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Summary

A Senior Lecturer in Science Communication, with a background in the atmospheric sciences and expertise in public engagement and outreach. My current research involves using poetry and games to engender meaningful dialogue between scientists and society, and over the past four years I have secured over £225,000 in funding from a range of external funding bodies. I have an MA in Higher Education and am a Senior Fellow of the UK's Higher Education Academy, with 40 publications. I am also the chief executive editor of [Geoscience Communication](#) and the co-director of the [Games Research Network](#).

Employment History

Senior Lecturer in Science Communication, Manchester Metropolitan University, UK

(May 2014 – Present)

As a Senior Lecturer in Science Communication, my responsibilities include researching scientific communication practice and helping to promote science as a fundamental part of our culture and society. I am also the Programme Leader for the MSc in Science Communication and the MSc in Environmental Science.

Postdoctoral Research Assistant, University of Manchester, UK

(October 2012 – May 2014)

My research was primarily concerned with using satellites, aircraft and drones to make measurements of greenhouse gases. Whilst at the University of Manchester, I also devised and delivered an interdisciplinary, undergraduate unit that taught students how to communicate effectively using theatrical technique.

Daiwa Scholar, Daiwa Anglo-Japanese Foundation

(September 2010 – April 2012)

I was selected as a 2010 Daiwa Scholar, and lived and worked in Tokyo, Japan. As part of the scholarship I devised a course at the Tokyo Institute of Technology, which was centred on the need for effective communication in scientific research, and how this can be achieved. Because of this work I was also invited to lecture at Tsinghua University in Beijing, China.

Education

MA in Academic Practice (Merit), Manchester Metropolitan University, UK

(September 2015 – July 2016)

My dissertation was a piece of action research which involved working with undergraduate and postgraduate students from across Manchester Metropolitan University to determine how collaborative writing groups could be used to counteract student disengagement.

Postgraduate Certificate in Academic Practice (Distinction), Manchester Metropolitan University, UK

(September 2014 – July 2015)

A nationally recognised qualification for teaching and academic practice in Higher Education.

PhD: 'The Suitability of the IASI instrument for Observing CO from Space', University of Leicester, UK

(October 2007 – September 2010; graduated 14th July 2011)

In my thesis, I investigated the capability of the Infrared Atmospheric Sounding Interferometer (IASI) satellite to measure atmospheric concentrations of carbon monoxide. In my second year, I was awarded the prize for the best communication skills of any postgraduate student in the University.

MPhys (four-year degree) in Physics with Space Science and Technology (First Class Honours degree – 87%), University of Leicester, UK

(September 2002 – July 2006)

In my second year, I was awarded the Phillips Prize, in recognition of achieving the highest mark in my year. Furthermore, in my final year I was awarded the Departmental Prize, in appreciation of having achieved the highest overall degree mark in my graduating class.

Key Skills

Communication:

As well as my research in this field, I have also run many different science communication activities, and over the last four years I have directly engaged with over 20,000 members of the general public, developing and delivering a variety of different initiatives ranging from science fairs and classroom visits to poetry performances and SciArt exhibitions. I write several very successful and popular blogs, which can be read on my website (www.samillingworth.com), and which have a combined yearly readership of over 50,000 people; [The Poetry of Science](#) was shortlisted for the best science blog in the UK 2018 by the Association of British Science Writers. In addition to this I am very active on Twitter ([@samillingworth](#)), where I tweet about science communication research and practice to my 4300+ followers. Furthermore, over the past four years I have run innovative science communication training workshops for over 2,000 scientists for, amongst others: the Royal Society, the British Science Association, the National Coordinating Centre for Public Engagement, and the Science and Technology Facilities Council.

Teaching:

I am the Programme Leader for both the MSc in Science Communication and the MSc in Environmental Science at Manchester Metropolitan University and teach across the entire Faculty of Science and Engineering. As well as teaching specific units on Environmental Pollution, SciArt, and Practical Science Communication, this also includes providing bespoke training to undergraduates, postgraduates, and members of staff on how to develop dialogues about their research with the wider society. I have a Postgraduate Certificate in Academic Practice, an MA in Higher Education, and am a Senior Fellow of the Higher Education Academy in the UK. Whilst at the University of Manchester, I devised and delivered an accredited course on effective communication skills and whilst in Japan I taught a course at the Tokyo Institute of Technology, which led to further lecturing at Tsinghua University in Beijing. I am currently supervising four PhD students, and have one PhD completion.

Teamwork and Leadership:

From 2013 to 2015 I was the representative for early career researchers at the European Geosciences Union (EGU), a role that involved the representation of over 7,000 postgraduate and early career scientists. I am now a member of the EGU Outreach and Programme committees, an elected member of the Institute of Physics' Communicators Group, the co-director and founding member of the [Games Research Network](#), and a founding member of Manchester Met's research-led think tank [Metropolis](#).

Writing:

I currently serve as associate editor for the [Research for all Journal](#) and am the chief executive editor of [Geoscience Communication](#). As well as writing scholarly papers, books, and scientific blogs (including writing for the Public Library of Science and Scientific American), I also have a monthly column for [Tabletop Gaming](#) magazine, where I discuss tabletop games in an academic context. Outside of research, I have run several successful writing workshops and have also written for the radio and stage. Several of my theatrical works have been performed in the UK, including by the Royal Shakespeare Company, and I have performed my poetry across the world at numerous spoken word events, including the Edinburgh Festival Fringe and the Green Man music festival.

Computer Skills:

These include a thorough knowledge of UNIX, LaTeX, SPSS, NVivo, Moodle, and the IDL programming language.

Current Research

With a background in using aircraft, drones and satellites to perform in situ and remote sensing measurements of greenhouse gases, my current research is now concerned with why we are making measurements like these, and how beneficial they are to the rest of society.

One aspect of science communication involves looking at the way in which the sciences are communicated between scientists and members of the public. I am particularly interested in moving beyond the deficit model of explanation, and instead incorporating upstream engagement and co-development strategies to develop genuine two-way dialogues between 'experts' and 'non-experts'. Such methodologies are not only beneficial to the members of society who are affected by the issues that are described by the research (e.g. biotechnology, engineering, sustainability, and climatology, etc.), but also to the scientists doing the research, as they can draw on the tacit, local knowledge of the communities to improve their own knowledge and understanding. For example, working with local residents on flood mitigation and adaptation strategies can better safeguard these communities against flood risks, as well as reveal localised information about flooding patterns and behaviours that can help researchers to improve their models and preventative recommendations.

My research also involves looking at how different media can be used to facilitate these conversations between experts and non-experts, and in particular I use poetry and games to help facilitate dialogue between experts and non-experts. For example, I have recently developed a series of workshops that uses poetry to help create a two-way dialogue with local community groups about climate change. This approach has yielded information that is not only of use to local policy makers and government, but also to the scientists who are researching effective climate change mitigation mechanisms, allowing them to incorporate this local knowledge, and thereby helping to ensure that any proposed activities are more likely to be of genuine benefit to the local communities.

Funding

Over the past four years I have secured over £225,000 in funding from a range of external funding bodies, which puts me in the 95th percentile in terms of social science funding in the UK (source: Higher Education Statistics Agency). Listed below is a breakdown of the funding that I have secured from external funding bodies, and my role in these projects.

Arts and Humanities Research Council, 2018, *The Imitation Game: Artificial Intelligence in Analogue and Digital Games*, 36 months, £56,000

I am a supervisor for the PhD that this funding is attached to, which will cover the tuition fees and student stipend for the duration of the project.

Society for Applied Microbiology, 2018, *Antibiotics on the Tabletop*, 6 months, £2,955.

I am the PI for this project, which involves developing resources to empower biology teachers to use tabletop games to engage their students with microbiology during World Antibiotic Resistance Week and beyond.

Royal Society of Chemistry, 2018, *Tabletop Chemistry*, 9 months, £1,840.

I am the PI for this project, which involves enabling librarians to use tabletop games to engage their communities with chemistry during International Games Week and beyond.

National Academy of Science, 2017, *Sackler Colloquium on SSCIII Early Career Researcher Awards*, £1,471.

This award was used to attend the *Science of Science Communication III* Sackler Colloquium in Washington DC, during November 2017.

Arts Council England, 2017, *Experimental Words*, 6 months, £14,800

I was the PI for this project, which paired scientists and poets together to create interdisciplinary explorations of the work and research of both sets of practitioners. Three performances took place, in Manchester, Canterbury, and London and as a result of this project I was also invited to host a similar event at the Chicago Botanic Garden in April 2018. This project was shortlisted for a national poetry award in 2018.

National Environmental Research Council, 2017, *Climate Consortium*, 12 months, £119,071.

I am a co-investigator for this project, which aims to coordinate and enhance the significant existing expertise and knowledge-base in the UK on public engagement with climate change. I am in charge of managing Work Package 2, which involves developing methods of co-production, plus identifying audiences and networks.

Greater Manchester Combined Authority, 2016, *The Effective Communication of Environmental Hazards*, 36 months, £4,500.

I am a supervisor for the PhD that this funding is attached to. This funding will be used to help further develop the student's research activities throughout the duration of their PhD project.

Edinburgh University, 2016, *En-GAUGE-ing the Public*, 18 months, £17,800.

I was the PI for this project, which involved using poetry and games to engender co-creation between experts and non-experts. This work took place in Manchester, Bristol, and Edinburgh and is part of the NERC-funded Greenhouse gAs UK and Global Emissions (GAUGE project). I managed the budget, developed the activities and carried out the evaluation.

The Royal Society, 2016, *History of Science Poetry*, 12 months, £2,740.

I was the PI for this project, which investigated which scientists throughout history wrote poetry, and how poetry can be used to expand scientists' understanding of the world. This work has been commissioned by Manchester University Press, with the monograph of the work due to be published in 2019.

National Environmental Research Council, 2015, *Driving Air Quality*, 3 months, £5,000.

I was the co-investigator for this project, which involved developing a series of events and activities to raise awareness of atmospheric pollutants with members of the public. In my role, I was responsible for liaising with Manchester Airport to deliver a campaign to their staff members and was also in charge of evaluating the project and helping to write the final report.

Selected Publications

Total number of publications (including books): 40; h-index: 12; citations: 529

Illingworth, S and Jack, K. (2018). Rhyme and reason-using poetry to talk to underserved audiences about environmental change. *Climate Risk Management*, 19, pp. 120-129.

Jack, K. & Illingworth, S. (2017). 'Saying it without saying it': using poetry as a way to talk about important issues in nursing practice. *Journal of Research in Nursing*, 22, pp. 518-519.

Illingworth, S. (2017). Delivering effective science communication: advice from a professional science communicator. *Seminars in Cell & Developmental Biology*, 70, pp. 10-16.

Illingworth, S., & Allen, G. (2016). *Effective Science Communication: A Practical Guide to Engaging as a Scientist*. IOP Publishing Ltd.

Muller, C. L., Chapman, L., Johnston, S., Kidd, C., Illingworth, S., Foody, G., and Leigh, R. (2015). Crowdsourcing for climate and atmospheric sciences: current status and future potential. *International Journal of Climatology*, 35(11), pp. 3185-3203.

A full list of my publications can be found via my [ORCID](#) profile.

References

Available on request.