

How Can Scientists Respond to the Climate Emergency? A guide from the SEA SIG

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Symposium

To keep the world at 1.5 C above pre-industrial levels we have a remaining carbon budget of 300 Gt of CO₂. Yet existing and pledged fossil fuel infrastructure and business-as-usual activities such as large academic meetings already commit us to 842 Gt CO₂ (<https://www.nature.com/articles/s41586-019-1364-3>). We either have to do something very dramatic to change our ways, or we have to anticipate a substantially warmer world, perhaps emerging as soon as the 2040s (<https://www.nature.com/articles/d41586-018-07586-5>). By that point, the standard operation of our academic fields might be disrupted out of recognition.

People are waking up to the growing international consensus that we need urgent action to tackle dangerous climate change and ecosystem degradation; including many of our members, who increasingly recognise that neuroimaging research activities play a part in these crises, from liquid helium extracted through fossil fuel production, to the energy usage of big data analysis. The annual meeting also has a substantial environmental impact, with the huge carbon footprint of flying, and conference centre practises such as single-use plastics.

A primary objective of the SEA SIG is to educate our community on the environmental impacts of neuroimaging research activities, and of the annual meeting, and crucially, to foster discussion on, and make recommendations for, how we could change these.

A symposium in the 2021 program represents the ideal time in the society's sustainability journey to highlight to the OHBM community the scope and scale of the environmental challenges facing us, and affirm the commitment amongst our SIG, Council, and members at large to tackle them. It is also a natural and timely opportunity to reflect on our online experiences of the 2021 virtual meeting, and our aspirations as a society for more sustainable and accessible conference models going forwards. In our first year as a new SIG, this symposium will lay the important groundwork for these conversations to continue and develop beyond 2021.

In addition to the specific learning objectives outlined below, we aim for each attendee of this symposium to take away an understanding of how they can contribute to addressing the climate crisis and ecological emergency, as an individual, as a member of the OHBM community, and as a professional scientist and educator.

Objective

- Better understand the climate crisis and ecological emergency, the lack of action by most governments, and how this confers responsibilities on us as professional scientists
- Understand the specific carbon contributions of neuroimaging research and academic activities and ways these could be mitigated
- Understand the roles we can play as professional scientists to push our institutions to go fossil free in energy use and finance
- Understand how we can, in our role as educators, build climate and sustainability issues into our teaching, so we can empower the next generation of scientists to take action

Target Audience

- Membership at large of OHBM (we all have a responsibility to acknowledge the issues and consider how we can act on them)
- Members interested in participating in the SIG and playing a more active role
- Early career researchers, who stand to be most affected by these issues, and who may be the most likely to be active drivers of change
- Senior researchers, who as power holders, role models, and educators have a responsibility to support pro-environmental changes

Presentations

The Environmental Impacts of Neuroimaging, From Liquid Helium to Big Data: What's our footprint?

- Assess the environmental impacts of neuroimaging research practises (liquid helium, scanner energy consumption, server manufacture, data centre footprints, data sharing) • Suggest practical steps to mitigate these
- Update on SIG's working group that is formally characterising these impacts in order to provide 'best practise' guidelines

Presenter

Charlotte Rae, University of Sussex, Brighton, United Kingdom

Decarbonizing Science: Action in academic communities and institutions

Assess the environmental impacts of academic communities and institutional practises (travel policies and conferences, infrastructure). Suggest practical steps to mitigate these. Update on SIG's working group that is formally characterising the impacts of the annual meeting in order to provide recommendations for the most sustainable conference models going forwards

Presenter

Anne Urai, Leiden University Leiden, Netherlands

The Responsibility of All Of Us in Our Institutions, To Push Our Institutions

Assess the environmental impacts of institutions' energy use and finance • Suggest how as professional scientists we collectively have a role to push our institutions to address these • Furthermore, understand our role as professional scientists in society.

Presenter

Adam Aron, University of California, San Diego San Diego, CA, United States

Teaching the Psychology of the Climate Crisis: Why now, and how?

Assess why it is important for us to build climate and sustainability issues into our teaching • Suggest how we can, in our role as educators, empower the next generation of scientists to take action • Furthermore, understand the role senior researchers have as power holders, role models, and educators to support pro-environmental changes.

Presenter

Clare Kelly, Trinity College Dublin Dublin, Ireland