

Music Programme

# Renehan Hall, South Campus

# Concert 1: Friday 8pm

Trevor Wishart *Dithyramb-Kepler63c*

Stephen Roddy *Doom and Gloom*

Andrew Harrison *Belfast 1 - the Grand Staircase*

Kerry Hagan *Cubic Zirconia*

Gordon Delap *Ashes to Ashes*

Anna Terzaroli *Dark Path #2*

Barry Truax *Earth and Steel*

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# Dithyramb – Kepler 62e

Kepler 62e is one of a recently discovered class of earth-like planets. If we were

to make landfall on such a planet we know that the laws of physics would be the

same and, if we could survive there without extensive technological support, the

properties of the atmosphere would have to be similar to those on Earth. So

music that we can hear and appreciate might well exist on this distant world - but we have no way to predict details of the technical culture or the aesthetic world in which it would have emerged.

 “Dithyramb - Kepler 62e” attempts to conjure up such an alien music using

imaginary, yet physically possible, brass and percussion instruments and

imaginative extensions of these. The instruments were created using physical

modelling software developed by the NESS research project at the University of

Edinburgh, funded by the European Research Council.

**Trevor Wishart** is an English composer, based in York. Wishart has contributed to composing with digital audio media, both fixed and interactive. He has also written extensively on the topic of what he terms “sonic art,” and contributed to the design and implementation of software tools used in the creation of digital music; notably, the Composers Desktop Project.

He was educated at the University of Oxford (BA 1968), the University of Nottingham (MA 1969), and the University of York (PhD 1973). Although mainly a freelance composer, he holds an honorary position at the University of York. He was appointed as composer-in-residence at the University of Durham in 2006, and then at the University of Oxford Faculty of Music in 2010–11, supported by the Leverhulme Trust.

# Doom & Gloom

Programme notes:

Doom and Gloom is a data-driven composition that uses sonification techniques to explore the human cost of Ireland’s economic crash as a study of changing stereotypes.

The piece opens on a comical pre-crash era stereotype of the happy go lucky Irish mischief-maker in a conversational montage from the 1968 Musical Finian’s Rainbow. This dissolves into a chaotic cloud of jagged and fragmented echoes driven by the Central Statistics Office measured decline in the Irish GNP (Gross National Product) during the crash.

This maelstrom resolves itself in the shape of post-crash era stereotype presented by a youth discussing his experiences of economic hardships. The emergence of this second stereotype is driven by the rate at which Unemployment Rate (also Central Statistics Office statistic) rose during the same period.

The piece presents a contrast of attitudes towards identity and economic hardship in Ireland from the pre-crash to post-crash eras. The flippant notion of the happy go lucky Irish mischief-maker is audibly shattered to pieces by the decline in Irish GDP and rise of unemployment leads to a new, more resonant, kind of stereotype, the jobless and depressed twenty-something with no real prospects or hope for the future.

Irish born composer **Stephen Roddy’s** music has been performed at the National Concert Hall, The Irish Sound Science and Technology Convocation, The Irish World Music Academy, The Digital Music & Arts Research Centre and Birr Theatre and Arts Centre. He has collaborated on numerous stage productions for the Legitimate Bodies Dance Company with Nick Bryson and Christina Goletti and scored many video and media productions. Stephen releases and licenses his experimental electronic music independently. He holds a B.Sc. in Music Media Performance Technology and M.A in Music Technology and is currently pursuing a PHD in Sonification Composition.

# Belfast 1: The Grand Staircase

This first piece in the *Belfast* series, The Grand Staircase, engages with narratives surrounding the cities renewal through tourism and cultural re-generation. The piece uses a combination of soundscape composition techniques, cultural materials and abstracted musical material to invoke both the new energy and vitality flowing through some parts of Belfast as well as the remaining uncertainty and tension springing from the cities division, the unsanitised reality of which doesn’t ‘fit the narrative’. Running through the piece is a bilingual poem by Conor ó Gallachóir, *Cé Tú Féin*, a rumination on his freedom to express himself in his own language due to the hard-fought compromises of previous generations and an attempt to deal with the problem of how he relates to a pre-defined identity and culture he was born into. It is a struggle that can be read as a parallel to this era of Belfast’s history; a peaceful and in some places newly cosmopolitan city has been earned through hard fought compromise, but it’s still a city very much conflicted and divided over it’s own identity.

**Andrew Harrison** is a composer based in Belfast, Northern Ireland. Since 2014 he has been studying for a PhD at the Sonic Arts Research Centre, Queen’s University Belfast. His research is concerned with the evocation of the imaginaries of cities through electroacoustic composition, and he is currently focused on developing a large-scale cycle of works exploring the contours of Belfast as it exists in our imaginations.   **Conor ó Gallachóir** is a folk singer, busker and poet from Gaoth Dobhair, Donegal. As a native Irish speaker he writes and performs in both his first tongue and English with equal fluency. He’s performed in the streets of cities across Ireland and the world including Dublin, Belfast, New York and Seattle. In this piece Conor kindly provided the vocal performance of the ‘Lass of Aughrim’ and the recitation of ‘Cé Tú Féin', one of his own poems.

# Cubic Zirconia

Cubic Zirconia is a work originally composed for the Cube at Virginia Tech. An algorithm developed with Miller Puckette in Pd synthesizes the sounds. The title arises from the venue (the Cube) and the prototype name of the algorithm (z12).

An alternative to Markov chains, z12 outputs chains of 12 numbers using percentages of previous outputs. Then using various logic operations, different sequences of the 12 numbers create a 1 or 0. These 1s and 0s are delivered at the sample rate to create complex timbres that subtly shift and evolve over time. These processes are dealt with in depth in Miller’s paper, “Maximally uniform sequences from stochastic processes.” (SEAMUS 2015)

A single z12 synthesizer is processed through delays and filters to isolate inner timbres and patterns and treated as four distinct voices. In this 8-channel version, selected outputs of eight z12s are spatialised in opposing pairs. One z12, laid bare and unprocessed, sits precisely in the front.

The piece grows in a fairly straightforward manner. The unprocessed voice acts as an anchor, continuing throughout the work. The other voices are filtered within such limited bandwidth that the inner rhythms of the z12s are isolated and distributed in different voices. These voices grow slowly in the beginning of the piece and die out symmetrically at the end.

A random walk related to 1/f noise first employed by John Bowers control the center frequencies of the filters, and the rate of change of the filters are controlled by random variables. Initially, the center frequencies are constant, and the rate of change is slow. However, as the piece develops the parameters are ramped to create greater variety and faster changes.

This work continues Kerry's work with textural composition, an approach to computer music aesthetics that relies on large sound masses developing intricate inner details over time with little to no gestural content. The sound object as a unit of sound is still relevant, but the object itself is a meta-object that the audience inhabits and experiences from within. Because the piece grows over time, the sound object is solidifying over time. Similarly, the spatialization is designed to immerse the audience in the object. No gestural content in spatialization exists. Rather, the spatialization creates maximum motility without relying on trajectory-based mimetic movement.

**Kerry Hagan** is a composer and researcher working in both acoustic and computer media. She develops real-time methods for spatialization and stochastic algorithms for musical practice. Her work endeavours to achieve aesthetic and philosophical aims while taking inspiration from mathematical and natural processes. In this way, each work combines art with science and technology from various domains.

Her works have been performed in San Diego, Belfast, Dublin, Paris, Berlin, Tokyo, Sydney and Perth. Recent works include a real-time stochastically generated work for computer alone, a bass solo, and a work for clarinet and computer. Current music projects include a piece for saxophone and computer, and computer music from large, complex data sets.

As a researcher, Kerry’s interests include real-time algorithmic methods for music composition and sound synthesis, spatialization techniques for 3D sounds and electronic/electroacoustic musicology. Her research has been presented at ICMC, SMC, EMS and other conferences in Montreal, Berlin, Belfast, Crete, New Jersey and Perth.

In 2010, Kerry led a group of practitioners to form the Irish Sound, Science and Technology Association, where she is currently President.

Currently, Kerry is a Lecturer at the University of Limerick in the Digital Media and Arts Research Centre (formerly CCMCM). She is the Principal Investigator for the Spatialization and Auditory Display Environment (SpADE).

# Ashes to Ashes

*Ashes to Ashes* was constructed from virtual uranium instruments.

Sounds were created through physical modeling technology developed by the NESS project at the University of Edinburgh. Vocal sounds were recorded. These recordings, too, were driven through massive virtual metal sheets which had been assigned the physical properties of uranium.

In the twentieth century, humans attempted to harness energy from the nuclear reaction. Uranium, a silvery metallic element which occurs naturally in the crust of the earth, allowed this to occur. The atomic bomb was latent in nature, and the fabric of the earth was threaded with the means of its own destruction. The title relates to a widely-known phrase, encapsulating an outlook on the relationship between destruction and creation which can be found across many spiritual traditions.

With thanks to Stefan Bilbao, Paul Graham, Alberto Torin, and the other members of the NESS group.

**Gordon Delap** comes from Donegal in Ireland. He is interested in electroacoustic composition, audiovisual composition, and composition created through engagement with physical modeling technologies. He has undertaken residencies at Nadine Arts Centre in Brussels, and at the Technische Universitaet in Berlin. He has received commissions from the British Council, Spacenet, the Naughton Gallery, and BBC Radio 3, and won first prize in the Projet Itinerant competition "Point de Repere". Gordon Delap is currently lecturer in music technology at the National University of Ireland, Maynooth.

Recent work has been concerned with combining electronic sounds with spoken word and video, and research interests include investigation of compositional applications of non-linear plate models developed at the University of Edinburgh.

# Dark Path #2

"Dark Path #2" is a piece of electroacoustic music, usable in stereo and acousmatic. The acousmatic music, whose characteristic is to not reveal the source of the sound-generating, unlike, for example, acoustic music, with the presence of the musicians on stage, favors a greater concentration on the sound itself, the users being immersed in this, without any "visual distraction." So, it's possible appreciate characteristics and peculiarities, mostly unheard, of the sound. The sounds used in the piece, processed, then "composed" together to create the musical work, were recorded in a soundscape dear to author, located in the Italian region of Marche. "Dark Path # 2" can be defined as a journey through light, shadow, shape, color, drifts and landings.

**Anna Terzaroli** studied Philosophy at the University of Rome Sapienza, deepening disciplines as Aesthetics of music, History of music and Ethnomusicology and she is graduated with honors in Electronic Music at the Conservatory of Santa Cecilia in Rome. Currently she is attending a Master's degree in Electronic Music at the same conservatory and simultaneously studied Compositional analysis and Compositional techniques with Maestro F. Telli. Professional Sound Engineer, as a composer she is dedicated to Electronic music and Contemporary music. Her works, compositional and scientific research, were selected, published and presented in concerts and festivals. Since 2009 she collaborates on EMUfest-Electroacoustic Music Festival of Santa Cecilia Conservatory.

# Earth and Steel

This soundscape composition takes the listener back to a time a century ago when large steel ships were built in enclosed slips, and rich metallic resonances rang out. These larger than life sounds reflected the sheer volume of the ships themselves that dwarfed those who were building them. However, just as the piece progresses and ends, these soundscapes now have become increasingly distant memories, only to be re-imagined in museums.

Original recordings from the World Soundscape Project Tape Collection, recorded in Caraquet, New Brunswick in 1973. Sound processing realized with Soundhack convolution and Chris Rolfe’s MacPod software for granular time stretching, with spatialization created by Harmonic Functions’ TiMax2 matrix mixer.

*Earth and Steel* was premiered at the 2013 Acoustic Ecology Symposium at the University of Kent, Chatham, UK on the grounds of the Royal Naval Dockyards where ships and submarines were built and repaired for many centuries.

**Barry Truax** is a Professor in the School of Communication (and formerly the School for the Contemporary Arts) at Simon Fraser University where he teaches courses in acoustic communication and electroacoustic music. He worked with the World Soundscape Project, editing its *Handbook for Acoustic Ecology*, and has published a book *Acoustic Communication* dealing with sound and technology. As a composer, Truax is best known for his work with the PODX computer music system which he has used for tape solo works, music theatre pieces and those with live performers or computer graphics. In 1991 his work, *Riverrun*, was awarded the Magisterium at the International Competition of Electroacoustic Music in Bourges, France. Truax’s multi-channel soundscape compositions are frequently featured in concerts and festivals around the world.