

# Science Community Focus



## Soapbox Science – Bringing Female Scientists to the Streets

Emily Bell, Nathalie Pettorelli & Seirian Sumner

Soapbox Science is a grass-roots science outreach festival that aims to bring cutting-edge science to the public on urban streets. At the same time we promote the visibility of female scientists and equality in science careers. We do this not by talking about the problems facing women in science but by getting inspirational researchers, who just happen to be women, to take to the streets and share their passion for science with the unsuspecting public. Since its conception in 2011, Soapbox Science has hosted events in 8 different cities around the British Isles, reaching over 40,000 members of the public. We strive to challenge stereotypes on the perception of who a scientist is, provide role models for a new generation of equality and diversity in science careers, and revolutionise how scientists integrate their science with society.

### Underrepresentation of Women in Science

In both the United States and European Union men and women tend to be equally represented in many undergraduate and graduate science programmes. However, as you climb the academic ladder within Science, Technology, Engineering and Mathematics (STEM) subjects the proportion of women plummets, with less than 20% of STEM professors in UK academic institutions being women. But what are the reasons for the 'leaky pipe' that leads to gender inequality in the science market?



Soapbox Science – Bringing science to the streets

The formative years for an early career scientist are critical and progress during these years can make or break a career. One of the most cited reasons for women 'leaking' out of the science career ladder is that these crucial years often coincide with the preferred time for starting a family. This can make short-term postdoctoral positions abroad, long hours in the lab, and intensive networking at conferences unattractive to women in particular. But this is only part of the issue: stereotype threats, lack of female role models and implicit bias are also factors. The problem lies both with the public's opinion of what a scientist looks like and also unconscious bias within the academic system. For example, a 2015 L'Oréal for Women in Science/UNESCO public survey revealed that the majority of Europeans between the ages of 18-55 still describe a scientist as a man. Recent research shows how academics (both male and female) are guilty of unconscious or implicit gender bias: female applicants for academic positions are assessed as weaker candidates than their male counterparts, even though CVs and qualifications are identical.

Despite national initiatives, such as the Athena SWAN chart which aims to improve gender



Soapbox Science speakers at London's Southbank

equality in science within the academic arena, the heart of the battle lies in changing cultural perceptions of who a scientist is. The paucity of female role models at the top of the food chain in the scientific workforce, and the lack of diversity in the science media only further reinforces the stereotype that STEM subjects are for men. The low visibility of female scientists compared to male scientists is the reason why programmes such as Soapbox Science exist: to help promote and tackle this issue. As Professor Hilary Lappin Scott (Swansea University, Soapbox Science speaker 2013) said "[Soapbox] is one way to make a really big difference ... such events raise the profile for more women in STEM."

### What is Soapbox Science?

Founded by Dr Nathalie Pettorelli of the Institute of Zoology and Dr Seirian Sumner of the University of Bristol, Soapbox Science events allow members of the public to interact with scientists in an accessible and fun way whilst increasing the visibility of women in STEM. Our cutting-edge researchers stand on wooden soapboxes and take to the streets to engage and talk with passers-by about their work, sharing their knowledge and enthusiasm by starting a conversation and dialogue with the public. In its first few years a single annual event was run in London, but by 2014, we expanded into four locations and by 2015 we had seven separate events taking place throughout the summer at various locations across the country. To date, over 200 women, from graduate students to professors, have taken part in Soapbox Science and numbers will only continue to grow as Soapbox continues to expand nationally and internationally in 2016.





A captive audience



A passing school group getting interactive and inspired with Soapbox Science

## Soapbox Science's Impact on the Public

Opportunities for the public to learn about science have reached a peak in the last few years, including annual science festivals, science comedy shows and innovative interactive museums. However, what about those members of the public who would not necessarily be inclined to attend a science event or meet a scientist? Unlike most other science outreach initiatives, Soapbox Science events take place on busy urban streets, from the Southbank in London to busy shopping centres in Exeter and Newcastle. This means that the people who come across our scientists will not have necessarily planned to come and learn about science. In this way Soapbox Science achieves a wider participation of public engagement with science.

And this approach appears to work: over 19,000 people witnessed the Newcastle 2015 event; of those interviewed 42% had no idea the event was taking place but said they would come again to watch another event. Soapbox Science is therefore an effective and accessible way to challenge and change the public's perception of scientists and show that



Inspiring a new generation of scientists

science can be accessible to all. Because Soapbox Science targets the general public, from no particular demographic, it also serves to inspire both the next generation of scientists, irrespective of their background, and reach the social circles who influence their career decisions, e.g. their families and friends.

## Soapbox Science's Impact on Female Scientists

In the last few years many of the UK's most eminent female scientists have taken to their soapboxes, including physicist Dame Professor Athene Donald and chemist Professor Lesley Yellowlees (the first female president of the Royal Society of Chemistry). However, one of the primary aims of Soapbox Science is to help boost the profile and career progression of all the women taking part – particular those in junior roles who still lack permanent positions. Our speakers enjoy considerable media attention, which helps raise their public profile, but also their standing within their own institution and research field. For example, our speakers have written several blogs and articles about their work and the role of women in science for national broadsheet newspapers. They are also given the opportunity to attend bespoke Soapbox Science training workshops to improve their self-confidence in public speaking and promoting their scientific achievements.

Speaker feedback suggests that Soapbox Science offers real value to them personally, including "Networking opportunities within science and beyond" (Dr Nichola Raihani, University College London, Soapbox Science speaker 2012); "invitations to sit on committees such as Athena SWAN, participate on Women in Science discussion panels, and to speak at science communication events" (Dr Deborah Goberdhan, University of Oxford, Soapbox Speaker 2012). As recalled by our 2013 speaker Dr Zoe Schnepf, University of Birmingham, "Soapbox was highlighted by my head of Department in my promotional assessment as a high profile science communication event"; "My Soapbox video is used in our School's undergraduate prospectus". Importantly, Soapbox also helps women at the earliest stages of their careers: "As a PhD student it was a great opportunity and has greatly improved my confidence when speaking at conferences" (Anna Tilley, PhD student University of Bristol, Soapbox speaker 2015). The wide diversity of speakers from various academic institutions at all academic levels means that our speakers can also become inspirational role models to one another.



Making science accessible and enjoyable for all

## What's next for Soapbox Science?

In 2016 Soapbox Science enters its 6th year. This marks an increasing number of events happening across the UK this summer. With locations across the country from Exeter to Edinburgh, over 10 events will be taking place this summer, showcasing the fantastic work of female scientists, increasing their visibility, providing role models, and promoting a dialogue about cutting edge science with the public from all walks of life. We are very excited that 2016 will also bring the first international Soapbox Science, with an event planned in Brisbane, Australia.

If you are a female scientist, why not apply to be a speaker at one of our 2016 events this year? Alternatively, volunteer to help out at one of our events. Follow our call for applications for speakers and volunteers on Twitter and via our website, or Facebook.

To find out more about Soapbox Science visit: <http://soapboxscience.org/>.

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