

**SUNDAY OCTOBER 21 · NOON-5PM · FREE  
A SYMPOSIUM OF PRESENTATIONS  
AND PERFORMANCES**

KEYNOTE SPEAKER

**DOUGLAS KAHN**

PRESENTERS

**CARRIE BODLE**

**ALEJANDRA BRONFMAN**

**PETER COURTEMANCHE**

**GORDON DJURDJEVIC**

**CELIA KING & JOEL SNOWDEN**

**KRISTIN ROOS**

**JAY BUDNEY JOHNSON**

CONVENED BY

**ROSS BIRDWISE**

**& JORDAN STROM**

**SURREY ART GALLERY PRESENTS  
SOUND THINKING 2012**

# **Snap, Crackle, Hum**

**ELECTROMAGNETICISM, SOUND, AND AUDIO ART**

Sound Thinking 2012 is part of *Open Sound*,  
the Surrey Art Gallery's ongoing series of sound art programming

# SCHEDULE

- 12pm coffee + refreshments
- 12:10-12:30 *introductions*  
Jordan Strom + Ross Birdwise
- 12:30-01:15 *keynote*  
*Conceptualism and Energy*  
Douglas Khan
- 1:15-1:30 *performance*  
Kristin Roos
- 1:30-1:40 break
- 1:40 – 2:40 *panel 1*  
*Frequencies, Translations, Quantizations*  
Carrie Bodle, Joe Snowden + Celia King,  
Jay Bundy Johnson
- 2:40 – 2:50 *break*
- 2:50 – 3:50 *panel 2 + performance*  
*Occulted Histories of Radio, Science and Nature*  
Gordan Djurdjevic, Alejandra Bronfman,  
Peter Courtemanche
- 3:50 – 4:30 *conversation + concluding remarks*

# SNAP, CRACKLE, HUM: ELECTROMAGNETISM, SOUND AND AUDIO ART

In 1876, Thomas Watson, assistant to Alexander Graham Bell, was experimenting with the earliest telephone. On that phone Bell heard the sounds of natural radio, which are the sounds of the natural electromagnetic phenomena of the planet earth. The sounds on the other end of the line would foreshadow many innovative experiments in sound and audio art that have taken place at the beginning of the 21<sup>st</sup> century.

Electromagnetism has become a key feature of modern sound performance, recording and broadcast. Scholars of sound are increasingly looking to the history of man-made electricity, the enormous field of electrical devices, the development of new technologies of communication and recent studies of geophysical electromagnetism to reconsider the nature and fundamentals of sound. This research is changing how we conceive of human landscapes and the environment. Similarly, contemporary sound artists working with new technologies and outmoded electronic devices, are investigating the fundamentals of electromagnetism to create new audio-infused environments and sculpture.

The symposium *Snap, Crackle, Hum: Electromagnetism, Sound and Audio Art* is the 4<sup>th</sup> Annual Sound Thinking symposium organized by the Surrey Art Gallery. The event will include a series of presentations and performances that address the complex relationships between electromagnetism, technology, science, the occult, and nature and culture. The aesthetics, poetics and history of electromagnetic sound will be examined, as well as how electromagnetic technologies are reshaping human subjectivity and the social world.

# ABSTRACTS

## **Douglas Kahn**

### ***Conceptualism and Energy***

One of the most iconic images of conceptual art is a photograph of what appears to be an empty office space. The space is not empty, but filled with the radio waves of two carrier-wave pieces by Robert Barry. It is often discussed as epitomizing the "de-materialization of the art object" even though Barry insisted on the materiality of the transmitted energy present. He also observed that art had unnecessarily restricted itself to a tiny rainbow patch of the electromagnetic spectrum known as visible light and that possibilities were open across the entire spectrum, from low frequencies of radio to the gamma of nuclear radiation. Since the 1960s, numerous artists and musicians have understood energies as artistic raw material and sites of practice, a trend that has increased in the present environment of ubiquitous transmissions, energy politics and new materialisms. In understanding these activities, an empty room is one of the first places to look.

## **Peter Courtemanche**

### ***Marconi vs. Fessenden and onwards***

A brief history of earth's radiosphere: from the primordial soup to the early transmitters of Marconi and Fessenden; the deep splatter of lightbulbs; cathode rays; and the magnetic sounds of the future. Working with a contemporary version of the most primitive radio technology – an ELF (extremely low frequency) transmitter and receiver – Vancouver artist Peter Courtemanche (aka Absolute Value of Noise) will play with the history of radio by mixing the sounds of natural and man-made radiation that can be found drifting through the performance space. The sounds will include recordings of re-created early cross-Atlantic transmitters, lightbulbs, high-voltage technologies, and the spinning of magnet-motors (an obscure device once heralded as the power source of the future).

## **Gordan Djurdjevic**

### ***Like Attracts Like: Some Notions Regarding Sympathy, Animal Magnetism and Electromagnetism in Esoteric Scientific Discourse***

The introduction of electromagnetic telegraphy and the birth of spiritualism occurred almost simultaneously, only five years apart from each other, in the mid-19th century USA. The apparent disembodied aspect of the scientific invention, enabling people to communicate with those who were not in their physical proximity, provided an explanatory model for the believers in the possibility of communication with the souls of deceased persons, and in the process this putative other kind of communication was labeled "spiritual telegraph" and telegraphy, vice versa, an "occult art." The seeming incongruity of the spiritualists' vocabulary is deceptive, since the attempt to strike the middle, or alternative, ground between religious convictions and scientific methods constitutes one of the defining characteristics of the esoteric or occult epistemology. This presentation surveys several representative examples paradigmatic of the occultist scientific discourse, in particular as they concern the interface between esoteric theories and the properties – imagined or real – of electromagnetism.

## **Kristen Roos**

### ***Thrum***

*Thrum* speaks of different forms of vibration that are inaudible due to being hidden underground, or made audible through turning on a device to receive them. This is articulated in the use of field recordings gathered from the Surrey Art Centre basement, through the sounds that are silently carried through the air using radio waves, and through the use of a 2.4 GHz receiver. The performance will sound and feel different depending on where the listener is seated in the space. The extreme lows of the machine room combine with glitchy electromagnetic highs and FM radio static, creating mountains and valleys of noise and infrasound.

## **Alejandra Bronfman**

### ***In Search of the Radiolette, In the Grip of Invisible Rays***

In December of 1919, William McGaffick stated in sworn testimony that he had been driven to near insanity by his enemies, who spied on him using the principle that “using wireless telephone apparatus, a beam of invisible rays may be directed to a person’s throat. Using a beam of invisible rays directed to the throat, the microphonic sounds made by the vocal cords may be carried by the beam of rays to the wireless telephone apparatus, and amplified by the apparatus until heard by the operator of said apparatus. This is a well-known principle.” During the early years of radio technology, technicians, scientists and industry leaders collected possibilities, some strange and some strangely prescient, for the optimal relationship between electronically transmitted noise and human bodies. This paper will explore some of those possibilities and their implications for our understanding of the shifting boundary between ears, sound, electricity, and wires. From David Sarnoff’s “radiolette” and “radio coat” to the claims of McGaffick that people were torturing him by “telephoning him from a distance” using only wireless telephone apparatus, the use of electronic sound was in this period frequently conceived as an extension of, rather than wholly distinct from, the human body. The distinction between nature and technology was both at stake and ignored when radio was new.

## **Jay Bundy Johnson**

### ***Interference, Attractors and Entrainment: The Metaphysics of Electromagnetism***

Using frequency as a starting point, Jay Bundy Johnson suggests the notion that beauty (sonic or otherwise), is a by-product of multiple frequencies interacting. Each interaction is the root of a synergistic interference pattern that entices our brain into a particular mode of perception. Referencing the efforts of Robert Monroe, James Crutchfield and his own electromagnetic works, Johnson introduces three manifestations of frequency and how they might be utilized within the context of possible soundworks.

## **Joel Snowden and Celia King (Elemental Harmonics)**

### ***Untitled***

There is a big difference between how numbers are taught and how they play out in nature. The integers (1-infinity) are used in both acoustics and electromagnetic theory in the form of the Fourier Series. We will focus on this all-pervasive series of integers to illustrate that numbers (which we use to measure all vibration) are both the key to our knowledge and a measure of our limitations.

## **Carrie Bodle**

### ***Sonification/Listening Up***

Carrie Bodle's visual and sound artworks are immersive installations that explore the relationships between art and science, translating inaudible or invisible phenomena into sensible experiences. Since 2005 she has been engaged with processes called "sonification" and "visualization" – that is making data patterns audible and visible. This translation of inaudible or invisible phenomena into sensible experiences interests her as it engages new interactions between scientific research and its extension to the public through art. Her process of translating data into sound and visual material is usually conducted in collaboration with a scientist who has designed the data collection. In 2005 she collaborated with an atmospheric scientist at MIT's Haystack Observatory on *Sonification/Listening Up*, a multi-speaker site-specific sound installation on I.M. Pei's iconic Building 54 at MIT. The speakers, temporarily installed across the facade of Building 54, broadcast audio representations of sound waves embedded in the Earth's charged upper atmosphere, or ionosphere, a region under active radar study by the Atmospheric Sciences Group at MIT's Haystack Observatory. The sounds from *Sonification/Listening Up* came from ions 'hit' with directed radar (high energy electromagnetic waves) and then audible frequencies were calculated from resonance patterns. Different ion concentrations at different altitudes in the ionosphere result in different sounds. This project utilized sound as a representation of research at MIT, extending to the public what is normally invisible.

# BIOGRAPHIES

## **Ross Birdwise**

Ross Birdwise is a Vancouver-based musician, visual artist and occasional curator. His interests include video art, electronic music and vocal processing, improvisation in solo and in groups, and using art and music to explore philosophical ideas concerning materiality, the body, consciousness, and time and space.

## **Carrie Bodle**

Carrie Bodle lives and works in Seattle. She is a visual and sound artist who creates immersive installations that explore the relationships between art and science, translating inaudible or invisible phenomena into sensible experiences. Recent works have taken the form of temporary, large-scale public art installations such as *Sonifications* (2005) which gave a voice to atmospheric research at MIT's Haystack Observatory through 35 loudspeakers distributed across the facade of IM Pei's Green Building in Cambridge, MA. Artist residencies and fellowships include Rockefeller Foundation Bellagio Center, IBM Watson Collaborative User Experience Group in Cambridge, MA, and 911 Media Arts Center/Henry Art Gallery in Seattle, WA. She is included on the Washington, Oregon, and City of Seattle Public Artist Rosters and has received grants from the City of Seattle, 4Culture, and MIT Council for the Arts. Bodle has exhibited widely at venues including the Location One Gallery in NYC, the DeCordova Museum in Lincoln, MA, Grunwald Gallery at Indiana University, and CoCA Seattle. She is a lecturer at the University of Washington Bothell and the University of Washington's School of Art and received her Master of Science in Visual Studies from the MIT Visual Arts Program and BFA in Art and Technology at The Ohio State University.

## **Alejandra Bronfman**

Dr. Alejandra Bronfman is an Associate Professor in the Department of History at UBC. Prior to this, she was Assistant Professor at the University of Florida and Yale University. Her current research aims to record the unwritten histories of radio and related sonic technologies in the

Caribbean. *Talking Machines: Caribbean Media and Publics* explores the perambulations of objects in empires in the early twentieth century, with particular attention to new media including telegraph, telephone and broadcasting and their relationships to capital flows, imperial projects and regional political mobilizations. She is the author of *Measures of Equality: Race, Social Science and Citizenship in the Caribbean* (University of North Carolina Press, 2004), *On the Move: The Caribbean Since 1989* (Zed Books, 2007), and co-editor of *Media, Sound and Culture in Latin America and the Caribbean* (University of Pittsburgh Press, 2012).

### **Peter Courtemanche**

Peter Courtemanche (<http://absolutevalueofnoise.ca>) is a contemporary sound and installation artist from Vancouver. He creates radio, installations, network projects, performances, curatorial projects, and handmade CD editions. His art works often have a literary basis - inspired by narrative texts and the history of specific installation sites. Works include: *Divining for Lost Sound* (1996-99), .. *devolve into II* .. (commissioned by ORF Kunstradio, 2002), *Spark-Writing* (2004), *Preying Insect Robots* (2006), *The Laughing Dress* (a collaboration with Lori Weidenhammer, commissioned by Video Pool, 2008), *Poison Mentor* (2009), and *Illuminated Shroom* (2011). The artist uses a variety of gadgets - custom turntables, lamp filaments, wire coils, high voltage ionizers, ELF/VLF receivers, motors, magnets, and solar-power. His work has shown across Canada and in Europe.

### **Gordan Djurdjevic**

Gordan Djurdjevic holds a Ph.D. degree from the Department of Asian Studies at the University of British Columbia and currently teaches as a Sessional Instructor in the Department of Humanities at Simon Fraser University. He is the author of *Masters of Magical Powers: The Nath Yogis in the Light of Esoteric Notions* (VDM, 2008); *India and the Occult: The Influence of South Asian Spirituality on 20th Century British Occultism* (Equinox, forthcoming); and is a contributor to the anthology *Aleister Crowley and Western Esotericism*, edited by Henrik Bogdan and Martin P. Starr (Oxford University Press, 2012).

## **Elemental Harmonics (Celia King and Joel Snowden)**

celia jacqueline king is a multi-disciplinary artist, international award-winning published author, independent curator and producer; her print artists books, sculptural books and video book media exhibiting in Italy, Japan, Canada and USA. Published by Chronicle Books, San Francisco and Raincoast Books, Canada, she has appeared with CBC, Vancouver International Writer's Festival, Knowledge Network and received awards from BC Book Fair and Bologna Book Fair, the Critic in Erba. She has curated and produced many group exhibitions in Vancouver, in artists book media, visual and installation arts, media and performance, with the A440Hz Project, New Forms Festival, Word on the Street and Emily Carr University. An Honours Graduate in Interdisciplinary Fine Art and Emily Carr Alumni, Award 2000, she is currently engaged in the artists book and interactive media production of the explorative sound, physics and interdisciplinary arts A440Hz EME Project, receiving support from Inter-Arts, Canada Council for the Arts.

Joel James Blaire Snowden is a video editor with a long-standing interest in the musical laws that govern our shared reality. He was classically trained on piano as a child and studied sound production and engineering. All this musical training was eventually translated to the video arts at Pointless Hysteria, where he began to document live performances to create short video documentaries. He has also worked with the Co-Design Group, Insight Film Studios and currently, the Benefic Group. In 2006, he teamed up with Celia King to create A440Hz Electromagnetic Explorations, formed to investigate the mathematical/musical laws underlying matter and electromagnetism. Throughout the summer of 2007, they worked with almost thirty artists to create an artistic rendering of the electromagnetic spectrum, with musical and poetic performances. Since then, he has been studying the history of mathematics and physics with the aim of understanding the tools that have defined our progress.

## **Jay Bundy Johnson**

Jay Bundy Johnson played drums in a number of Vancouver's seminal Art Rock bands during the explosive independent music scene of the 1980's.

Within a fertile 8-year period, Johnson performed and recorded with The Bonus Boys, Maurice and the Clichés, Random Variables, Moccasin Telegraph and The Swagmen. As the 80's wound down, Johnson began work with singer/songwriter, Billy Cowsill. His 11-year tenure with Billy and the Blue Shadows included the release of two critically acclaimed Alt-Country recordings and hundreds of live shows. Johnson's art practice followed a parallel course. His studies at Emily Carr led him to develop a hybrid, electro-acoustic kinetic practice. His work has appeared in solo and group shows in Canada and the United States. He continues to produce in a variety of mediums with sound and motion being a key element in his work.

### **Douglas Kahn**

Douglas Kahn, historian and theoretician of the media arts and music, is Professor and Australian Research Council Fellow at the National Institute of Experimental Arts (NIEA), University of New South Wales, Sydney. His books include *Noise Water Meat: A History of Sound in the Arts* (MIT Press, 1999), *Source: Music of the Avant-garde, 1966-1973* (UC Press, 2011); *Mainframe Experimentalism: Early Computing and the Foundations of the Digital Arts* (UC Press, 2012); and *Earth Sound Earth Signal: Energies and Earth Magnitude in the Arts* (UC Press, 2013). His current project is on a natural history of media.

### **Kristen Roos**

Kristen Roos is a Vancouver based artist and musician whose practice includes sound design for dance, electronic and vocal music, Soundwalks, teaching at Arts Umbrella, and audio art. The exploration of the underground, the low frequency, and the hidden is present in many of his works. This includes his 2007 piece *Ghost Train*, which was installed in unused Toronto subway station and used recordings derived from subwoofers and subway trains. As part of a recent Vancouver New Music Soundwalk called *Below the Surface*, Kristen guided participants through the soundscape that lies deep beneath the city in the reverberating cement caverns known as parking lots.

# ABOUT SOUND THINKING

Founded in 2008, the Surrey Art Gallery's Sound Thinking symposium is an annual one day event which brings together practitioners and professionals in the field of sound art. The symposium features leading sound artists, scholars and researchers in the field sound studies, along with visual artists who use sound as key components of their practice and musicians who experiment with the limits of music and sound. Past symposia have addressed subjects as diverse as radiophonic space, voice, new approaches ethnographic sound and acoustic ecology. Past participants of Sound Thinking have included Jonathan Sterne, Heidi Grundmann, Steven Connor, Hisham Mayet, Hildegard Westerkamp, John Wynne, Tim Hecker, and Anna Friz.

Sound Thinking is part of Surrey Art Gallery's Open Sound program. Open Sound is an exhibition program developed in 2008 to support the production and presentation of audio art forms as part of contemporary art practice. Open Sound seeks to feature the leading edge of audio art, and has included site specific installation, radio experiments, ecological practices, and other investigations into the limits of sound today.



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