

All present and correct

Mingling with the scientific delegates at BNA2015: Festival of Neuroscience were a group of individuals with enigmatic 'Artists are Present' badges. They were there as part of an initiative arranged by ASCUS Art and Science, an organisation promoting and facilitating interactions between artists and scientists, which enabled 10 artists with an interest in neuroscience to attend the Festival. Here, a selection of the artist-delegates describe their experience.

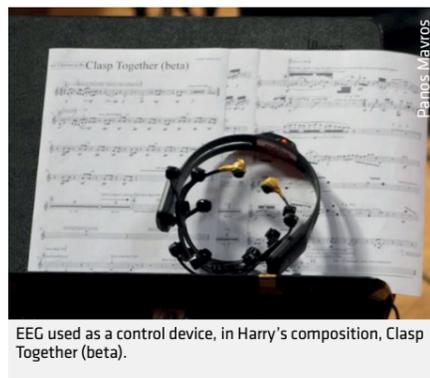
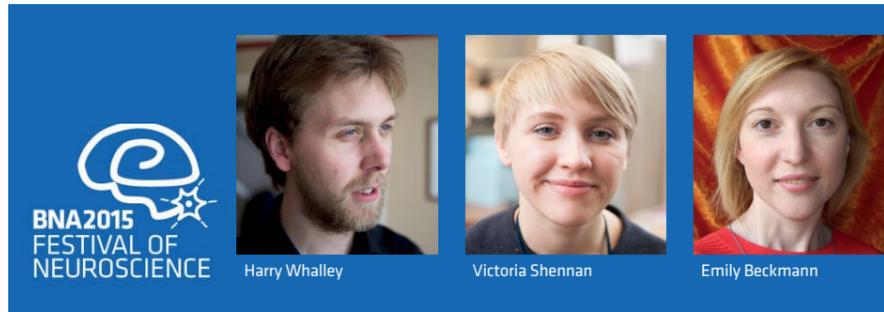
Harry Whalley: Music to my ears

"I've always had an interest in science, and try to keep up with scientific developments as an 'interested spectator'. Science has also been an important influence on my compositions, particularly big thinkers like Douglas Hofstadter - for my PhD, I developed music based on the core ideas of his book *Gödel Escher Bach*.

Science is also an important source of ideas and inspiration for me. New ideas can come from many directions - new discoveries, scientific results and experimental techniques can all generate concepts that can be re-interpreted in music composition.

Listening to the presentations and talking to scientists was incredibly stimulating. I was struck by how complex and difficult questions - like how memories are made - are often studied with remarkably simple apparatus, to minimise the number of potentially confounding variables. Neuroscientists are tackling profound questions, but each individual study only addresses a minute aspect of these big issues - science is a very pragmatic exercise. The accumulation of a myriad of different experiments may eventually help us solve some of the most profound mysteries of nature.

It's a sobering thought that we are only at the beginning of understanding



EEG used as a control device, in Harry's composition, Clasp Together (beta).

how the brain really works - it is almost unimaginably difficult. But it's testament to our ingenuity that we are able to make any progress at all.

From a practical point of view, I greatly enjoyed the 'Social life of voices' session, which provided much food for thought. Joachim Gross (Glasgow) talked about evidence for the coupling of speech rhythms and brain wave rhythms. Carolyn McGettigan and her team at Royal Holloway have been investigating how the plethora of non-verbal cues (and other contexts) and non-speech vocalisations interact with our understanding of speech. It was striking how many aspects of language comprehension, such as the importance of expectation, resonate with musical practice - playing with listeners' expectations is fundamental to the impact composers hope to achieve. It is a satisfying affirmation when scientists discover and confirm by rigorous experimentation what we have intuited as musicians.

The conference rekindled an interest in linguistics and the evolution of language, about which I am hoping to establish a cross-disciplinary project with researchers in Edinburgh."

Harry Whalley (www.harrywhalley.com) is a composer based in Edinburgh. He completed a PhD in composition in 2014 and teaches harmony, counterpoint and composition at the University of Edinburgh.

Victoria Shennan: Visualising the invisible

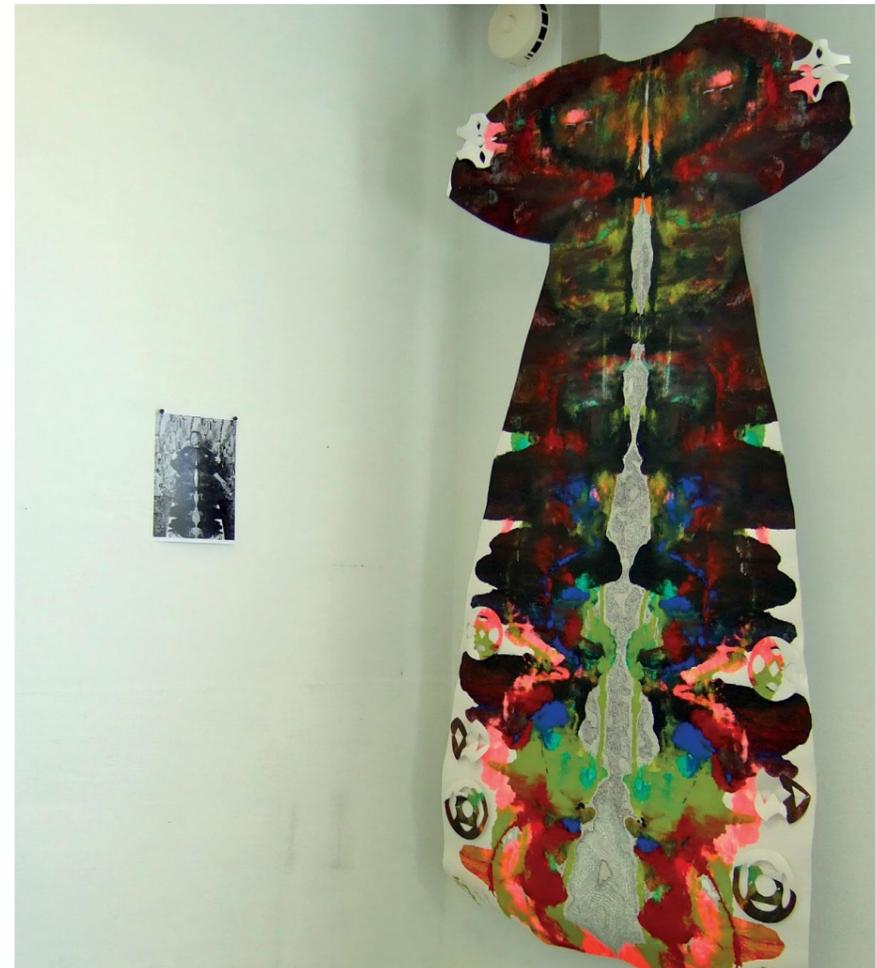
"I'm a visual artist, and I have a particular interest in things we can't see but that nevertheless have a big influence on us. My most recent work, as part of the 'Invisible You: The Human Microbiome' exhibition at the Eden Project in Cornwall, was an attempt to convey a sense of the importance of the microbial communities that live within us. I worked with composer Jack Hurst and scientist Linda Long, from the University of Exeter Medical School, to create a microbial soundscape of different habitats of the body. The team converted bacterial ribosomal DNA sequences into sound and used 3D crystallography to sonically map the vital proteins they encode, to illustrate the rhythms of nature that underpin our existence.

I'm currently very interested in circadian and circannual rhythms, and the profound effect they can have on us - another aspect of the 'unseen' world shaping who we are and what we do. Sessions that were of particular interest were, 'Sleep, brain state and sensory processing' and 'Long-term consequences of poor sleep on the brain.'

I made some useful connections at the festival. I had a very interesting conversation with Joanna Dennison from the University of Manchester's Pharmacy School, who is looking at the possible impact of the microbiome on autism,



A detail from one of Victoria's previous works.



Part of Emily's installation SUVlteatteri, 2014.

which connects with my work for the Eden Project. I also made contact with Shona Wood from the University of Manchester, who is working on circannual rhythms in sheep - a bit outside my usual focus on people but a fascinating area of study.

This was my first experience of a scientific meeting. It was really well organised, and for me the poster sessions were a great way of browsing to see what kind of things people are working on. The one-on-one conversations are the most useful, and these were easier to get going at poster sessions than during seminars. The detailed talks are tricky for us non-specialists to follow - but one important role that we artists can play is in pulling out key messages and themes from the nitty-gritty of research and helping the public to appreciate the big picture."

Victoria Shennan (<http://cargocollective.com/victoriashennan/About>) attended Gray's School of Art in Aberdeen and has just completed a master's at the Royal College of Art.

Emily Beckmann: Making contact

"I was delighted to be selected to take part in 'Artists are Present'. I attended lectures on circadian cycles, brain-computer interfaces, attention deficit hyperactivity disorder (ADHD), and a ceilidh workshop describing synaptic activity through formations in traditional dance - all of which may influence my creative work in the future.

I have embarked on a pilot project, drawing on research into ADHD, attention deficit disorder (ADD) and mind wandering, and I have established contact with one of the speakers. Meeting the other artists on the day was also very enjoyable has broadened my creative network. I was also pleased to discover that I already knew a couple of people present at the Festival (a musician and a geneticist), and I was glad of the opportunity to re-establish contact."

Emily Beckmann (<https://www.facebook.com/pages/Emily-Beckmann/13891199524702>) holds a BA (hons) in Fashion Design and an MA in Fine Art. She is currently based at Out of the Blue studios in Leith.



ASCUS Art & Science

ASCUS Art & Science is a non-profit organisation committed to bridging the gap between the arts and sciences through innovative cross-disciplinary collaboration, regularly partnering with individuals, organisations and institutions to develop new public engagement initiatives.

Founded in 2008, ASCUS aims to provide a joint platform for artists and scientists to work together on a diverse array of projects, including science communication, science and art collaborative practice, and interdisciplinary research. Its working network has expanded over recent years to include hundreds of artists and scientists from around the world. ASCUS's headquarters in Edinburgh serve as a hub to link like-minded organisations internationally.

Its work is founded on the idea that the arts and sciences are both innovative fields that can benefit from exposure to a diversity of ideas. It aims to foster unconventional thinking and build appreciation for, and participation in, the intersections between arts, science, and related fields.

As a leading advocate for art and science collaboration, it strives to connect artists and scientists and facilitate the exchange of ideas - creating opportunities for scientists and arts professionals to reach new and wider audiences. It partners with organisations, institutions and individuals to create new points of access for people to engage with cross-disciplinary practice through a programme of art and science micro-residencies, events, field trips and exhibitions.

See www.ascus.org.uk for more details and examples of its work. More details of the 'Artists are Present' initiative can be found at www.ascus.org.uk/artists-are-present-at-bna-festival-of-neuroscience-2015/.