

## Funded PhD opportunity

The Sounds of Science: a practice-based PhD exploring the use, purpose and potential of music in science centres

Project-type: Interdisciplinary practise-based PhD

Funding for: Scottish, UK and International Students, covering tuition and living expenses

Duration: 3.5 years full time (or 7 years part time)

Location: Glasgow, St Andrews, and Dundee, Scotland

Funded by: Scottish Graduate School for the Arts and Humanities Collaborative Doctoral Award

Applications due: June 1 or before, 2021

Starting date: October 1, 2021

Summary: In this fully funded, practice-based PhD, a student with a background music composition, sound design, and/or sound-based installation and an interest in science communication will explore how sound and music can be used to create effective learning environments at Dundee Science Centre (DSC). The student will be supervised by an interdisciplinary team consisting of Dr Rachel Drury (music psychology) and Dr Emily Doolittle (music composition and interdisciplinary science-arts research) at the Royal Conservatoire of Scotland, Dr Bede Williams (music and interdisciplinary collaboration) and Dr Mhairi Stewart (public engagement and science communication) at St Andrews University, and Rebecca Duncan (head of development) at Dundee Science Centre.

### Project description:

Science centres exist to educate and enthuse the public, in particular children, about science, through informal learning. They typically encourage visitors to interact freely with exhibits, including making all the noises associated with play and discovery. Though this kind of free interaction can facilitate learning, it can also create a noisy atmosphere which may disturb focus, and can ultimately discourage visitors. As Robert Fry asks, 'If interactive museums are concerned with experiential learning, why do the places we inhabit so often allow an atmosphere of acoustic chaos?'<sup>1</sup> In this fully-funded, practice-based PhD project,

a student with a background in music composition, sound design, and/or sound-based installation and an interest in science communication will design and create a series of compositions, sound installations and/or sound interventions for different parts of Dundee Science Centre (DSC), which seek to facilitate learning while also striving to mitigate the effects of unpredictable and noisy sounds coming from multiple directions. By working directly on the sound design with DSC, the student will aim both to make DSC a more inviting, aesthetically pleasing environment, and to enhance the potential for effective learning to take place.

In the first year of their PhD the student will complete a literature review, and conduct in-person reviews of existing scientific installations in the UK and mainland Europe which incorporate sound and/or music. The student will also spend considerable time in DSC, observing the physical layout, exhibits, and the way visitors and staff use the space. For the second and third year of the project, the student will determine the needs of DSC in discussion with key staff, and will design and implement three large-scale installations for different areas of DSC. Depending on the background and interests of the student, this could include (but is not limited to) creating recordings of instrumental music, writing songs with educational content, creating interactive installations, writing music which interacts with the flow of visitors, creating an acoustic background which integrates the diversity of unpredictable sounds heard throughout the day, and/or creating music for DSC's off-site outreach activities. They will take into account the principles of inclusive design, which recognise that making sure the (sonic) environment meets the varied individual needs of visitors will in fact enhance the experience for all.<sup>2</sup> In the final 6 months of the PhD the student's focus will shift towards evaluating the effect of their sound and/or music installations on the experiences of different demographics of visitors, and of staff. The student's final submission will be mixed mode, consisting of a portfolio of the three musical/installation works, and a written commentary addressing the conception, creation, and effectiveness of each of these works.

We welcome applicants from a wide variety of backgrounds. The successful applicant will have a strong background in music composition, sound design, and/or sound-based installation art, as well as an interest in science education, but formal qualifications could be from any of a wide array of fields, including music, fine arts, sound design, museum studies, communication, education, psychology, or any of the sciences. Candidates may be coming directly from a prior degree, or may have considerable professional experience as a musician, sound designer, or educator. Accessibility and inclusion are at the core of the DSC's mandate: as such we are particularly seeking applicants with a strong commitment to creating an inclusive sound environment, and to

communicating with the DSC and DSC attendees about the needs of the community.

<sup>1</sup> Fry, R (2002). Delightful Sound and Distracting Noise: The Acoustic Environment of an Interactive Museum. *J. Museum Ed.* 27:1, 14-17.

<sup>2</sup> Heylighen, A et al. (2008). The Sound of Inclusion: A Case Study on Acoustic Comfort for All. *Designing Inclusive Futures*. doi:10.1007/978-1-84800-211-1\_8

## Qualifications

### Essential:

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- Hold at least a 2:1 undergraduate degree in a relevant discipline (as required by the funder)
  - Have completed or on course to complete a Master's Degree in a relevant discipline/ and/or demonstrate equivalent, relevant professional experience
  - A strong background in music composition, sound design, and/or sound-based installation art.
  - An interest in science and engaging audiences with science
  - Comfort with and experience in collaborative working
  - Comfort with working in multiple and interdisciplinary contexts
  - Commitment to equality, diversity and inclusion
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### Desirable:

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- Experience with a diversity of audiences
  - Experience with assessing utilization of space and the needs of the people who inhabit it
  - Experience evaluating the outcomes of a soundscape with various stakeholders including visitors and staff
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## Application process:

Please email [e.doolittle@rcs.ac.uk](mailto:e.doolittle@rcs.ac.uk) for further info. Informal preliminary inquiries are encouraged.

Interviews of selected applicants will take place in early June, and the supervisory team will work with the selected student to submit a final form to SGSAH before June 11, 2021.

