**Program Notes**

**Perripplayear**
Perripplayear explores musical texture through balancing networked delays and enabled feedback. It reposes in an awareness that networked musicians can experiment together, despite being distanced geographically and only connected through the internet. This piece explores the simultaneous use of different types of software, more or less adapted to music, in order to deliver both an audio-visual performance and an opportunity for virtual public participation and feedback. The sense of togetherness in musical and extra-musical terms for both the artist and audience depends on, among other things, the software they use. The immersive performance takes place inside a virtual world hosted in a Mozilla Hubs scene. The audience may join into the Hubs world (via smartphones, tablets, computers, even VR headsets). The musicians are also present in the Hubs world (as avatars). In addition, the synchronised music from the performance is also mixed down and offered as a stream to twitch.tv along with a video feed of the score and other visuals.

**Ambience no. x**
Ambience no. x will be created in real-time through live algorithmic composing, or live coding, which involves an analytical mindset, asking the composer/performer to problem solve by arranging numerical values (integers, floats) and text variables (symbols) following the rules of syntax of a computer programming language. Ambience is part of a series of live coded soundscapes (Ambience no. 1, no. 2, no. 3, no. x) designed to offer moments of sonic repose and whimsy for artists who have been locked down and unable to join fellow musicians in ensemble play.
**Biographies**

**Kaon'CH**
The Kaon'CHTs is an ephemeral band dedicated to flip along several time realities. Undecided, their action oscillate, alternate from physical to virtual, hesitate between now, before and later. Previous activities include synchronised networked music, implementing timecode-based behaviours and listening to buffer underflows in interactive cyber worlds. Actually, nothing periodically unusual can affect Kaon'CHTs’s conservation of entropy. The core members, mostly research members of the Metalab at La Société des arts technologiques, Montreal, have been operating music together at previous occasions, including collaborations with scientists (The Metalab, at Network Music Festival in 2013) and unmanaged kids (Gaping Fools, since 2007 in garages, caves and living-rooms). http://kaon cpt. art

**Nicolas BOUILLOT, acoustic guitar**
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 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). https://nicolasbouillot.net/

**Emmanuel DURAND, audio and visual mix**
I am a coder / researcher with a PhD in Computer Graphics from Arts et Métiers ParisTech. Aside from that I am also an engineer (from the same school), and I have a MSc in Simulation and Virtual Reality.
Currently, I work at the Society for Arts and Technology in Montreal (also named SAT) as co-director of research. Aside from writing grant applications, I spend my time there coding tools useful either to pursue research, ease and extend the usability of the devices we have, or help artists with their projects. My code can be found on my Github page and on the SAT Metalab repository.
I am mainly interested in everything 3D (modeling, rendering, OpenGL…), machine learning, photography (especially computational photography), videogames (mostly indie games these days), and space stuff.
The goal of this website is to force myself to keep my most interesting tests / ideas / prototypes a little bit organized and visible, and possibly to share with anyone who is interested. Also note that it is best viewed on a desktop computer, even if I did my best to make it look fine everywhere. https://emmanueldurand.net/

**Stuart McLEO D, percussion**
Stuart Mcleod has composed music for film, stage, and concert hall for classical, improv and rock groups.
He has played drums and percussion with Trentalange, Transpacific, Eveline’s Klang Quintet, Seattle School, composer Byron Au Yong, Gamelan Northwest and led the experimental group SIL2K.

**Nina RIPOLL, piano**

**Michaēl SETA, electric guitar, VR coordinator**
I'm 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]ationnel, commissioned by the Montreal Science Centre 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. http://djamnot.xyz/

**Zack SETTEL, voice, keyboards and kazoo**
Zack Settel was born in 1957 and raised in the New York area. He received a BFA in Music Composition from the California Institute of the Arts (CalArts), where he studied composition with Leonard Stein, Morton Subotnick, Mel Powell, and Morton Feldman. Keenly interested in the use of technology in music production/performance, Settel moved to Paris in 1986, with a Fulbright Scholarship for computer music research and composition at the Institute for Research and the Coordination of Acoustics and Music (IRCAM), headed by Pierre Boulez. After a two-year composing residency there, Settel remained at IRCAM until 1995, working full-time in the music production and music research groups. In 1997 Settel returned to North America, where he was a professor at McGill University in Canada for two years, chairing the Music Technology area, and teaching courses and graduate seminars in computer music. He also was a visiting professor of composition at the University of Montreal in 2001-02. In addition to composing full time, Settel also teaches at the Arts and Science faculty at the University of Montreal (UdM), where he gives courses in immersive audiovisual arts. He is also in (arts/science) collaboration with the Center for Intelligent Machines at McGill, working on immersive audio/music. From 2003-2008, Settel founded and directed the immersive...
audio research group at the Société des Arts Technologiques (La SAT) in Montreal, where he remains a resident artist and researcher. His latest musical exploration and research is focused on spatial organization and interaction in music composition, performance and listening. Settel has composed chamber works, studio works, as well as music for film, video, television, theater, dance, and opera. His music also includes the use of advanced live interactive electro-acoustic systems. Settel’s music is published by Editions Ambrioso (Paris), recorded on the CENTAUR, ICMA, MIT Press, and Empreints Digitales labels, and is performed regularly in North/South America and in Europe and Asia. Settel has worked with various performing ensembles including the Ensemble Intercontemporain (Paris), Le Nouvel Ensemble Moderne (Montréal), Zeitgeist (Minneapolis), the California Ear Unit (Los Angeles), and Chants Libres (Montréal). http://sheefa.net/

Bennett Keith SMITH, spoken word
Bennett Smith studied Science in school but was seduced by Computers. A partially assimilated immigrant from sunset space, He hid his light under a bushel until the fire put paid to that. He studies concept drift from a distance, still looking for his inner child. https://www.mcgill.ca/mpcl/members/current-members#bks

Dirk STROMBERG, phallophone
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-acoustique 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), MIT Fringe Festival (Singapore) and Dear Himalaya From Chiang Mai (Chiang Mai, Thailand). https://dirkstromberg.org/

D. Andrew STEWART, karlax and live coding
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. http://dandrewstewart.ca/