society for Arts and Technology (SAT). After obtaining a Ph.D. from the Conservatoire National des Arts et Métiers de Paris (CNAM-CEDRIC) in 2006, he became postdoctoral researcher at McGill University in the

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Shared Reality Lab (SRL), along with being a postdoctoral member of the Centre for Interdisciplinary Research in Music Media and Technology (CIRMMT). He is the main developer of *switcher* (a multichannel streaming engine) and *shmdata* (a library for sharing data streams among applications), and initiated *SATIE* (a 3D audio rendering engine for heterogeneous speaker configurations). He likes distributed music performances, programming, team-based working, reviewing others' research papers, audio signal processing, writing research papers, networks and distributed systems, composing and improvising music, data streaming, writing third person bio, and playing multiple musical instruments (but not necessarily simultaneously).

4:00PM Social

(5:00pm–8:00pm Break)

8:00PM Concert Demonstration: The New School Network Arts Ensemble
Sarah Weaver, director, The New School College of Performing Arts, New York

The New School Network Arts Ensemble will give a concert demonstration of contemporary chamber pieces by the students and discuss approaches to the medium.

The New School Network Arts Ensemble is a new hybrid course directed by Sarah Weaver at the college for graduate and undergraduate students across the College of Performing Arts.

Personnel: Andres Chilama (guitar), Hayun Chung (electronics, synthesizer), Ching-Yun Huang (violin), Young Eun Jeong (piano), Dean Oaks (trumpet), Yanqiu Zhang (violin)

9:00PM Lab

10:00PM Paper: Telematics and Training Performing Artists: An Approach for the Twenty-First Century
Peter Zazzali and Dirk Stromberg, LASALLE College of the Arts, Singapore

Telematics--or telepresence-- is a viable resource for training artists in the twenty-first century. It jointly lends to interdisciplinarity, entrepreneurism and cross-cultural exchanges. In addition to training actors for stage and on-camera careers, or musicians for standard recordings and gigs, arts programs might consider learning strategies that deploy digital technology as a viable resource for teaching and learning. In doing so, programs can develop artistic entrepreneurs who are capable of shaping the industry's future and its impact on society. Thus, this paper argues that cyberspace offers important opportunities for training artists in the twenty-first century. In addition to finding success in the industry such an approach enhances disciplinary diversity, cultural inclusion, and social justice.

A practice-based research model will be the basis for our findings. In April of 2021, the authors and their students co-created a telematic theatre experiment with peers from the Zurich University of the Arts and the Escola de Teatro in Brazil. From its

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three-month planning phase to the two weeks of the telematic workshop, the authors will present their firsthand account of the challenges and triumphs of their experience and that of their students. The paper will therefore present telematic theatre-making as a useful strategy for meeting and exceeding learning outcomes commensurate with traditional—in studio—methods and pedagogies toward demonstrating that telepresence is important and relevant to training performing artists in the twenty-first century.

Peter Zazzali is an actor trainer, stage director, and theatre scholar who is Director of the Acting Program at Singapore's LASALLE College of the Arts. Prior to that he was an Associate Professor at the University of Kansas, where he also served as Associate Chair of the Department of Theatre and Dance and Artistic Director of the Kansas Repertory Theatre. Zazzali has acted, directed, and taught throughout the world. His credits include the Western Australian Academy for the Performing Arts, Queensland University of Technology, National Theatre School of Ireland, and a wide range of institutions in the US. In 2019, he was a Fulbright Fellow at New Zealand's national drama school (Toi Whakaari). His scholarship on actor training has appeared in numerous peer-reviewed journals such as Theatre Research International, Theatre Journal, and Theatre Topics, among others. He has received praise for his book, *Acting in the Academy: The History of Professional Actor Training in US Higher Education* (2016). In July of 2021, Routledge released his sequel *Actor Training in Anglophone Countries: Past, Present, and Future*. Zazzali holds a BFA (CalArts) and an MFA (University of Delaware) in Acting and a Ph.D. in Theatre Studies (CUNY Graduate Center).

Dirk Johan Stromberg is an American Sound Designer, Audio Technology, Maker, Improviser, and Production Designer. His body of work explores the dynamic interaction between performer and technology in performance practice. Designing both hardware and software has led to the development of a variety of interfaces, synthesis techniques, installation works, electro-acoustic instruments, and interdisciplinary production works.

10:30PM Presentation: Synthesis Series: Music by Sarah Weaver and Collaborations
Sarah Weaver, NowNet Arts, New York

"Synthesis Series: Music by Sarah Weaver and Collaborations" is a presentation on contemporary network arts works premiered in May 2021 with the NowNet Arts Ensemble. "Synthesis Series" is a collection of solo, chamber, and large ensemble pieces on contemplative concepts of networked synchrony across realities, transformation of distance, and synthesis activation for healing and transcendence. Weaver will present score excerpts, performance excerpts, artistic and technological strategies, and future work on the series for upcoming performances.

Sarah Weaver, Ph.D. is a New York-based contemporary composer, conductor, technologist, educator, and researcher working internationally as a specialist in large ensemble and network arts. Her work innovates contemplative concepts on network, synchrony, synthesis, and interconnection for artistic and social purpose. Weaver has composed solo, chamber, and large ensemble works for groundbreaking musicians for twenty-five years, integrating influences of classical, jazz, world, contemplative, electronic music, and individual music languages of performers. She is an innovator in network arts advancing live performance via the internet by musicians

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and artists in different geographic locations. Weaver is the Director of NowNet Arts and Sarah Weaver Ensemble, Executive Director of JackTrip Foundation, Editor of the Journal of Network Music and Arts (JONMA), and Faculty of The New School College of Performing Arts.

11:00PM Paper: allhands Software Tool: Bidirectional Transmission of controller data over the web

Michael Palumbo, Toronto

This paper introduces allhands, an extensible software tool for facilitating bidirectional transmission of controller data over the web, in support of real-time distributed performance. It augments a performer's software ecosystem by offering a simple and reliable means of sending and receiving Open Sound Control (OSC) data to and from all other users connected to the allhands network. Motivations behind the design and implementation of this tool include easy integration alongside existing software, operation across platforms, and not requiring users to know each other's IP addresses or UDP ports. Of note is that the allhands public server will broadcast all incoming controller data to any allhands client app that is running in the default configuration. While users may configure allhands to restrict traffic to within a definable top-level namespace -- certainly of interest to closed ensembles, for instance -- it is through the default setting that the developer encourages users to approach the encounter of control data from potentially unknown users as though they are tuning a shortwave radio station or engaging in amateur radio: that control data from strangers presents a novel source of uncertainty. This software will be discussed through three use cases that are active as of this writing, namely the ensembles Void * Ambience and The Placeholder Group, and as part of a research project on telematic tools by Erin Gee. To date, allhands is available for NodeJS and Max/MSP, with additional code examples written for Puredata and Max/MSP, and a forthcoming Max4Live device. The code is open source and is supported generously by the Canada Council for the Arts.

Michael Palumbo (BFA, MA) is an electroacoustic music improviser, teacher, and developer. His PhD research spans distributed creativity, temporality, and version control systems. Select works include Mischmasch (2020), a programming environment for modular synthesis in virtual reality; git show (2019) a distributed music composition experiment; and Data Issues: Please See Attachment (2016-2018), a live performance piece involving the random selection - and deletion -- of an abandoned, unfinished project from his past. Michael has presented his research internationally, including in the Journal of New Music Research and at such conferences as ISEA, NIME, Expo '74, AES, and Network Music Festival. He produces the monthly telematic music series Exit Points, and regularly performs with his voice, a hardware modular synthesizer and his own code.

(11:30PM-12:30AM Break)

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12:30AM Paper: Tectonic: Pannotia a telematic, interactive, generative-score
Lindsay Vickery and Stuart James, Edith Cowan University, Perth Australia

This paper describes the implementation of a telematic, interactive, generative-score work for four instrumental groups Tectonic: Pannotia. The work belongs to a series of chamber orchestra works that are named after theorised supercontinents - Tectonic: Vaalbara [2008], exploring indeterminate realtime structure and instrumental groups with independent tempi and Tectonic: Rodinia [2016], exploring networked generative scores on iPads - and ancient oceans, Iapetus [2020] and Mirovia [2021], fixed scores in which notational approaches are developed.

In Pannotia, geographically distant performing groups read individual parts that respond to the generative choices of all other simultaneously networked scores. In this manner the unfolding score analogises the concept of shifting Tectonic plates that “subduct”, “suture”, “fracture” etc. at each other’s margins. Score are read on iPads in the Decibel Scoreplayer App using “Canvas Mode”, allowing an external device to send drawing commands creating and controlling graphical objects on multiple scores/parts and devices over the internet.

This development allows for greater notational variety, specificity, and draw speed in comparison to Vaalbara (in which musical materials were limited to an A3 paper sized “mobile score”) and Rodinia (which was limited by layer drawing speed and used only relative pitch), Unlike the previous works, Pannotia is entirely generative and “conductorless”, but like Rodinia individuals read a single part a “Performer View” while the audience watches in an “Audience View” in which all notation streams are amalgamated into a single score. This allows deflections and deformations of each stream of notation to be followed in realtime by the audience.

Composer/performer Lindsay Vickery’s music includes works for acoustic and electronic instruments in interactive-electronic, improvised or fully notated settings, ranging from solo pieces to opera and has been commissioned by numerous groups for concert, dance and theatre. He is a founder member of ensembles GreyWing (2016-), Decibel (2009-), HEDKIKR (2001-) and Magnetic Pig (1993-2003). He writes and presents on a range of topics, most recently on the “screenscore”, nonlinear music and the realisation of Cage’s music, in publications/conferences. He is coordinator of Composition and Music Technology at the WA Academy of Performing Arts at Edith Cowan University.

1:00AM Social

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3:30AM Paper: Fusion solutions for remote performers: A Telepresence Stage
Steve Dixon, LASALLE College of the Arts, Singapore
Paul Sermon, University of Brighton, United Kingdom

The paper presents findings from the authors' (Steve Dixon and Paul Sermon) ongoing research project 'Collaborative Solutions for the Performing Arts: A Telepresence Stage', funded by a 'COVID-19 Rapid Response' scheme grant from UK Research and Innovation (UKRI)–Arts and Humanities Research Council (AHRC). In the light of lockdowns and safe distancing issues, the project aims to develop effective and affordable new approaches to connect theatre and dance performers from their separate homes or studios and place them within virtual sets online where they can improvise, devise, rehearse and perform together as if on a real stage. The paper presents and analyses how a range of telematic chromakey systems are being employed to bring a whole new level of creativity to videoconference-based performance work, freeing the performers' bodies from the entrapment of Zoom boxes and co-locating them in specially designed 3D environments.

It examines case studies from some of the projects the researchers are working on with eight professional performance groups. These involve visually bringing together the remote individual performers within different types of virtual sets, configured using perspectival layers and objects to enable sophisticated effects and illusions. Working within such environments, and using different telematic hardware and software systems, leads them to experimentation with new audio-visual ideas and theatrical effects; and opens up opportunities for imaginative new approaches to dramaturgy and story-telling. They include Phoenix Dance Theatre's explorations of the potentials of dancing in and around holes in the ground into which they suddenly disappear; Creation Theatre's ability to join and take on 19th century opponents in a drunken card game, situated within Paul Cézanne's classic painting *The Card Players* (1895); and Pigeon Theatre's surreal journeys into a TV set and through endless corridors which rapidly fill with toys, children, then dangerously rising water ...

The paper goes on to discuss a range of theoretical and psychological issues raised in telematic performance including empathy, communion, presence, intimacy, point of view, subjectivity and objectivity. It interrogates the mirroring notion of the third space (the screen where participants are conjoined) in relation to how the self and the other are allowed simultaneous reflection. By simply combining these views within the same image we become kinaesthetically conscious and in control of our combined coexistence, escaping our individual isolation. The project demonstrates how telematic performance can in certain ways offer more than physical encounters permit, since the presence and observation of their own body in the third space as well as 'the other(s)' provides the participant with an opportunity to make coinciding subjective and objective observations. Since on screen their self is also the other, they are able to reflect on the interactions and performances occurring in front of them while seeing themselves as being directly responsible for it.

<https://www.telepresencestage.org>

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Steve Dixon is President of LASALLE College of the Arts in Singapore, one of Asia's leading arts and design institutions. His research into the use of computer technologies in the arts include as co-Director of the Digital Performance Archive and co-founder and Advisory Editor of the International Journal of Performance Arts and Digital Media (Routledge). His 800-page book *Digital Performance: A History of New Media in Theater, Dance, Performance Art and Installation* (MIT Press 2007) is the most comprehensive study of the field to date, and won international awards. His latest book, *Cybernetic-Existentialism: Freedom, Systems and Being-for-Others in Contemporary Arts* (Routledge 2020) re-examines and compares the two titular disciplines, and fuses them together to propose an original aesthetic theory of contemporary arts. Steve is an interdisciplinary artist and director of The Chameleons Group working across multimedia theatre, film, installation, telematic arts and Virtual Reality.

Paul Sermon is Professor of Visual Communication at the University of Brighton, UK. He has worked for over thirty years as an active academic researcher and creative practitioner and has developed a series of celebrated interactive telematic art installations that have received international acclaim. Having worked under the visionary cybernetic artist Professor Roy Ascott as an undergraduate Fine Art student at the Newport School of Fine Art in the mid 1980s, Paul Sermon went on to establish himself as a leading pioneer of interactive media art, winning the prestigious Prix Ars Electronica Golden Nica in Linz, Austria, shortly after completing his MFA at the University of Reading in 1991. It was an accolade that then took Paul to Finland in the early 1990s to develop one of the most ground breaking telepresent video installations of his career 'Telematic Dreaming' in 1992.

4:00AM Concert Demonstration: From Gesture to Texture: Developing and transforming improvised music language in telematic performance.

Timothy O'Dwyer, LASALLE College of the Arts, Singapore

Georg Wissel, University of Cologne

This concert demonstration features the work of The Mirror Unit, an improvising saxophone duo of Georg Wissel (Germany) and Timothy O'Dwyer (Singapore). Formally a group that would tour and record annually since 2014, over the past 12 months during the pandemic, their collaboration has continued and developed through telematic interactions.

Utilizing Zoom for communication and video, and Sonobus for audio, as the platforms of choice, they have gone through a significant development and exploration with their approach to improvising together over this period.

'From Gesture to Texture', tracks this development by presenting the perspectives of the two musicians and their collective understanding of the transformations that their improvising language has undergone. In addition, the duo will perform live as

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part of the presentation, and follow this with more reflection on their performance and process.

'From Gesture to Texture' as the title suggests, illustrates in practice the transformation of the group's historical improvised language, that was characterized by a dynamic, responsive and intimate listening experience that was achieved in their live, face to face encounters; that has developed into a more reflexive, considered approach. Previously, through the virtuosity of the player's abilities and a commitment to a high-risk, high-reward 'devil may care' with precision and execution approach to performance, the telematic environment, so far, has tended to rein in these two tyros of the saxophone in dramatic and interesting ways.

Rather than seeing the medium as a 'wet-blanket' on their exuberance, the duo have been steadily working through strategies to continue to respond creatively and innovatively to each online encounter. Their commitment to pushing each other conceptually and technically has been undiminished, the context of where they improvise has forced the language itself to evolve in new and unforeseen ways. The fast gestural / event / split second reflex based sonic gestures that they are well known for, have been replaced by a slower cadence, a textural manifestation.

Latency has stretched the immediacy and responsiveness, posing questions to the innate chemistry of the group. The instinctive, confident, decision making, has morphed into a delayed stretched-out, textural vocabulary that emphasises patience: a state of mind that is certainly not the natural habitat for the two musicians. However, the switch of focus from call and response and complex parallelism, to slowly forming dense textures, has only diverted the intense listening and fierce critical aesthetic sensibility underpinning the foundation of the duo to a different domain.

Hitherto, a source of contention for the musicians, improvisation as spontaneous composition, arguably has become an important concept in their current work. More time for decision making, a slowing down of the process, has enabled the duo to contemplate the minutia and complexity of each sound in itself under a more stringent microscope.

the MirroR unit:

Tim O'Dwyer, altosaxophone + preparations

Georg Wissel, altosaxophone + preparations

two saxophones, two Improvisers and two explorers, too

The MirroR unit represents the synergy and intricate level of communication that can only happen when two improvisers at the top of their game meet in concert. Technically the two alto saxophone players cover the whole gamut of conventional and extended sounds to be created on the instruments and cover a wide spectrum of approaches and styles in addition to a rich and subtle pallet of textures derived

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from their use of preparations- this is especially so in the case of Georg Wissel's armoury of objects that have been meticulously researched over time to extend the sonic capacity of the alto saxophone. In turn, Wissel's subtle colouring is met head-on by Tim O'Dwyer's punchy articulated phrasing. TMU has been performing together since 2014 across Germany, South East Asia and Australia. They released their debut CD 'Wind Makes Weather', on Creative Sources in 2014 and are preparing the release of the second CD 'Sonic Rivers' on FMR in summer 2021.

5:00AM Concert Demonstration: Solstices by Georg Friedrich Haas
Ulrich Pöhl, director, INSOMNIO Ensemble, Netherlands

Since 1997, INSOMNIO, an ensemble for contemporary music, consists of a group of international soloists. With our great love for contemporary music, sparkling enthusiasm and craftsmanship, the ensemble has grown into one of the leading ensembles for contemporary music.

INSOMNIO gives contemporary composed music a solid place in society. We perform music by contemporaries in a social context, whether or not in collaboration with other disciplines. We do not forget our heritage, of the great composers of the 20th century. With this baggage we look for new forms to keep contemporary composed music alive.

INSOMNIO basically consists of 17 soloists (strings, woodwinds and brass, piano, percussion and plucked string instruments) under the artistic direction of conductor Ulrich Pöhl. The composition and size of the ensemble can differ per project.

In recent years, INSOMNIO has performed on various stages for current music in the Netherlands and abroad. With Utrecht as their home and operating base, the ensemble could be heard at festivals in England, Germany, France, Spain, Italy, Slovenia, Indonesia, South Africa and China. INSOMNIO commissioned more than 500 new works for ensemble and collaborated intensively with composers such as Pierre Boulez, Heiner Goebbels, Jukka Tiensuu, Dai Fujikura, Peter Eötvös and Luca Francesconi.

In the past year INSOMNIO set up its 'Touch-Lab' project. A development programme designed to research how to perform meaningful virtual concerts now and in the future. Concerts where contact between participants, musicians and audience, would be strengthened.

To date INSOMNIO has researched different technical solutions for online concerts and developed its own super high-speed networking system. This enables musicians to rehearse and perform together 'without' any time-delay, at CD audio quality, from different physical locations in multiple countries.

(6:00AM-11:00AM Break)

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11:00AM Lab

12:00PM Concert Demonstration: Telemidi

Matt Bray, Edith Cowan University, Australia

Bernardo Varela, London

A short Network Music Performance will take place for the NowNet Conference. This will demonstrate a process developed by Matt Bray named Telemidi, whereby two collaborators exchange only MIDI data across a wide area network (e.g. the Internet). The two performers will be Matt Bray, located in Perth Western Australia, and Bernardo Varela, located in London U.K. (distance is approx. 9,000 miles / 14,500km). Two audio streams will be generated, one from each performer location, both will be streamed to the NowNet conference. There will be an opportunity for NowNet to switch between the two streams to understand how performers are collaborating musically despite the presence of latency. In particular, recognising the musical similarities in each audio stream. Matt will provide a summary of the process and indicate how his current PhD research will facilitate the delivery of each audio stream into a virtual environment to support enhanced audience engagement.

Located in Australia, Matt Bray has operated as a professional drummer, vocalist, guitarist and DAW operator since 1995. Combining emergent digital technology with various musical genres, Matt has innovated methods of interactive performance and composition in the genres of Acid Jazz, Drum and Bass, Reggae and Network Music Performance improvisation. The development of interactive network engagement inspired Matt to complete a Masters degree in Music (Contemporary Practice) in 2017 producing the thesis titled Telematic Music Performance: Synchronous Comprovisation of Pulse-based Electronic Music. This initial research presented strong evidence that exchanging MIDI performance data over a wide area network (WAN) was a viable option for overcoming latency sufficiently to provide collaborators with a valid, musical improvisation environment. Currently, Matt is a PhD candidate at the Western Australian Academy of Performing Arts (WAAPA - Edith Cowan University) under the supervision of Lindsay Vickery and Stuart James. Matt's PhD research looks to further reduce the impacts of latency within WAN environments, improving the design of MIDI networking to better accommodate Telematic Culture, and streaming performance media into virtual environments to facilitate audience engagement.

Over one hundred and sixty of Matt's compositions are registered with APRA (Australasian Performing Rights Association), highlights involve the performance of his composition Jazz-Latin Overtones by the Melbourne Symphony Orchestra in 1994, operating as a composer/performer for top the Australian Top 40 album Extremist Makeover (28-Days) in 2004, again with the top 100 iTunes rock album Beautiful in Danger by middle eastern progressive rock outfit Jericco in 2013, and the performance of over 3,200 gigs that include two EU tours with earthy blues/rock outfit Dirt River Radio (2016, 2018). Matt founded live electronica outfit K-Oscillate in 2001, and spent the following nine years performing predominantly live Drum and Bass, and in

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turn developed a complex, hybrid acoustic/electronic drum kit environment. The detailed DAW set up involved in the K-Oscillate experience evolved into a funk/reggae producing, grid-based composition platform in 2014 (Phantom Hitmen), wherein the concept of connecting two such environments across the Internet became a focal point for further exploration.

12:30PM Paper: Puentes Telemáticos / Telematic Bridges: Experiments in intercultural, telepresent and creative music pedagogy
Michael Dessen, University of California Irvine
Juan David Rubio, University of Texas at El Paso

In this presentation, we will share reflections on “Puentes Telemáticos / Telematic Bridges,” a telepresent summer course linking high school music students in Santa Ana, California (USA) with peers in Manizales, Colombia. Students gain experience with music technology and remote collaboration, explore creative forms of music making that they do not encounter in their school programs, and learn about one another’s life experiences and cultures through guided discussions and projects. This course is aimed at empowering young people and exploring the intercultural and social justice potentials of telepresent music education. By documenting and analyzing these pedagogical experiments, we hope to expand what it can mean to learn music creation and technology with young people in a networked world.

Michael Dessen is a composer/improviser, trombonist and educator. He creates music for his own bands, collaborates with leading creative artists, performs solo on trombone/computer, and produces telematic concerts and educational projects that explore the potentials of telepresence. Dessen’s teachers include Yusef Lateef, George E. Lewis, and Anthony Davis, and he is a professor at the University of California, Irvine, where he co-founded a PhD program in Integrated Composition, Improvisation and Technology (ICIT). <www.mdessen.com>

Juan David Rubio Restrepo is an interdisciplinary scholar and performer of popular and experimental music practices. At UTEP, Dr. Rubio Restrepo holds a joint appointment and teaches at the Music Department and the Chicano Studies program. He earned his PhD in Music with a focus on Integrative Studies from the University of California San Diego, holds a MFA in Integrated Composition Improvisation and Technology (ICIT) from the University of California Irvine, and a BM in Jazz Studies and Drum Kit Performance from Pontificia Universidad Javeriana (Bogotá, Colombia). His scholarship dialogues with theories of the human, decolonial theory, media studies, cultural and ethnic studies, critical theory, studies of music and sound, ethno/musicology, and Latin American, Chicanx, Caribbean, and African-American thought to explore issues of aurality, alterity, and resistance using a transnational and comparative lens.
<www.utep.edu/liberalarts/music/people/juan-david-rubio-restrepo.html>

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1:00PM Presentation: De-territorialization and Re-territorialization of the Band in Creating an album Online

Gareth Dylan Smith, Boston University

David Knapp, Syracuse University

Bryan Powell, Montclair State University

In this presentation, three musicians and music education professors discuss the ways in which physical distance enabled them to collaborate quite intimately in previously unimaginable ways in the writing and production of an album of 12 original songs. The discussion will be interwoven with excerpts of songs from their album, *Lockdown Sessions*, which resulted from the distanced collaboration. The presentation concludes with implications for teaching music in schools and for working with music education students in collegiate settings.

Throughout the spring and summer of 2020, during the height of the COVID-19 pandemic outbreak in the northeastern United States, the three presenters were each faced with teaching hands-on, practical music making courses in an online setting. Rapidly revising syllabi and learning objectives, they moved learning to the online digital audio workstation, Soundtrap, requesting that students collaborate to write, arrange and produce songs. To acclimatize themselves to their students' new environment, the professors also met once per week to write and record music using Soundtrap. We allowed ourselves one hour each week to write a song, and once we had 12 songs recorded we spent up to an hour mixing and editing, also in Soundtrap.

While the distanced aspect of co-creation was initially limiting, once we let go of our former conceptualizations of ourselves as primarily e.g., a drummer, guitarist, singer, etc., the deterritorialized context enabled new individual and collaborative possibilities. For instance, the usually-introverted drummer who usually preferred to remain heard-but-not-seen at the back of the stage, wrote, performed and recorded lyrics for several songs, embodying creative and performative roles he would not have assumed in a shared physical space. This de-territorialization thus enabled a kind of human-geographical re-territorialization in the liminal "third room" of the online DAW. Roles became fluid, as everyone could be the any instrumentalist they chose (using loops). Background sounds from one another's homes (children, birdsong, passing traffic) became features of the recordings too, further grounding the sound of this distanced telematic collaboration in the respective geographies of the collaborators. These sound worlds both highlighted the physical distance and negated it as the music took on an internal intimacy by reflecting and embracing various aspects of the musicians' lives.

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In terms of working with our students – future music teachers – we were able to empathize with them in relation to the limitations and affordances of working in the online DAW environment. Moreover, from our own collaborative experience, we encouraged students to embrace and share aspects of their own lives and contexts as far as they were comfortable doing. This led to discussions of how empathy, compassion, respect, and love for one another can and should be central to creative musical practices in school classrooms, both online and in-person, thereby enacting more authentic connections between people as creative, collaborative humans.

Gareth Dylan Smith is Assistant Professor of Music, Music Education, at Boston University. His research interests include popular music education, drum kit studies, sociology of music education, and punk pedagogies. His publications include the 2013 monograph, *I drum, therefore I am* (Ashgate), *Magical nexus: A philosophy of playing drum kit* (Cambridge), and *Sociology for Music Teachers*, second edition (Routledge) with Hildegard Froehlich. Gareth is a founding editor of the *Journal of Popular Music Education*, past president of the Association for Popular Music Education, a board member of the International Society for Music Education, and an active drummer.

David Knapp is an Assistant Professor of Music Education at Syracuse University, where he teaches modern band, music technology, steel band, and philosophy of music education. He received his PhD in Music Education from Florida State University. Knapp directs the Music in Community program at SU, which facilitates music-making partnerships that support community needs. This includes the New American All-Stars, a vernacular music ensemble for refugee youth, and the Digital Music Lab, a community-based music production studio for urban high school students. His research interests include community music with marginalized communities, vernacular music making, music technology, and steel band pedagogy. His research has been published in the *International Journal of Community Music*, *General Music Today*, and the *Journal of Popular Music Education*.

Dr. Bryan Powell is an Assistant Professor of Music Education and Music Technology at Montclair State University. Prior to joining MSU, Bryan served as the Director of Higher Education for Little Kids Rock, and the Director of Programs for Amp Up NYC, a partnership between Berklee College of Music and Little Kids Rock. Bryan is a founding principal editor of the *Journal of Popular Music Education* and author of *Popular Music Pedagogies: A Practical Guide for Music Teachers* (Routledge). He serves as the Executive Director of the Association for Popular Music Education. Bryan is the current Chair for the NAFME Popular Music Education SRIG.

1:30PM Presentation: Virtual Is the New Real: Experimental Performances in the Virtual Era of the COVID-19 Pandemic

Ioannis Sidiropoulos, University of Melbourne

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Artistic creation knows no boundaries, and the artist knows no limits. In 2020, the COVID-19 pandemic paused the world while causing unprecedented circumstances for humanity. Arts always survives through its immediate adaptability and the support through the communities. This paper presents two emerging collaborative artistic projects through their methodology, delivery and presentations, which changed how lockdown, curfew, and travel restrictions can rule the way we create, perform, and present art. Experimental and multidisciplinary artists responded to the new pandemic restrictions with a mobile application and a live-streamed performance, incorporating dance-theatre improvisation, VR drawing, music, new and interactive media, technology, & motion capture in Australian and Greek locations. 'Drawn to Sound AR App' presents recorded 360 degrees performances and 3D drawings in different Melbourne locations during the first lockdown period, enabling outdoor artistic experiences from home through a mobile device. The live-streamed performance 'Interlaced' connects two continents, three artists, and four fields during the second lockdown period, combining improvised performance with virtual reality drawing, both responding to the same music stimulus in a shared virtual space. These collaborative projects involve one actor/performer, one visual artist, one musician, and one software developer. The projects were funded by the City of Melbourne COVID-19 Quick Response Arts Grant, the University of Melbourne's Faculty of Fine Arts and Music Experimental Collaborations Grant, the Centre for Projection Art, and a Small Project Grant by Yarra City Council. The works are presented online through Google Play & Apple stores, live-streamed events, Melbourne Fringe Festival, A Strange Space Festival.

Ioannis Sidiropoulos is an actor, dancer, artistic creator/director, drama and academic teacher, writer, and PhD candidate at the University of Melbourne on the Melbourne Research Scholarship and the A.G Leventis Foundation Scholarship. His interdisciplinary research combines performing arts and cognitive neuroscience, focusing on how sounds and music affect the creation of movements within an improvised performance. Also, his new research focuses on virtual/live-streamed performances responding to the COVID-19 restrictions. Since 2010, he is actively working in the performing arts sector as an actor, dancer, filmmaker, and artistic creator in Greece, England, Scotland, the USA, and Australia and participating in performance and screen dance festivals internationally.

2:00PM Paper: "Thrilling and Frustrating": A Case Study of Networked Music Performance

Seth Adams, Northwestern University

In this exploratory case study I examined an alternative to the experience of live musical rehearsal: namely, musicking under the conditions of Low-Latency Networked Music Performance (LoLa NMP) using available hardware and software solutions (Soundjack) to minimize latency and maximize audio fidelity. I recruited two graduate-level musicians (violin, piano) to work with me as a participant-researcher (and bassist). Although participants in this study were remote geographically and

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co-present virtually, I believe it could be useful to consider the “site” of the study as a third space, equal parts digital and imaginative, in which musicians fill in the perceptual gaps between a set of relatively low-resolution audio/visual stimuli and an idealized musicking experience held in mind.

In this session I will share samples of popular songs recorded live from three different Chicago-area locations, demonstrating the potential and limitations of the LoLa NMP medium. I will also share data points, themes and assertions from my analysis of rehearsal transcripts, interviews, and journal entries. Findings suggest that, despite requiring a significant initial investment of time and resources, this rapidly evolving technology can be a viable option for how music and music education are mediated in the future.

Seth Adams is a PhD student at Northwestern University's Center for the Study of Education and the Musical Experience. He holds a bachelor's degree in music education and percussion performance from the University of Massachusetts Amherst and a master's degree in music education from Boston University. In 2020, Seth founded the Temporal Displacement Orchestra as an all-virtual ensemble dedicated to exploring the possibilities of making music across time and space. Prior to his studies at Northwestern, Seth was the Director of Bands at UIC College Prep High School in Chicago. Seth also spent a number of years as a music arranger and instructor in the drum and bugle corps activity, and he is an active electric bassist in the Chicago music scene. Seth's research interests include musical creativity, critical theory, and how technology mediates the musical experience.

2:30PM Paper: A Spectrum of Online Rehearsal Applications: A Potential Means for Cultural Connection

Dana Kemack Goot, Indiana University-Purdue University at Indianapolis

The current array of telematic applications offers exceptional opportunities to transcend distance and enable networking between various cultures and communities. As a means to achieve this, online rehearsal applications (ORAs) require assessment through their previous implementation, installation requirements, cost, hardware requirements, and usability in order to assess their potential and to decipher improvements needed as a means of cultural connectivity. Cultural connections are evident through telematic events such as a multi-university program in 2007 and The Intermedia Festival in Indianapolis in 2010. An early precursor of telematic art was an innovative concert by Paul Robeson in 1957, which circumvented political restrictions and enabled activism as it occurred despite the US State Department's revocation of Robeson's passport due to his left-wing tendencies and activism in support of poor, black, and working-class populations in the United States. While musicians that have taken part in such performances were subject to the challenges of connecting telematically, their access to telematic means was not limited by accessibility or technical ability. ORAs have the potential to provide a valuable service that can promote growth and understanding between cultures. However, the use

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of online rehearsal applications as a cultural tool has not previously been studied. In order to evaluate this potential, requirements of the following ORAs have been reviewed, JackTrip, Jamulus, JamKazam, SonoBus, and Deck 10 Studio. While each offers a much-needed benefit to specific users, all are not without issues, which can include the complication of the setup of a private server and of the installation of the application itself.

It is beneficial to review the usability of the ORAs from a Human-Computer Interaction (HCI) perspective as they relate to their intended users in consideration of whether they are a usable service in the proposed context. The five ORAs represent the various network applications available that often require complicated installation procedures and access to dedicated high speed internet connections. Previous telematic concerts were designed and performed by institutions of higher learning with access to funding and high-speed Internet sources. There is a requisite for high-speed, low latency ORAs for the professional higher institutes of learning and research. Existing extremely low-latency applications, like JackTrip, fulfill this essential service. However, to address the needs of the public and disadvantaged, the socio-economic circumstances and challenges must be understood and considered. For example, Pew research found that approximately half of lower income Americans are worried about paying for broadband and cellphone bills in the coming months, with 40 percent of poverty-stricken homes having unreliable home Internet. Internet access and the ability to pay are prefaced by access to a computer within the home, of which is had by only 21 percent of those with children. ORAs must evolve in simplicity of installation, a reduction of cost and required hardware, and ease in usability in order to lessen the users' cognitive load and be financially and intellectually accessible. In doing so, there is the potential to act as a device to bypass cultural and socio-economic barricades and connect humans through music.

Dana is a doctoral student in Music Technology at Indiana University-Purdue University at Indianapolis. Her research is focused on music affect and online rehearsal applications (ORAs), to cross cultural and socio-economic barriers between persons of varying communities. Her broad background in music, with training in voice and composition, and expertise in ORAs and human-computer interaction has led to developing strategies to integrate humanism and technology as a means of conflict resolution. As a research assistant on the Deck 10 Media application, she has developed features which engage and increase usability for its participants. In addition, she coordinated and managed applications for the Summer Institute for Contemporary Performance Practice (SICPP) and International Computer Music Conference (ICMC) in 2021. In 2017 she presented "The Isomorphic Relationship Between Music and Emotion: A Subconscious Nonphysical Resistance by Concentration Camp Prisoners," at Capacious, an affect study conference at Millersville University in Pennsylvania. Dana has performed with the Indianapolis Symphony Orchestra and the Indianapolis Symphonic Choir on productions including Carmen in 2016 and The Magic Flute in 2018, and at Carnegie Hall during the 2016-17 season and the Kennedy Center during the SHIFT festival in April 2018. Dana also performed with Madonna during the Super Bowl

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XLVI half-time show and served as artist-in-resident in the Western Galilee of Israel. In addition, Dana leads her jazz trio and gypsy klezmer band.

3:00PM Workshop: How-To Session: A Pretty-Good Jacktrip Toolkit
Mike O'Connor, Wisconsin

Learn how to configure a Jacktrip server with a graphical user interface on an inexpensive Linode cloud server. The server will support graphical tools such as QjackCtl (for audio routing) and the Ardour DAW (for mixing and recording sessions as well as providing customized monitoring to participants). A low-cost (easily less than \$5/month) way to learn and experiment.

At the heart of the workshop is an exploration of a public "Stackscript" that is available now. It contains no proprietary code and can serve as a starting point for learning, designing, performing, experimenting or teaching.

Of interest to people who are interested in a affordable way to:

- create an open-source Jacktrip (and/or Jamulus) practice or performance space
- learn how graphical-interface Linux compares to more-familiar Mac/Windows systems
- learn/teach advanced server-based audio techniques (audio routing, mixing)
- build and test new ideas and software

At the end of this session participants will:

- be able to launch their own instance(s) of a server
- have a basic understanding of how to access the tools and templates that are included
- be aware of what's involved with hosting, mixing and recording a moderate-sized JackTrip session on the server
- be aware of how to scale the server, based on ensemble-size and audio requirements
- be aware of server-management options (cloning, upgrading, imaging, etc)

My trajectory was as a tech community-builder, project and management type person who lucked out in the early days of the internet. I retired when I was 50 and have spent the last 20 years helping my wife Marcie restore 500 acres of Driftless-Area habitat in Wisconsin.

But I'm also a life-long geek and musician who graduated from Grinnell College with a minor in music (receiving the Steiner Award for electronic-music composition) in 1972. I spent a brief time at the University of Iowa Electronic Music Studio before getting swept up in the community radio movement (I organized WORT-FM in Madison WI, and co-founded the National Federation of Community Broadcasters).

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I went astray into a career as a corporate consultant which ended when I found myself in a crisis-management gig as AVP Finance and interim Controller at the University of Minnesota, met the Gopher team, and promptly fell in love with the internet. Since that COVID thing started I've been helping musicians figure out how to rehearse, perform and produce over the internet.

4:00PM Presentation: Peabody Institute Music Studios

Theron Feist, Peabody Institute

Soprano Ah Young Hong can't gush enough about the Peabody Institute's new low-latency music studios, created to improve the teaching and learning experience for vocalists during COVID-19. "These rooms changed everything for me," says Hong, associate professor of voice.

In these rooms, portrait-oriented monitors, microphones, and speakers replace rehearsal studios' full-length mirrors and allow two artists to be in two separate spaces and see and hear each other with just a roughly 10-millisecond lag – about the time it takes to hear somebody speaking from 10 feet away.

Two of the studios were in place by early January, and 10 more were completed by the end of the month, allowing instructors to stagger student lessons and rotate time slots among studios, in keeping with recommendations from the Centers for Disease Control and Prevention. These recommendations suggest allowing rooms to remain empty for 60 minutes between uses in order to completely replace the air inside. The low-latency studios were developed the old-fashioned way: trial-and-error tinkering. Peabody IT director Theron Feist and his team, like so many of the Conservatory's behind-the-scenes staff, spent the spring 2020 semester supporting the pivot to distance learning demanded by the pandemic. Over the summer, he and his colleagues started thinking ahead to what a return to campus might mean. "We were having a lot of conversations about how you safely have people sing together," he says, pointing out that among musicians, vocalists are at the biggest risk of spreading the virus because singing disperses aspirated droplets.

Vocalists also felt challenged by distance learning because of lag issues: It takes time to convert the analog sound of the human voice into digital information, transmit that signal over an internet connection to a computer in a different location, and convert that digital signal back into sound. There's a lag, that glitch of audio or visual information being out of sync.

Feist reached out to his IT team and colleagues in Peabody's Recording Arts program, and they started tossing out ideas in virtual brainstorming sessions. They went over what equipment and software packages the institute already had, as well as what else was being used by the industry at large. It helped that the institute had upgraded the local network and audiovisual infrastructure to handle automated audio and visual recording in the concert halls in recent years, so there were a variety of tools

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available for use. “We started to prototype some systems to connect rehearsal rooms together,” Feist says. And as they experimented with different combinations of hardware and software, they’d invite Voice faculty members to test things out.

One such guinea pig was Hong, who recalled the challenges of teaching over Zoom. “We’re not just talking about a lag, we’re talking about sound that is so ridiculously distorted, how can I assess what this voice is doing?” she recalls.

Collaborating with the IT team made her more hopeful. After a few experiments, she and a graduate student were placed in separate rooms for a lesson. The lag was still there, but it was shortened enough that she could imagine improvements were possible. Feist also reached out to Peabody acoustics instructor Eric Echols, who is also a director of technology and design consulting at a commercial audiovisual firm called Pershing Technologies, which ultimately came up with the design for Peabody’s low-latency studios. “We wanted people to be able to walk into a room they’re familiar with, hit a button, connect to another room, and start their lesson,” Echols says of the resulting design.

And Hong, for one, appreciates how well the designers listened to the musicians during prototyping. From sound quality to full-length monitors, she says the low-latency studios are set up beautifully for singers. Speaking gratefully of the engineers and designers she worked with, Hong says, “They’re my favorite people right now.”

The presentation will provide brief background, including the challenges faced, along with an overview of the solution both from a technical and functional perspective, and a video demonstrating what a lesson looks like in the low latency studio.

Theron Feist has served as IT Director at the Peabody Institute since 2012 and has worked in several technology-related positions in his nearly 20 years at Johns Hopkins University. Mr. Feist has over 25 years of experience directing technology implementation projects in educational and non-profit organizations. Mr. Feist holds a MA in Communication, Computing, and Technology in Education from Teachers College at Columbia University. Mr. Feist has expertise in IT governance, instructional design and academic technologies, networked AV systems, low latency collaboration tools, software development. Mr. Feist has been instrumental in establishing technology partnerships with other areas of Johns Hopkins and other arts institutions, building visionary technology infrastructure at Peabody, and engaging faculty in transformative technology projects. He has successfully led multiple enterprise scale technology solution implementations, including the launch of the Johns Hopkins Enterprise web portal, the development of multiple online degree programs, the construction of several nursing simulation centers, and the creation of an automated video streaming, capture, preservation, and access system for Peabody. Mr. Feist also serves as an adjunct faculty member in the Interaction and Information Design department at the University of Baltimore.

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Erich Gercke: After earning a Film & Television degree from Savannah College of Art and Design, Erich Gercke spent several years in television and commercial production before transitioning to work with education-based multimedia systems in 2015. Since joining the Peabody Institute in 2020, Erich has helped professors and students navigate their multimedia needs, including remote work, videoconferencing, and the new Low Latency vocal practice rooms in Peabody's Austrian Hall.

Eric Echols: Eric Echols is an audiovisual design consultant with a background in music performance, acoustics, and recording arts. Eric serves as the Vice President of Technology at Pershing Technologies, and also teaches acoustics courses at the Peabody Institute. Echols earned his Bachelor of Music in Violin Performance at Baylor University and continued his studies at the Peabody Conservatory of the Johns Hopkins University, graduating with a Master's Degree in Audio Sciences. Keenly interested in technology, Echols married his love of music and the arts with an affinity for bleeding edge technology and embarked on his career of audiovisual design and consulting. Echols began his professional career as an audiovisual design consultant at an international multidisciplinary architectural and engineering firm. During his time there, Echols specialized in large-scale corporate commercial, healthcare, and government projects. Soon after, Echols joined Pershing Technologies where he now serves as the Director of Technology. At Pershing, Echols is responsible for overseeing the majority of commercial audiovisual design and engineering efforts, as well as leading the research and deployment strategies for new and emerging technologies. Throughout his career, Echols has provided consulting and design services to a number of esteemed higher education, corporate, and medical organizations, including Virginia Tech, The World Bank and International Monetary Fund, the Inter-American Development Bank, Georgetown Law, NBC Universal, and the University of Maryland Medical Center. Echols' project expertise ranges from conference rooms and meeting facilities to auditoria, theaters, and broadcast studios. In 2013, Echols began teaching acoustics courses at Peabody. Additionally, Echols has taught classes for AVIXA on the use of Building Information Modeling (BIM) in audiovisual design. Echols holds the AVIXA CTS-D certification and is an active member of both the Audio Engineering Society (AES) and Acoustical Society of America (ASA).

4:30PM Social

(5:30PM-8:00PM Break)

8:00PM Lab

9:00PM Panel: Reimagining Music Performance with Immersive Reality Technologies
Ben Loveridge, Margaret Osborne, and Solange Glasser, University of Melbourne

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Background

In early 2020 we witnessed the practices and pedagogies of the arts and education sectors shift almost overnight, creatively adapting and modifying their practices to ensure survival and the continuation of their activities. We saw concert halls close their doors as audiences moved from live venues to online streaming platforms; indeed, in many situations even making music collectively became an impossible task. The digital shift in this peri-COVID era has impacted music institutions and the broader artistic community, presenting unique challenges and opportunities. Immersive technologies such as augmented and virtual reality (AR/VR) have been suggested as viable alternatives to the traditional dichotomy of live versus online streamed or recorded performances, however substantial barriers of understanding, design and implementation need to be overcome in order to optimally harness and embrace these emerging technologies in music performance situations.

Aims

Our aim is to interrogate the specific affordances and challenges of immersive technologies such as AR and VR on music performance outcomes, and to establish a protocol for delivery of immersive technologies in individual and group performance. We aim to apply this protocol through the establishment of a virtual performance space in a tertiary music institution setting at the University of Melbourne.

Main contribution

This presentation will provide the foundations of an evidence-based performance enhancement lab, including the establishment of Australia's first virtual performance studio, for performance teaching and wellbeing interventions to promote optimal performance outcomes with a focus on teacher-student, peer learning and creative opportunities. We provide an example of the capacity of VR to induce the situational stress required to trigger physical and psychological responses, so that developing and early career musicians may access a safe, realistic space within which to practice performance psychology skills and optimise performance outcomes. Furthermore, a virtual performance space provides us with an opportunity to disrupt notions of the audience-as-observer and create experiences where participants can interact and manipulate the musical (and extended sensory) information in unique and novel ways. As such, the establishment of a virtual performance space will interrogate what can be achieved in a virtual performance that is unachievable in live performance situations, allowing for reflection on performer-audience inter(actions).

Implications

With the advent of COVID restrictions, the opportunity for students to perform in concert halls and to experience the associated pressure of a live audience, were - and remain - limited. By reimagining the performance experience with immersive technologies, we envisage that the Performance Enhancement Lab will not only provide musicians with a means to develop technical and psychological competence to perform at their best in ecologically-valid contexts, but that it will also herald the future

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of music performance practices and our music students' readiness to perform and engage in a landscape of uncertainty and the changing new-normal.

Keywords:

Virtual Reality, performance simulation, mental skills training, performance anxiety.

Margaret Osborne [BPsych(Hons), PhD, GCUT] holds an interdisciplinary position of Senior Lecturer in Psychology and Music (Performance Science) at the University of Melbourne. Her desire to support the mental and physical health needs of artists to achieve optimal performance and sustainable careers has seen her undertake private practice as a performance psychologist for over 20 years, serve as past-President of the Australian Society for Performing Arts Healthcare, and develop new courses in performance psychology and musician's health. She is notable for research in music performance anxiety. Margaret seeks to understand how music learning and performance can be improved using self-regulated learning, emotional and behavioural regulation methods to build confidence, health, resilience and maximise performance potential.

Solange Glasser studied violin performance and musicology at the Queensland Conservatorium of Music (Australia), obtaining her Bachelor of Music (Hons) with first-class honours in musicology. Solange went on to complete both a Licence and Masters in music and musicology at the University of Paris IV Sorbonne, a Diploma of orchestral conducting at the Municipal Conservatorium of Paris XIX (France), and a Doctorate of Philosophy at the University of Melbourne (Australia). Now based at the Melbourne Conservatorium of Music, she is the University of Melbourne's inaugural Lecturer in Music Psychology, with a broad and interdisciplinary range of teaching areas that encompass music psychology, performance science, creativity and expertise. Her research interests include multisensory perception, prodigious development, and exceptional abilities, with a particular interest in understanding the impact of synaesthesia and absolute pitch on musical development.

Ben Loveridge is the Immersive Media Coordinator (VR/AR) at the University of Melbourne, assisting with the integration of spatial technology in teaching and research across the University. He coordinates the Learning Environments VR lab, providing technical and development consultation to staff and students through workshops and masterclasses. He completed a Bachelor of Music at the University of Melbourne and is currently undertaking a Master of Music (Research), investigating the intersection of networked music performance and virtual reality.

10:00PM Presentation: Comparing singing in virtual reality and video conferencing
Ben Loveridge, University of Melbourne

The ability for musicians to perform and interact in-person has been highly impacted by the COVID-19 pandemic. As a result, many performers who have attempted real-time collaboration have faced technical and performance hurdles such as dealing with internet latency and software limitations. To overcome these challenges, musicians

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usually ignore visual cues from each other in order to help with synchronisation. Virtual reality has emerged as a visual alternative, however its use in the context of real-time online performance is still an emerging area of research.

This presentation will provide an overview of preliminary results of a Masters research project investigating the experience of singing in virtual reality and video conferencing in the context of a networked music session.

Ben Loveridge is the Immersive Media Coordinator (VR/AR) at the University of Melbourne, assisting with the integration of spatial technology in teaching and research across the University. He coordinates the Learning Environments VR lab, providing technical and development consultation to staff and students through workshops and masterclasses. He completed a Bachelor of Music at the University of Melbourne and is currently undertaking a Master of Music (Research), investigating the intersection of networked music performance and virtual reality.

11:00PM Concert Demonstration: In Front of the Body
Dirk Stromberg, LASALLE College of the Arts, Singapore
Michal Seta, Society for Arts and Technology, Montreal
D. Andrew Stewart, University of Lethbridge, Alberta

Alt_F is a trio of improvisers, technologists, and composers. They aim to explore new instruments in production practice. Based in Canada and Singapore, their work has been largely telematic in the past year. Together they trip participates and creates a number of VR and other types of telematic performances.

In Front of the Body is a performance showcasing three highly developed Digital Musical Instruments (DMI) whose combined history spans two decades: karlax (D. Andrew Stewart), t-stick(Michal Seta), and phallophone (Dirk Strmberg).

The praxis for all three instruments includes a performance orientation similar to regular instruments, which are held with two hands and positioned in front of the performer. Consequently, all three instruments may be understood as extensions of the performers' physiology, expanding the performers' reach into the surrounding space and soundscape; DMIs of this nature cease to be instrument-objects and, in the spirit of Merleau-Ponty's (1962) Phenomenology of Perception, become areas of sensitivity, extending the scope and active radius of touch and listening.

In Front of the Body may be understood as a metaphor, and response to, a post-truth sensibility. We wish to draw attention to a worldview that is still human-centric, experienced by the body - immersion of the senses. In Front of the Body is also a tribute to those who open new paths, question the ways and appreciate discovering new approaches. All three instruments (karlax, t-stick, phallophone) require an attention to designing palpable gestures, which are on full display, in full view, and not shrouded in deception.

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Michal Esta is a sound artist, improviser and coder (in any order) flirting with a various media. I co-founded No One Receiving band with Lorne Shapiro and Hiroya Miura as well as UniSecs, a duet of spoken word and electroacoustic music. As a coder, I fueled works by other artists (and my own) and currently I work as a researcher/developer at SAT's Metalab. I have ventured into interactive art installations with [IR]rationnel, commissioned by the Montreal Science Center and award-winning Re-Collect, shown in North America, Europe and the the Middle-East. My short film [*]nScape was selected for the first Drone Cinema Film Festival and was followed by several music releases in fairly rapid succession, mainly on Silent Records label.

D. Andrew Stewart is a composer, pianist and digital musical instrumentalist. A convergence of acoustic and electroacoustic instrumental praxis is at the centre of Stewart's oeuvre. His music is dedicated to exploring composition and performance for new interfaces for musical expression by adapting and evolving traditional praxis. Stewart's work asks whether musical idea - concept, theory, material, technique and means - has kept pace with developments in digital lutherie; furthermore, what are the essential constituents for creating a viable digital instrument for the twenty-first century performer. Stewart has contributed to the field of music technology through his demonstrations at: the International Conference on New Interfaces for Musical Expression, International Computer Music Conference / International Computer Music Association, Electroacoustic Music Studies Network, Electronic Music Foundation, ACM SIGCHI Conference on Human Factors in Computing Systems, Society for Music Theory, and the Guthman Musical Instrument Competition. Andrew Stewart's music has been featured in countries such as: The UK, Netherlands, Switzerland, Czech Republic, Poland, USA, Germany, France, Mexico, Norway, Denmark, Austria, Italy, Korea Republic and his home country of Canada.

Dirk Johan Stromberg is an American music technologist, composer, and improviser. His body of work explores the dynamic interaction between performer, technology and performance practice. Designing both hardware and software has led to the development of a variety of interfaces, synthesis techniques, installation works, electro-acoustic instruments, and interdisciplinary production works and most notably his Phallophone, an electro-acoustic sensor-based instrument. Current projects include a series of presentations and development of his tactile interactive installation "Line Segments" and the collaborative video and movement work "Images of Ascension". His touring has led to a number of performances in Asia, North America and Europe including Moers Festival (Moers Germany), KLEX Festival (Kuala Lumpur, Malaysia), Map Festival (Melaka, Malaysia), Choppa Festival (Singapore), Open Waters Festival (Halifax Canada), Duong Dai Festival (HCMC and Hanoi, Vietnam), M1 Fringe Festival (Singapore) and Dear Himalaya From Chiang Mai (Chiang Mai, Thailand).

SATURDAY NOVEMBER 6

12:00AM Concert Demonstration: Networked Music Performance

Federico Cámara Halac and Jacob Kopcienski, Ohio State University
Berenice Llorens, Argentina

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You should listen to Elektra The Sonic Arts Ensemble at The Ohio State University presents the Networked Music Performance trio Jacob Kopcienski, Berenice Llorens, and Fede Cámara Halac. Sculpting improvisation on every Tuesday for the good part of a year, this eccentric trio unravels with saxophone and electronics (JK), electric guitar and pedals (BL), and 'Thornblower' live electronics (FDCH). Their work is collaborative. They like noise. They use Netty McNetface or Jacktrip depending on mood. They play from Columbus, OH to Córdoba, Argentina, cherishing their 190 msec roundtrip latency all the way. They want you to listen because their music listens to them. Elektra also listens to their music. Elektra is our cat. You should listen to Elektra.

Berenice Llorens is a composer, performer, poet, and dj from Córdoba, Argentina. Her work has been performed at La Cúpula Galería de Arte, and she is developing work for the virtual label Kriptonia. As a dj she has worked with Vesica Piscis and performed on multiple locations around Córdoba, as well as with her duo SoBeryNice with So Piuzzi. She performs solo, with voice and guitar, and her experimental music duo is called Marmota's Dreams with Constanza Pellici. Her work is available at <https://berenicellorens.github.io>

Jacob Kopcienski is a multifaceted artist and scholar who explores sound, listening practices, identity, and technology through writing, performance, creative collaboration, and community-building projects. An accomplished saxophonist, his performance research focuses on improvisation and interactive electronic music. In recent years, these interests have led to performances at the National Student Electronic Music Event, NYCEMF/ICMC, the SEAMUS National Conference, and the Now Net Arts Conference. Jacob has also presented original research on subjectivity, identity creation, and relational power structures in improvised and interactive electronic music at Columbia University's Computer Music Center and the SEAMUS National Conference. He also serves as a Contributing Writer for the contemporary music website I Care if You Listen. Jacob is currently a Ph.D. student at the Ohio State University, where he is a member of the Sonic Arts Ensemble. Learn more at <https://www.jacobkopcienski.com>

Fede Cámara Halac's music and research focuses on live multimedia performance, instrumental and computer music, and immersive music for massively multichannel systems. Combining machine listening with computer vision techniques, he designs and theorizes audio and image database systems that explore the relationships between sound, image, space, and performance, while contributing to open source software programming. His work is available at <https://fdch.github.io>

1:00AM Social

(2:00AM-11:00AM Break)

11:00AM Lab

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12:00PM Concert Demonstration: NowNet Arts Lab Ensemble
Sarah Weaver, director, International

NowNet Arts Lab Ensemble is a platform for contemporary network arts research, developments, and discussions on artistic and technological practices internationally. The Lab is open to contemporary musicians, actors, dancers, and live visual/video artists. The ensemble will perform utilizing JackTrip audio.

Ximena Alarcon, voice, electronics (UK), Viv Corringham, voice, electronics (New York), Luisa Muhr, voice (New York), Cássia Carrascoza Bomfim, flute (Brazil), Biggi Vinkeloe, alto saxophone (Sweden), Anne Sophie Andersen, violin (Denmark), Angelo Branford, guitar (New York), Colin James Gibson, guitar (Toronto), Juan Parra, guitar (Belgium), Steve Rust, bass (New York), Tom Zlabinger, bass (New York), Diane Roblin, piano, electric keyboards (Toronto), Jane Wang, multi-instrumentalist (Boston), Gloria Damijan, percussion, electronics (Vienna), Scott Miller, electronics (Minnesota), Rebekkah Palov, electronics (New York), Kit Fitzgerald, live visuals (New York), Sarah Weaver, conductor (New York), Mike O'Connor, audio technology (Wisconsin)

1:00PM Concert Demonstration: Say That Again Ensemble
Anne Sophie Andersen, Cassia Carrascoza, Viv Corringham, Luisa Muhr, Diane Roblin, International

"Silence Resounds Across Distance" is an exploration of the phenomenological qualities of silence located in the virtual dimension. The notion of silence as a sonic "dark matter" that contains the essence of all sounds is explored through listening deeply to each other across our physical distances. This silence exists in a venue lacking any physical definition, and where concrete physical aspects of the performance only describe what the space is not. Acoustic observations of sonic relief which may exist in 3D are thus redefined in an electroacoustic context within the virtual space, which depends on the vantage point of the observer to an even higher degree than is usually the case. Like wires between us, the musical, emotional, psychological and spiritual connections we build with our distant musical practice make the silences that resonate between us into an affective listening that contains inclusion, access and equity.

Anne Sophie Andersen: violin (Denmark) annesophieandersen.com
Cassia Carrascoza: flute (Brazil)
<https://www.ffclrp.usp.br/docentes/doc.php?cusp=535192>
Viv Corringham: voice/electronics (NYC) vivcorringham.org
Luisa Muhr: voice (NYC) LuisaMuhr.com
Diane Roblin: piano/electronic keyboards (Toronto) dianeroblin.com

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Say That Again Ensemble is a group of professional women musicians who formed during the pandemic specifically to make contemporary work for the internet and related technologies. Working collaboratively we create, develop, and perform our music live via the platforms of Jacktrip and Zoom, accepting and working within their latency and compression of sound. The music draws from our various backgrounds in classical music, improvisation, multimedia, electronics and jazz. As an international group we use our different languages and skills to celebrate our differences and link together telematically through the tools and possibilities of live, network-based online performance. The group connected in the spring of 2021 through the NowNet Arts Lab Ensemble and has performed virtually at Stony Brook University's Earfest and UC Riverside's ¡Que viva México! event. Upcoming virtual performances are scheduled at the III Convergências Sonoras event at São Paulo University Brazil.

1:30PM Concert Demonstration: Telematic Immersion and Collaborative Performance
Cássia Carrascoza Bomfim, University of São Paulo
Paulo Chagas, University of California Riverside

At the end of 2019, we started a collaboration project based Paulo C. Chagas' research project Sound Imagination, which aims to investigate different cultures and categories of listening in the global context. Since the beginning of the pandemic, in March 2020, we have been exploring new concepts of telematic performance based on Chagas' compositions for flute, electronics and video, which unfold an aesthetics of audiovisual immersion.

Our vision of reality is permeated by new technologies, our gaze is magnified by this reality that transcends our bodies and our minds amplified by creativity. We connect through the invisible. We are driven by the experience of listening and the power of envision. We draft projects of alternative worlds, visions of ourselves emerging from the interplay between sounds and images - sometimes realistic, sometimes distorted, and sometimes futuristic.

What is "listen"? Listening is a restlessness, an intensification, a preoccupation, a restlessness. Listening is also understanding, being willing to find meaning, not immediately accessible. Sound and meaning mingle, resonating with each other or for each other. In the relationship between sound and meaning there is a space for re-sending that can be defined as the space of the subject who feels and listens to. Thus, listening is the resonance of a re-event, the access to a reality that is at the same time of oneself and of the other, the space of a coming and a passing, of extending and penetrating.

The sonic present is a resonant space with dilation and reverberation. The listening subject is the place of resonance, tension and its consequences. Listening is entering this resonant spatiality, by which, at the same time, I am penetrated and project myself towards the other.

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In the post-human space of telematic immersion, the sound presents itself as modulated by significant processes of body reconstruction and the relationship between presence and absence. The subject emerges in the context of intelligent systems integrated to human-machine interfaces. How can we be penetrated and project yourselves towards the others? How to modulate, for instance, the uniqueness of a scream, or the appeal of a melody?

Program:

Three audiovisual pieces for flute, electronics and video by Paulo C. Chagas - including a world premiere - performed by Cássia Carrascoza, flute/bass flute; and Paulo C. Chagas, electronics/visuals

- 1) "I am a voice without a form" (2021) - for flute, electronics and video - 4 min
- 2) "Re-soundings #2" (2021) - for bass flute, electronics and video - 6 min - world premiere
- 3) "Virtual Studies" (2020) - for flute/bass flute, electronics and video - 20 min

Cássia Carrascoza is Professor in the Music Department at the Faculty of Philosophy, Sciences and Letters of Ribeirão Preto, University of São Paulo (USP). She is currently visiting scholar at the University of California, Riverside, working on a research on telematic performance under the supervision of Prof. Paulo C. Chagas. From 1999 to 2018 she was principal flutist of the Symphonic Orchestra of the Municipal Theater of São Paulo and, from 2000 to 2014, principal flutist of the São Paulo State Symphonic Jazz Orchestra. She was member of the Brazilian contemporary music ensemble Camerata Aberta since its foundation in 2010. She received the APCA Contemporary Music Award (São Paulo Association of Arts Critics) in 2010 and the 8th Bravo Award in 2012. As a soloist, she performed with several orchestras in Brazil and abroad and gave concerts in many countries such as Hungary, Holland, France, Portugal, Belgium, the United States and Argentina. She premiered in Brazil and abroad many pieces by Brazilian composers such as Silvio Ferraz, Alexandre Lunsqui, Rodolfo Coelho de Souza, Flo Menezes, Mathias Kadar, Eduardo Alvares, Arrigo Barnabé, Mikhail Malt, Danilo Rossetti, and Paulo C. Chagas. In 2017, he released the CD Tempo transversal - expanded flute (SESC label), recorded in São Paulo and at IRCAM, Paris with works by Brazilian composers, which was nominated one of the 10 unmissable CDs of classical music of the year by the magazine Bravo. Currently, she develops research in collaborative composition, telematic performance and improvisation with electronics. Since December 2020 she has been a member of NowNet Arts Lab Ensemble, an international group dedicated to telematic performance. She has been invited to research and perform at international institutions such as IRCAM (Paris), University of California - Riverside, and Pontificia Universidad Católica (Chile).

Paulo C. Chagas is a professor of composition at the University of California, Riverside. He created more than 180 works for orchestra, chamber music, electroacoustic, audiovisual and multimedia. His works resulted from numerous orders and have been acclaimed in the United States, Europe, Russia, Asia and Brazil. Chagas

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develops extensive research in semiotics, philosophy, electroacoustics, multimedia, and technology. His book *Unsayable Music* (Leuven University Press, 2014) presents theoretical, critical and analytical reflections on key themes of contemporary music. He recently edited the book *Sounds from Within: Phenomenology and Practice* (Springer, 2021) and published the book *Zwischen Klängen und Apparaten: zur Theorie und Praxis der elektronischen Musik* [Between sounds and apparatuses: theory and practice of electronic music] (Rediroma, 2021) Chagas has received several international awards, including recently the prestigious Fulbright research grant for an audiovisual composition project in Russia.

2:30PM Concert Demonstration: “I am reaching out...”

Anna Pasztor, New York

Gloria Damijan, Austria

Concert demonstration of a visual poem about the concept of distance with live sound intervention

Sound: Gloria Damian, Visuals: Anna Pasztor, Audio Routing: Mike O'Connor

We will dissect the meaning of distance from a contemporary perspective. Examine how the experience of “distance” has changed in the last 50 years, and the relationship between physical and emotional distance and their relationship to the recent technological changes. We are also interested in reflecting on how the idea of “truthfulness” has changed, the current tendencies of “staging everyday life” to make it more efficient in remote communication. After the presentation of the piece we will present about the creative process and aesthetical considerations.

Anna Pasztor is a New York based multidisciplinary artist who was born and raised in Budapest, Hungary. She started her art career there as an actress in independent productions. In 1991 she relocated to Lisbon, where she created and produced numerous pieces as a choreographer/director. In 2003 she received an achievement grant to study Laban Movement Analysis In New York City. After becoming a CMA, her interest moved towards the visual arts, multimedia, video and film production. She was the recipient of numerous grants, awards, and scholarships from Harvestworks, Lower Manhattan Cultural Council, New York Foundation of Arts, Outpost Artists' Resources, and the Puffin Foundation, among others. Her installations and videos were shown in several festivals and galleries in the US and internationally.

3:30PM Concert Demonstration: UnStumm – Augmented Voyage

UnStumm directed by Nicola Hein and Claudia Schmitz with Katherine Liberovskaya, Dafna Naphtali, Lillevan, and Seth Cluett, New York and Berlin

UnStumm – Augmented Voyage is a new work of audiovisual performance group UnStumm (<https://unstumm.com/>), curated by time-based media artist Claudia Schmitz and sound artist Nicola L. Hein with alternating guest artists, developing the collaborative

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concept of UnStumm into the space of telematic Augmented Reality real-time performances.

Furthermore, it is an Augmented Reality app for IOS and Android, that enables audiences to receive our telematic real-time performances as Augmented Reality experience with 3D video sculptures and virtual 4 or more channel loudspeaker systems.

We developed our own framework for streaming, using JackTrip (for audio) and OBS (for video) to livestream to our server, and stream the audio and video from our server to the users smartphones. The 3d model / video stream rendering and the projection of individual audio streams on virtual speaker and distance encoding happens on the audience's smartphones.

The app UnStumm - Augmented Voyage can be downloaded from our website (<https://unstumm.com/augmented-voyage/>).

It was developed in collaboration with programmer Sven Hahne.

Based on the collaborations that have already taken place worldwide (in 12 countries, with 53 artists*), UnStumm - Augmented Voyage is a performance series of with Schmitz, Hein, and selected international artists, performing telematic audiovisual pieces in Augmented Reality that can be livestreamed by the audience using the Augmented Voyage app. UnStumm - Augmented Voyage is about the equal communication visual artists and musicians in audiovisual real-time performances in telematic augmented reality settings. The performances are accessible to the audience as a virtual exhibition, unlimited by time and space, as fixed media pieces via the media library of the UnStumm - Augmented Voyage App.

Katherine Liberovskaya - live moving image
Dafna Naphtali - electronics
Claudia Schmitz - live moving image onto virtual sculpture
Lillevan - live moving image
Axel Dörner - trumpet, electronics
Nicola L. Hein - guitar, electronics

Katherine Liberovskaya is a Canadian intermedia artist based in New York City. Involved in experimental video since the 80's, she has produced numerous single-channel video art pieces, video installations and video performances, as well as works in other media, that have shown around the world. Since 2001 her work predominantly focuses on the intersection of moving image with sound/music in various both ephemeral and fixed forms (projections, installations, performances), notably through collaborations with many composers and sound artists in improvised live video+sound concert situations where her live visuals seek to create improvisatory "music" for the eyes. Frequent collaborators include: Phill Niblock, Dafna Naphtali, Keiko Uenishi, Shelley Hirsch, Barbara Held, Mia Zabelka, Al Margolis (IF,BWANA),

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David Watson, among many others. Concurrently she curates and organizes the yearly Screen Compositions evenings at Experimental Intermedia NYC since 2005 and, since 2006 the OptoSonic Tea salons (co-curated with Ursula Scherrer) in NYC and various nomadic locations in North America and Europe and during the Covid pandemic on-line. In 2014 she completed a PhD in art practice entitled "Improvisatory Live Visuals: Playing Images Like a Musical Instrument" at the Universite du Quebec in Montreal (UQAM). www.facebook.com/liberovskaya

Dafna Naphtali is a singer/electronic-musician/sound-artist and improviser/composer of experimental, interactive electro-acoustic music. Active since the mid-90's, she writes custom computer programs for projects in live sound processing of voice and other instruments, multi-channel audio, musical robots, and audio-augmented reality soundwalks. Drawing on an eclectic musical background to interpret Cage, Stockhausen and other composers, she collaborates with musicians/video artists around the world. Recent releases include: "Microcosmopolitan", (Contour Editions) Chatter Blip w/Chuck Bettis, "We Q", w/saxophonist Edith Lettner (upcoming, Clang), "Landmine" for Kathleen Supové, Disklavier piano, live processing ("Ear to Ivory", Starkland). Her soundwalk (w/U-GRUBE AR by Richard Rodkin) include Walkie Talkie Dream Angles (Washington Square Park NYC) and Walkie Talkie Dream Garden (waterfront in Hamburg/Germany and Brooklyn/NY). Her "Audio Chandelier" multi-channel sound installation/sculpture, created with metalsmith Ayala Naphtali, has been on Governor's Island during the summer of 2021 presented by Harvestworks. www.dafna.info

Lillevan is an animation, video and media artist. He is perhaps best known as founding member of the visual / music group Rechenzentrum (1997-2008). Lillevan has performed and collaborated with many artists from a wide array of genres, from opera to installation, from minimal electronic experimentalism to dance and classical music; performed and exhibited all over the globe, and at all the major media festivals. <https://www.lillevan.com/>

Claudia Schmitz (*1975)

"My work starts where the media intersect. I am not interested in the modernity of technology as such but in its capacities for creating new imaginary dimensions." As an international timebased media artist, Claudia Schmitz explores boundaries: Limits of perception, real and imagined barriers, liquid processes, body discourses. She explores paradigms of media translation - as a solo artist and in collaborative projects. She uses sculpture (pneumatic, paper, artist books...), multidimensional drawing, moving image, and food to explore new forms of sound, space and experience. Exploring socio-urban fabrics, and challenging hegemonial perception, sustainability, synaesthesia, identity in virtual and real space, re- vs. interactivity, intermediality, intermedial communication are main topics of her current artistic research. By passing through temporary stages, by discarding and re-inventing themselves, her pieces explore oscillating stages of being and non-being, of existence inside and outside the image. Relying on the spectators to trigger them,

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many of her pieces discuss the extent and possibilities of participation. internationally active artist and educator - won numerous awards and nominations - present in international public and private collections.
<http://www.cces-claudiaschmitz.de>

Seth Cluett is a composer and visual artist who creates work that explores everyday actions at extreme magnification, examines minutiae by amplifying impossible tasks, and tries to understand the working of memory in forms that rethink the role of the senses in an increasingly technologized society. Ranging from photography and drawing to installation, concert music, and critical writing, his “subtle...seductive, immersive” (*Artforum*) sound work has been characterized as “rigorously focused and full of detail” (*e/i*) and “dramatic, powerful, and at one with nature” (*The Wire*). The recipient of grants from Foundation for Contemporary Arts Emergency Fund and Meet the Composer, his work has been presented internationally at venues such as The Whitney Museum, MoMA/PS1, Moving Image Art Fair, CONTEXT Art Miami, GRM, and STEIM. His concert work has been commissioned by ensembles ranging from the Hong Kong Sinfonietta and the International Contemporary Ensemble to So Percussion, Catch Guitar Quartet, and Clogs and is documented on Line, Sedimental, Notice, and Winds Measure recordings. Cluett is the Assistant Director of the Computer Music Center and Sound Art Program at Columbia University and is Artist-in-Residence with Experiments in Art and Technology at Nokia Bell Labs where he maintains a studio and is active in research on virtual and augmented reality acoustics and multi-sensory communication.

Nicola L. Hein is a guitarist, sound artist, composer and researcher in music and aesthetics. His work is driven by the interaction of sound and space, light, movement, thought and the becoming of embodied and intermedial intelligence in aesthetic systems, community and technology. In his artistic work he uses physical and electronic extension of the electric guitar, sound installations, cybernetic human-machine interaction with A.I. interactive music systems, Augmented Reality, telematic real-time art, ambisonic sound projection, instrument building, conceptual compositions. Inter-media works with video art, dance, literature and other art forms constitute another focus of his practice. With the support of the Goethe Institute and many other institutions, his artworks have been realized in more than 30 countries worldwide. He worked with many of the world's most established musicians in the field of sound art and improvised music. Furthermore, he works as a researcher in the field of aesthetics, gives lectures at different institutions around the world and, following an invitation of Prof. George E. Lewis, has been a visiting scholar at the music department of Columbia University in New York. <https://nicolahein.com/>

4:30PM Social

(5:30PM-8:00PM Break)

8:00PM Lab

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9:00PM Concert Demonstration: NowNet Arts Lab Ensemble

Sarah Weaver, director, International

NowNet Arts Lab Ensemble is a platform for contemporary network arts research, developments, and discussions on artistic and technological practices internationally. The Lab is open to contemporary musicians, actors, dancers, and live visual/video artists. The ensemble will perform utilizing JackTrip audio.

Christian Pincock, trombone (Seattle), Angelo Branford, guitar (New York), Colin James Gibson, guitar (Toronto), Tom Zlabinger, bass (New York), Diane Roblin, piano, electric keyboards (Toronto), Anna Pasztor, multidisciplinary (New York)

10:00PM Concert Demonstration: COINCIDENT: Strategies for Telematic Collaborative Creation informed by Themes of COMMUNICATION, ISOLATION, and DISTANCE

Scott Miller, director, Ensemble Zeitgeist, St. Cloud State University, Minnesota

Live performance of an episode of COINCIDENT with the ensemble Zeitgeist, followed by a presentation of the strategies devised for telematic collaboration in the realization of this project. COINCIDENT is a telematic, multi-episode, audiovisual collaboration between composer/electronic musician Scott L. Miller, new music ensemble Zeitgeist, video/installation artist Carole Kim, spoken word artist Joe Horton, new music ensemble No Exit, and an evolving list of additional artists of various disciplines. COINCIDENT was commissioned by Zeitgeist in May 2020, and is being developed and released episodically over the course of 2021. The development process led down different paths, forks along a trail of artistic inquiry informed by the central themes of COMMUNICATION, ISOLATION, and DISTANCE. In light of the world's collective experiences in 2020, these aren't particularly surprising. They have provided a solid foundation for the exploration of different strategies to telematic collaborative creation, both technical and aesthetic.

The themes of communication, isolation, and distance were the starting points for the collaboration, aesthetically. A key part of the process has been figuring out the "process" of making art in an environment of pandemic-induced isolation. What strategy or strategies do we employ in order to produce new work in an environment that is new to us and which is itself undergoing transformation? My answer to that question begins with working with trusted collaborators with whom there is a history of creative relationships. Beyond that, it has been to establish a methodology for each episode based on a specific challenge or opportunity posed by the themes and our tools/technology available to address them.

COINCIDENT employed the following strategies to meet technical concerns raised by a telematic environment, which also led to certain aesthetic outcomes:

- Applying musical processes enabling individual performers to produce music based on local information, free of synchronous expectations. This involved looking to

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imitative contrapuntal traditions, which lead to a polyphony of truly (in some cases, radically) independent voices when mediated by a latent/asynchronous communication system;

- Devising a multitrack telematic performing and recording environment, enabling the use of traditional studio editing and post-processing techniques to produce a finished product that meets audience expectations of professional musical output;
- Working with timbral material that either masks or is sonically-adjacent to the glitches and distortions inherent in audio signals transmitted over the internet.
- Embedding game-like challenges to the performance of a composition as an alternative to prescriptive, synchronized compositions.
- Using scores that include or are dependent upon individual and collective improvisation, including text, static graphic scores, and animated music.

Scott L. Miller is an American composer described as ‘a true force on the avant-ambient scene’ 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 the use of electronics, exploring performer/computer improvisation and re-imagining ancient compositional processes through the lens of 21st century technology. His recent work experiments with VR applications in live concerts, first realized in his composition Raba, created for Tallinn-based Ensemble U:. In 2019, Miller released The Blue in the Distance, a 360° Virtual Reality film featuring his sonically immersive, classical ambient style. The film explores Quarry Park Reserve in Waite Park, MN. Since spring of 2020, he has become an active producer of telematic music, using specialized software and home-quality internet to produce live concerts and commercial recordings while socially distanced with musicians and audiences at home rather than in the concert hall. He is currently working producing monthly webisodes commissioned by his long-time collaborators, the new music ensemble Zeitgeist, in a series of works collectively titled COINCIDENT. These are rehearsed and recorded telematically and feature collaborations with live installation video artists (Carole Kim), spoken-word artists (Joe Horton), and members of Cleveland-based ensemble No Exit. Three time McKnight Composer Fellow, his work is frequently performed by soloists, ensembles, and at festivals throughout North America and Europe. Recordings of his music are available on New Focus Recordings, Innova, and other labels. His music is published by the American Composers Alliance, Tetractys, and Jeanné. His most recent albums are Ghost Layers: TAK Performs Miller (FCR253) and 05 IX (RR006), recorded telematically with the UK-based ensemble rarescale. Miller is a Professor of Music at St. Cloud State University, Minnesota, where 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 Director of SEAMUS Records.

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11:00PM Concert Demonstration: Electo Electro: Whitewash

Mike Richison, Monmouth University

“Electo Electro: Whitewash” is an interactive installation and performance that combines music, news footage, and politics. It consists of iMacs, iPads, custom software (Max MSP Jitter), and projections. Performers and participants can remix political footage from the January 2021 insurrection in a structured sixteen beat loop.

Mike Richison is a multimedia artist and an Assistant Professor at Monmouth University in New Jersey where he teaches motion graphics. He employs a variety of approaches including sculpture, graphic design, and interactive video. His work utilizes found objects such as turntables, voting booths, and scavenged video clips as well as the Max MSP Jitter programming environment. Mike has exhibited at Autonomous Cultural Centre Medika (Zagreb, Croatia); Figment NYC and Art in Odd Places (New York); and Peters Valley School of Craft and Morris Museum (New Jersey). Before moving to New Jersey in 2007, he lived in the Detroit, Michigan area for several years.

SUNDAY NOVEMBER 7

12:00AM Concert Demonstration: As of So Little Space

Michal Seta, director, Kaon’CPTs, International

A musical immersive comprovisation for any number of remotely comprovising musicians and any instrumentation. As of So Little Space is inspired by the social dynamics resulting from interpretation of words, sentences, directives, suggestions or rules. Written specifically for the Kaon'CPT collective's participation at the B.E.A.M.S. event, it tries to embrace many things at once: the practice of [\[\[https://en.wikipedia.org/wiki/Game_piece_\(music\)\]](https://en.wikipedia.org/wiki/Game_piece_(music))[game pieces], the trust in collective ease for improvisation, the use of the sole requirement for participation: NINJAM software for distributed musicking, renewed interest in InScore software for dynamic scores, the last minute action, improvisation and awareness of one's sonic environment and that other participants, the whole inside Mozilla Hubs virtual environment. Some instructions sound contradictory and call for participant's cognitive effort to interpretation, either logical or emotional. This piece is meant to yield wildly different results from one performance to another.

All participating musicians use NINJAM software to deliver the performance. A common (in NINJAM's sense) metronome synchronises them to a pre-defined musical time interval. They follow a semi-automatic score with written/symbolic instructions to perform some musical actions. The instructions range from musically inclined ("choose

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a chord and play it on beats") to very vague/poetic ("be like water"). They have to negotiate their way through interpretation of the score suggestions and overall sonic situation.

The piece does not call for any specific instrumentation or skill. Any interested individual capable of operating a musicking device and handling NINJAM is welcome to participate, IRL or remotely.

This concert demonstration has an accompanying presentation entitled "The KaonCPT collective: building a musical culture of not-in-real-life performance through conducted live improvisation" by Nicolas Bouillot and Michal Seta.

The Kaon'CPTs is a collective dedicated to flip along several time realities. Undecided, their action oscillates, alternates from physical to virtual, hesitates between now, before and later. Previous activities include synchronized network music, implementing timecode-based behaviours and listening to buffer underflows in interactive cyberworlds. Actually, nothing periodically unusual can affect Kaon'CPT's conservation of entropy.

The core members have been operating music together at previous occasions, including collaborations with scientists (The Melatab, at Network Music Festival in 2013) and unmanaged kids (Gaping Fools, since 2007 in garages, caves and living-rooms). Despite some fruitful solo carers, the Kaon'CPTs are inviting friends for musicking sessions. The energy is bounded from below.

Kaon'CPT members, (GMT-4) are Michal Seta (concept/charge conjugation), Nicolas Bouillot (concept/time reversal), Bennett Smith (dispersion), Emmanuel Durand (graphical memory), Nina Ripoll (action) and Zack Settel (entropy). Other friends have been determined in a near future, including Stuart McLeod (GMT-7), Hiroya Miura (GMT+9), D. Andrew Stewart (GMT-7) and Dirk Stromberg (GMT+8).

1:00AM Social

(2:00AM-11:00AM Break)

11:00AM Lab

12:00PM Paper: Blended Learning in Performing Arts/ Stage Management - Understanding Stage Management in the 21st century in Australia - A Preliminary Survey
Teresa Fok, Edith Cowan University, Australia

The researcher discusses several sources concerning approaches to blended learning in general higher education Institutions (HEIs) and specifically how it has been implemented in a stage management context. Although the researcher's survey was conducted at the beginning of the COVID-19 pandemic (between March to May 2020), and

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several questions were directed at blended learning, the consequences of performances and certain modes of teaching becoming impossible had not completely happened. The urgency of the problem was therefore not reflected in the survey. However, since the survey was completed, the COVID-19 pandemic has radically and some might argue irreversibly changed theatre production, the events industry and importantly, modes of teaching and learning in performing arts like music, dance, theatre and technical and production management. Therefore, the researcher has included a discussion of blended learning in general, and in particular to the delivery of the stage management curriculum.

This study is specifically designed for Australia with detailed description and grounded first-hand and this is an important original contribution made by this study. Blended learning refers to learning design that strategically, systematically and effectively integrates a range of face-to-face, online, mobile, distance, open, social and other technologies that enhances learning across physical and virtual environments, as informed and driven by student needs, and support for desired learning activities and learning outcomes.

(Blended Learning @James Cook University - A guide for staff 2015 p.7)

From the researcher's earlier investigation, blended learning in performing arts has been developing worldwide for the past 15 years. It has been cited by various authors; including research on the use of technology, especially about mobile devices and blended learning in Dance and Drama teaching but is still in an early stage (Li, Zhou, & Teo, 2017); in Dance and Drama classes, however, the use of mobile technology in teaching is limited (Robinson, 2015; D'Cruz & Dennis 2020); Dance and Drama teaching methods, nonetheless, are still quite traditional and conservative (Calvert, Wilke, Ryman, & Fox, 2005).

There is evidence that blended learning in stage management has been utilised in the USA for more than 15 years. Queensland University of Technology (QUT) Australia has been conducting blended learning in stage management over the past few years according to Carly O'Neil, the Study Area Coordinator (Technical Production) and Lecturer in Stage Management - BFA (Technical Production). However, the current situation demands an unprecedented emphasis on a blended learning approach, and the near future will be inherently experimental with no real precedents to refer to. Due to the long tradition of stage management being taught Face-To-Face (FTF) with production practice and workshops in place, it seems to the researcher that blended learning for the delivery of stage management curriculum will be challenging.

Teresa Fok is a Stage and Events Manager, lecturer, performing arts researcher, first aider and caregiver. She is about to embark her PhD study journey with Deakin University in Melbourne, Australia after finishing her Master of Arts by Research (Performing Arts) at the Western Australian Academy of Performing Arts, Edith Cowan University in Perth, Australia with the thesis entitled 'Understanding Stage Management in the 21st Century in Australia: A Preliminary Survey'

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(<https://ro.ecu.edu.au/theses/2419>), in addition to a PhD proposal with a working title 'Burning Out: An Industry Survey addressing the Work-life Balance and Remuneration of Theatre Technicians in Singapore'.

Teresa was the recipient of no fewer than 12 scholarships, bursaries and prizes during her period of completing a Master of Arts by Research (Performing Arts) from the Western Australian Academy of Performing Arts, Edith Cowan University (Australia), a Postgraduate Certificate in Culture, Creativity and Entrepreneurship from the University of Leeds (UK), and a Bachelor of Fine Arts (First Class Honours) from the Hong Kong Academy for Performing Arts (Hong Kong) majoring in Stage Management. Fluent in English, Cantonese and Mandarin, Teresa's professional stage management career has spanned over two decades and 15 countries including large scale international productions: Shaolin Wheel of Life World Tour, Singin' in the Rain, Cabaret, Dirty Dancing, OzAsia Festival, Hua Mulan, As You Like It, Pygmalion, Les Misérable, The Motown Event, Jekyll & Hyde, Hong Kong Disneyland Opening Promotion Video and finance roadshows international corporations. Moreover, Teresa has had experience working for a broad range of production companies including: Sports and Entertainment Ltd (Australia), The Bell Shakespeare Company (Australia), Brisbane Festival (Australia), Resorts World Sentosa (Singapore), Oriental Events Co. Ltd. (China), Chromatic Production Ltd. (UK), and Cameron Macintosh & Lunchbox Theatre Production Ltd. (Worldwide). Teresa's academic experience has included being Associate Lecturer in Stage Management for the Diploma in Arts Business Management under the School of Humanities and Social Sciences at Ngee Ann Polytechnic (Singapore); the Programme Chair for Production Management and Lecturer for Diploma in Arts and Theatre Management at Republic Polytechnic (Singapore) and the Programme Leader for BA (Hons) Technical Theatre and Diploma in Technical and Production Management at LASALLE College of the Arts (Singapore). Teresa is a lifelong member of the Hong Kong Association of Theatre Technicians & Scenographers (HKATTS), an Individual Member with Organisation Internationale des Scénographes Techniciens et Architectes de (OISTAT) and a Student Member with United States Institute for Theatre Technology (USITT).

12:30PM Paper and Concert Demonstration: The artefacts of 'not here'

Juan Parra Cancino, Jonathan Impett, Nicholas Brown, Magno Caliman, Daniela Fantechi, Orpheus Institute Belgium

The massification of communication technology due to cost reduction has been paired with the commercially driven perpetuation of an illusion: that such technology is friction-free, that it facilitates and even acts as an enhancing prosthesis of the abilities of its user.

As a consequence of the pandemic the world continues to experience, our field of network music performance has gained unprecedented interest from music practitioners of all kinds. Understandably, the emphasis has been on 'making things happen'. But what things? And how? Although the need to transfer the musical activities conducted

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in classrooms, rehearsal spaces and concert halls into the telematic realm has generated a number of initiatives and solutions, reflection on the nature of the music being made in these contexts tends to stop with measuring the expectations of technology as a transparent agent and the (speed-of-light, age-of-cabling constrained) reality of the impossibility of achieving that goal.

We aim to focus our reflections beyond that, seeking to articulate and embrace what the displaced, distributed nodes of a network performance generate as unique intentional, and unintentional musical artefacts.

In the “Music, Thought and Technology” research group, we have begun to put these reflections into practice, pairing the experiential knowledge of embracing the unexpected, non-transparent features of the tools used in live electronic music performance with the distributed nature of our group. Using free improvisation as the musical conduit, we work with the extraction of salient features of a distributed performance, such as simultaneous room acoustics and variable latencies. The sonification of these artefacts, differences, glitches and features of network performance will be used to generate a unique voice, the network’s voice, as a musical counterpart to be emphasized rather than suppressed.

Juan Parra Cancino (b. Chile, 1979) 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 compositions have been performed in Europe, Japan, North and South America in festivals such as ICMC, “Sonorities”, “Synthese”, and “November Music”, among many others. His acousmatic piece *Serenata a Bruno* obtained a special mention at the Bourges electroacoustic music competition of 2003 and in 2004, his piece *Tellura* was awarded with the residence prize of the same competition. 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. 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. Since 2009 Parra is a fellow researcher at the Orpheus Institute (Ghent, BE), focused on performance practice in Computer Music.

Jonathan Impett 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

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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.

Nicholas Brown

Nicholas Brown (UK, 1974) is a composer, performer and writer based in Dublin. He is fascinated by the way digital technology develops individual musicianship and forges new communities of practice. Recent creative work includes Chit-chat (2017), an interactive installation for Science Gallery Dublin, which transforms a human voice into a bird call; and Structural Cohesion (2019), a site-specific vocal work performed at Concertgebouw Brugge, Belgium. Recent writing includes book chapters in Experience Music Experiment: Pragmatism and Artistic Research and Sound Work: Composition as Critical Technical Practice, both published this year by Leuven University Press. For more information: <https://www.nicholasbrown.co.uk>

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. Magno 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, he currently works as a Doctoral Researcher at the Orpheus Institute - Belgium, investigating technologically mediated experimental sound practices.

Daniela Fantechi

Daniela Fantechi (1984) is an Italian composer and researcher. She studied Composition at Conservatory "Luigi Cherubini" of Florence, with Paolo Furlani and Rosario Mirigliano, and at Kunstuniversität in Graz, with Beat Furrer, Clemens Gadenstätter and Georg Friedrich Haas. She also graduated with first-class honours in Master of Musicology at the University of Florence. Her compositions have been performed in Italy, Austria, Spain, Portugal, France, England, Switzerland, Belgium and Germany. Her work focus on the exploration of the sonic possibilities of acoustic instruments, combining aspects of traditional composition and extensive research on sound, through its modes of production. Her current research project concerns the composition of instrumental music implemented with a specific use of piezoelectric microphones - low cost and low fidelity contact microphones. The use of this technology allows multiple explorations of the sound matter while disclosing a different perception of the proximity of sounds.

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1:30PM Concert Demonstration: The Sonic Arts Ensemble

Marc Ainger, director, Ohio State University

Ann Stimson, Marc Ainger, Scott Deal, Oded Huberman (live-streaming)

Special Guests, Atelier Avant (Austria): Se-Lien Chuang, Andreas Weixler

We will present a concert of networked music and we will look back over the previous year to discuss some of our approaches to performing online.

The Sonic Arts Ensemble, founded by Marc And Ann Stimson, explores the extension of traditional instruments and modes of performance into new, imaginative realms of action and interaction. The ensemble is interested in the relationships between the real and the imagined – the ways in which the visceral world of sound and sound production inform our imagined worlds of sound, and the ways our imagined worlds, in turn, inform our concrete experiences.

2:30PM Presentation: Monarch Sanctuary: Recording of Telematic performance, with live talk by James Ilgenfritz

Monarch Sanctuary is a collaborative work performed by James Ilgenfritz (Contrabass), Jiryis Ballan (Buzuq), Miyama McQueen-Tokita (Koto), and Yuri Zupancic (digital animations). The quartet collaborates virtually through JackTrip for audio, and Zoom for visuals, organized into a compelling presentation using OBS. Using instruments associated with classical traditions from three disparate parts of the globe, the ensemble embraces an abstract gestural quality that serves as a neutral space where each instrumentalist can interrogate the porous boundaries of identity signification. In effect, the hierarchical relationships that define each instrument's role in traditional settings is, in this shared space, neutralized.

Composer and bassist James Ilgenfritz is recognized in *The New Yorker* for his "characteristic magnanimity" and his "invaluable contributions to New York's new-music community." James has performed around the US, Europe, and in Asia with his bands Hypercolor and MiND GAMeS. In 2021 Ilgenfritz's record label Infrequent Seams released "Aging," a collaboration with Czech-born composer/performer Lucie Vítková. This follows his previous releases "You Scream A Rapid Language" – an album of recent chamber music, which was noted in *The Wire* for its "glint of mischief" and ability to "foreground the performative and gestural elements of music making," as well as two previous solo contrabass albums "Origami Cosmos" (2017) and "Compositions (Braxton) 2011" – which featured music by Annie Gosfield, Miya Masaoka, Elliott Sharp, JG Thirlwell, and Anthony Braxton. James presented his music in residencies at John Zorn's The Stone in 2015 and 2018, and in 2011 he was Artist In Residence at ISSUE Project Room. He holds degrees from University of Michigan and University of California San Diego, and is currently pursuing a PhD in music composition at University of California Irvine. James splits his time between Brooklyn, NY and Orange County, California. www.james-ilgenfritz.com

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3:00PM Concert Demonstration: Construction/Deconstruction - A concert demonstration using Raspberry Pi's

Gloria Damijan, Austria

Jane Wang, Boston

Ximena Alarcon, United Kingdom

Gloria Damijan [(extended) Toy Pianos, Percussion, Objects], Jane Wang (Toy Pianos, Cello, Percussion, Objects) and Ximena Alarcon (Voice) are offering a telematic live performance where they demonstrate how they use Raspberry Pi Computers to make music together and overcome the physical distance between their hometowns Vienna (Austria), Boston (USA) and Bath (UK) via 'JackTrip' audio connection. Here is a short description of our technical setup:

Gloria Damijan: RPi 4B - 2GB, 16 GB SD - Card (part of package), RPi power supply, PepperTech Digital Raspberry Pi Official Keyboard and Mouse Value Pack, Blaupunkt TV screen, Motu M2 Interface with 1 Roede MP M5, 1 Schertler Basik Set and Headphones AKG K-240 Studio plugged into Input 1.

Jane Wang: RPi 4B 2GB, 32GB card, RPi power supply, PepperTech Digital Raspberry Pi Official Keyboard and Mouse Value Pack, EVICIV 7" Portable USB Monitor Raspberry Pi, Tascam USB 4x4 mixer with Shure SM58 plugged into Input 1.

Ximena Alarcon: RPi 4B - 2 GB, 32GB SD - Card, RPi power supply, Microsoft keyboard, Cirque Glidepoint mouse, Viewsonic monitor, Yamaha AG 06 Mixing Console with Shure SM58 plugged into Input 1.

We will start our demonstration performance with a short introduction of our technical set up, also mentioning the various advantages of using a Raspberry Pi:

- portability
- low cost
- no issues with internet security and firewalls
- access to a huge amount of open-source programs

After this short presentation we will start the musical part of our concert demonstration. For this part we will focus completely on the sense of hearing and therefore perform without video. The reason for focusing on the audio signal is that we want to enable the audience and of course ourselves to have an intensified listening experience. In this way we also underline the quality of the audio signal and the usability of the Raspberry Pi for achieving a satisfying musical communication throughout physical distance. We'll present an experimental improvisation with elements of performance art and 'Fluxus'. We will construct and deconstruct the complex relationship between technology, musical interaction, and overall communication to the (invisible) audience through sound, structure and deconstruction of words and command lines that appear in front of our inner eye that

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are connected to our hard – and software. This brings up the following questions, we keep on focusing during the process of rehearsing:

- To what extent can technology replace physical presence?
- How does our musical interaction develop when we just rely only on transmitting and receiving sound?
- Can and should we push the high dependency on technology out of our minds?

The following link leads to a bundle of graphics that visualize different options within the concept of ‘construction /deconstruction’:

<https://gloriadamijan.wixsite.com/website/post/visualizing-construction-and-deconstruction-of-musical-interconnections>

4:00PM Concert Demonstration: The Core

Constantin Basica, Chris Chafe, Henrik von Coler, Fernando Lopez-Lezcano, Juan Parra Cancino, Klaus Scheuermann, Christopher Jette, International

The Core is a group of six musicians that formed when the lockdowns due to the coronavirus pandemic first started in March 2020. Since then, they have been live streaming weekly telematic concerts of experimental electroacoustic improvisation. The group has explored different performance concepts, such as plain improvisation, graphical scores, text-based scores, and sound painting. Their ongoing series, the Quarantine Sessions, has presented 57 so far and they have also performed at four virtual conferences. In their one-hour weekly sessions they have had over thirty guest musicians and visual artists joining from their homes in various countries, including the US, Canada, Ireland, Germany, Lithuania, Australia, and the UK.

The Core uses free and open source technologies, including software that they have been developing themselves. The technical side of the project relies on JackTrip for uncompressed, low-latency audio streaming. Further software implementation for mixing and binaural spatialization, as well as a custom mastering suite, was developed by their group members with JackTrip, SuperCollider, Python, Pure Data and Faust. They also use Jitsi for video and OBS for live streaming. All performers connect to the audio server from their home networks.

Constantin Basica – Keyboards and live electronics (Stanford, CA)

Chris Chafe – Celletto, dilruba, and Stegosaurus (Woodside, CA)

Henrik von Coler – Hypermodular synthesizer (Berlin, DE)

Fernando Lopez-Lezcano – Synthesizers and live electronics (San Carlos, CA)

Juan Parra Cancino – Guitars (Ghent, BE)

Klaus Scheuermann – Modular synthesizer (Berlin, DE)

Christopher Jette – Electronics (Stanford, CA)

5:00PM Social