

Samuel M. Illingworth PhD

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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 different media (such as a poetry and theatre) to empower society with scientific skills and learning. I am also a Senior Fellow of the UK's Higher Education Academy, with publications in geoscience, science communication, and pedagogy journals.

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 pedagogic technique and 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, which is delivered across three faculties, and includes units in Science Journalism, Medical Writing, and SciArt.

Postdoctoral Research Assistant, University of Manchester, UK

(October 2012 – May 2014)

My research was primarily concerned with the remote sensing of methane and other trace gases from the Airborne Research Interferometer Evaluation System (ARIES); an airborne Fourier Transform Spectrometer operated on the UK's atmospheric research aircraft. In addition to my work with the ARIES, I was also involved in the development of an Unmanned Aerial Vehicle (UAV) for making in situ measurements of ozone on the sub-urban scale.

Daiwa Scholar, Daiwa Anglo-Japanese Foundation

(September 2010 – April 2012)

I was selected as a 2010 Daiwa Scholar, and from September 2010 to April 2012 I lived and worked in Tokyo, Japan. As part of the scholarship I devised and lectured 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. As a result of this work I was invited to also 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 the University to determine how collaborative poetry 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)

In my thesis, I investigated the capability of the Infrared Atmospheric Sounding Interferometer (IASI) satellite to measure atmospheric concentrations of carbon monoxide. Work from my PhD has been published as five separate

papers in peer-reviewed journals. 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:

I have presented my work at seminars and conferences across the world, giving oral presentations to large and varied audiences. I have developed, and continue to develop, a large number of public engagement programmes for children, students, and adults of all ages, and over the past four years have engaged with over 10,000 members of the general public. I am also a keen Tweeter ([@samillingworth](#)), and have run numerous communication and confidence-building workshops both nationally and internationally. I have been an invited keynote speaker at many international universities, conferences and science festivals, where I have spoken about various aspects of my research, and about science communication in general. Furthermore, I present '[The Neutrinos Are Mutating](#)', a successful podcast that investigates the science fact in science fiction films.

Teaching:

I am the Programme Leader for the new [MSc in Science Communication](#) at Manchester Met, and also teach across the entire Faculty of Science and Engineering. This includes providing bespoke training to undergraduates, postgraduates, and members of staff on how to communicate in an effective and engaging manner. I have a Postgraduate Certificate in Academic Practice, and am a fellow of the Higher Education Academy in the UK. 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.

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 5,000 postgraduate and early career scientists. In this role I had to ensure that all early career researchers had a clear and discernible voice throughout the Union at all levels. I am now a member of the EGU Outreach and Programme committees, and am also an elected member of the Institute of Physics' Communicators Group. I am a recipient of the Chief Scouts and Duke of Edinburgh Gold Awards, and have been elected into several other positions of authority where I have acted as a benevolent, thoughtful and proactive leader. These posts include the Deputy Editor of Leicester University's newspaper, and the President of the Leicester University Theatre society.

Writing:

As well as writing [scholarly papers](#), [books](#), and [scientific blogs](#) (including writing for the [Public Library of Science](#) and [Scientific American](#)) I have a lot of experience in the writing of successful plays, newspaper articles, poetry, and also short stories. I have run several successful writing workshops, and have also written for the radio. A number of my theatrical works have been performed in the UK, including by the Royal Shakespeare Company (RSC), and I have performed my poetry across the UK at numerous spoken word festivals and events, including the Edinburgh Fringe Festival and the Manchester Science Festival.

Computer Skills:

These include a thorough knowledge of Excel and Microsoft office, as well as UNIX, LaTeX, SPSS, NVivo, and the IDL programming language.

References

Available on request

Most Important and Relevant Publications

- France, J. L., Illingworth, S., et al. (2016), Measurements of $\delta^{13}\text{C}$ in CH_4 and using particle dispersion modelling to characterize sources of Arctic methane within an air mass, *J. Geophys. Res. Atmos.*, 121, 14,257–14,270.
- Filho, W., Adamson, K., Dunk, R.M., Azeiterio, U.M., Illingworth, S., and Alves, F. (Eds.) (2016). *Implementing Climate Change Adaptation in Cities and Communities*, Springer Publishing.
- Illingworth, S., & Allen, G. (2016). *Effective Science Communication: A Practical Guide to Engaging as a Scientist*. IOP Publishing Ltd.
- Illingworth, S. (2016). Are scientific abstracts written in poetic verse an effective representation of the underlying research?. *F1000Research*, 5:91.
- Illingworth, S. M., McLean, M., & Patel, D. (2016). A Case Study of Interdisciplinary Live Projects in Art and Chemistry. *Brookes eJournal of Learning and Teaching*, 8(1).
- Randviir E. P., Illingworth S. M., Baker, M. J. et al. (2016) Twittering About Research: A Case Study of the World's First Twitter Poster Competition. *F1000Research*, 4:798.
- Redfern, J., Illingworth, S., & Verran, J. (2016). What does the UK public want from academic science communication? *F1000Research*, 5:1261.
- Blake, J., & Illingworth, S. (2015). Interactive and Interdisciplinary Student Work: A Facilitative Methodology to Encourage Lifelong Learning. *Widening Participation and Lifelong Learning*, 17(2), 108-118.
- Illingworth, S., Redfern, J., Millington, S., & Gray, S. (2015) What's in a Name? Exploring the Nomenclature of Science Communication in the UK. *F1000Research*, 4:409.
- Illingworth, S. M. & Roop, H. A. (2015). Developing key skills as a science communicator: Case studies of two scientist-led outreach programmes. *Geosciences (Switzerland)*, 5(1), 2-14.
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- Allen, G., Illingworth, S. M., O'Shea, S. J., Newman, S., Vance, A., Bauguitte, S. J. –B, et al (2014). Atmospheric composition and thermodynamic retrievals from the ARIES airborne TIR-FTS system - Part 2: Validation and results from aircraft campaigns. *Atmospheric Measurement Techniques*, 7 (12), 4401-4416
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- Illingworth, S., Allen, G., Percival, C., Hollingsworth, P., Gallagher, et al.. (2014). Measurement of boundary layer ozone concentrations on-board a Skywalker unmanned aerial vehicle. *Atmospheric Science Letters*, 15(4), 252-258.
- Illingworth, S. M., Muller, C. L., Graves, R., & Chapman, L. (2014). UK citizen rainfall network: A pilot study. *Weather*, 69(8), 203-207.
- Muller, C. L., Roberts, S., Wilson, R. C., Remedios, J. J., Illingworth, S., Graves, R., et al. (2013). The Blue Marble: A model for primary school STEM outreach. *Physics Education*, 48(2), 176-183.
- Hilton, F., Armante, R., August, T., Barnet, C., Bouchard, A., Camy-Peyret, C, Illingworth, S., et al. (2012). Hyperspectral earth observation from IASI. *Bulletin of the American Meteorological Society*, 93(3), 347-370.
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