

*'Dependant on the context of the media and how they distort the issues involved'* **'Debates about science must involve the people actually doing the science'** *'Scientists should be involved in such debates and in this way, general public may know the true picture of the topic or debate. Otherwise, scientific views and principles are dominated by commercialism, nationalism, political motives religious mythology, etc.'* **'If we are not willing to stand up and be open out our research and our techniques, how can we expect the public to fund us'** *'Scientists have the skills to analyse and debate science based arguments and are less likely to have a political agenda'*

**'We need to learn how to communicate the importance of our work, effectively to the general public'** *'The public never sees the*

# Standing up for science

A guide to the media for early career research scientists

**an impact'** **'young scientists represent the future of science. they need to be more media aware and prevent science from being misunderstood'** *'younger people in the general public are more likely to listen to younger scientists'* **'to provide young people in society with access to scientists who are similar to themselves, so they can see that it is not 'men in white coats' making decisions behind closed doors'** *'they have their own opinions and represent an important sub-section of society'* **'many young scientists bridge the gap between layperson and expert and so have the potential to contribute positively to these debates'** *'Particularly when it comes to encouraging young people to study science'* **'Only people prepared to sustain a debate should talk in debates'**

## Introduction

**Science is big news. There is a huge public appetite for finding out about the latest research developments and how the application of science might shape our world. However, discussions about science don't always go the way scientists expect them to. The recent debates about GM foods, the MMR vaccine, nuclear energy and avian 'flu there has been public confusion and it has been important for scientists to speak out both in the media and in public debates.**

But how can you, as an early career researcher, get involved in these discussions? Our network of early career scientists, VoYS, raised this issue following a workshop that explored how the media works. They now had the tools to get stuck in but wanted others to have them too. Using a collection of concerns raised by their peers they set off to interview scientists, journalists and press officers across the country to find out what they think you should know about the media. This guide is the end result.

It contains interviews, insights about how the media works and practical tips about what you can do if your research area hits the news. Whether you're worried about what your peers think or in fear of a journalists call this guide will help you decode the inner workings of the media and will help you stand up for science.

The material collected here is just a snapshot of what our VoYS writing team\* uncovered, the full interview transcripts, profiles of the interviewees and of the writing team can be found on our website. You can get involved and find out more about the VoYS network or comment at [www.senseaboutscience.org](http://www.senseaboutscience.org).

**Frances Downey**  
VoYS network coordinator

\* Our VoYS writing team includes: Sheena Elliot, Haley Gomez, Julie Huxley-Jones, Carolyn Jones, Richard Newell, Lorna Nichols, Kate Oliver, Nicola Powles-Glover, Harriet Teare, Alice Tuff, Sander van Kasteren, Richard van Noorden, Debbie Wake and Petra Wark.

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## Scientists' view of the media

**We asked scientists at different stages in their careers to tell us about their media experiences; the good, the bad and the ugly. Although experiences were mixed, they all agreed that it is important for all scientists to have an understanding of how the media works and for scientists to get involved in public discussion.**

### Dr Carly Stevens on her PhD research appearing in Science and the media frenzy that followed ...

We had press releases going out from the university, from Science, from the research council and suddenly my life had gone from sitting at my desk analysing data to dealing with the media. I gave a press conference in London and all the major newspapers and newsgroups came along. I was doing radio interviews over the phone, we got on the front page of The Guardian and every major newspaper ran the story the next day. Within a few days it had a knock-on effect and we had local press coming back to us for the local angle, and international press and international radio stations. It really spread.

### Did you have any bad experiences with the media?

I don't know if I was lucky, but we didn't have any bad stories. We were very careful to make sure we explained things thoroughly, in a way non-scientists could understand, and if a journalist wanted to talk to us we would talk to them. Looking back it was good, but I did find it all a bit worrying at the time.

**Biog:** Carly's paper 'Impact of nitrogen on the species richness of grasslands' came out in Science in March 2004 and led to media coverage world-wide. The research showed that current levels of nitrogen deposition are having a negative impact on biodiversity in the UK.



**“Not all scientists are cut out to be science communicators. Not all of them are able to empathise with the general public or people who are outside their field and explain things in a very simple way without using jargon. That is not to say they should not learn something about how the media works”** Professor Jim Al-Khalili



**Biog:** Emma is in the final year of a cosmology PhD at the University of Nottingham and has engaged in numerous

science communication projects, from giving talks in schools to proof reading popular science books.

### Emma King on talking to journalists for the first time

I recall a journalist calling me. I'd never had any previous contact with journalists and, to start with, I just talked to them like they were a friend or an interested member of the public. It wasn't until they started repeating things back to me in terms of what they wanted to print that I realised I should have started out on a different track! I had attempted to explain my project in fairly vague and general terms and ended up with them saying to me, "can we say you've discovered anti-gravity?", at which I was fairly horrified! I then

had to backtrack lots. It was rather scary that the things I'd been saying without giving too much thought to them could end up in print. At the time it really put me off speaking to journalists.

## Scientists' view of the media

### Dr Lisa Jardine-Wright on doing media fellowships

One advantage I had was working as a media fellow with the Financial Times. I saw the other side of things and that made me much more aware of what one needed to do in order to facilitate and help the media as much as possible. I think my usefulness to the media has increased hugely since I did the fellowship.



**Biog:** Lisa is a post-doctoral researcher and science communication officer for the Institute of Astronomy at the University of Cambridge and the astronomy researcher

for the Royal Observatory in Greenwich. She often gives talks on astronomy to the general public.

**Biog:** Debbie is a published medical doctor, scientific researcher and trained media presenter and has recently completed a PhD

looking at the role of steroid hormones in obesity and diabetes.

### Dr Debbie Wake on where talking to the media has led her

My first media contact came from my university and was as a specialist talking about obesity. More recently I have started up a regular pod cast, and I've also started writing my own column for the Scotsman. So it's kind of gone through different levels of things that I've done relating to the media.

### Have you ever had any particularly bad or particularly good experiences?

As time has gone on my confidence in speaking to the media has increased, and my experiences have become more positive. Probably the worst experiences were early on when I would get a phone call out of the blue, I used to be quite nervous and tended to speak before thinking.

**"...it's who you know as much as what you know, and consequently, if you become a media friendly scientist, then they will contact you again, even if it's a subject outside of your field"** Dr Lisa Jardine-Wright

### Professor Jim Al-Khalili on headlines not matching stories

I think the first time I was involved with the media was through a committee called PANS (Public Awareness of Nuclear Science), a group of academics trying to dispel the negative image of the 'N' word. A science correspondent decided he would write a piece about us, which he sent back to me and one or two others to look at and we liked it. It went from his hands to the sub editor of the newspaper who wrote the headline. When we saw it the headline was "scientists try to nuke their image". Basically the whole point of what we were trying to do was ruined by the headline associating us with nuclear bombs.



**Biog:** Jim is a theoretical physicist and holds a joint chair in physics and in the public engagement of science at the University of

Surrey. He has written several popular science books, given hundreds of public lectures around the world and is a regular contributor to television and radio science programmes.

## Scientists' view of the media

### Dr Milo Shaffer what it's like when journalists try to get you to speculate

It's usually quite entertaining. However, when speculating about a piece of research and where it could go, it is easy to say something which is actually ridiculous, so you want a chance to agree on the conclusions of the discussion. You can also ask for time to review the information before commenting by getting the journalist to email you the paper or press release their story is based on.

### What advice would you give to early career scientists if they are asked to speculate?

Don't if you're not comfortable. Don't say something which you might later regret.

**Biog:** Milo is a lecturer in Nanomaterials Chemistry at Imperial College, London. He is also a visiting lecturer on Cranfield's MSc in nanotechnology programme.



### Professor Jim Al-Khalili on talking to the media outside of your expertise

*"Most of scientists say "Well it's not my specialist area so I have nothing to say on the matter". At the level the media usually operate on, most scientists with a background in a general field, say physics, could say something about it even if they have to do a little background research."*



**Biog:** Robin is the head of developmental genetics at the MRC National Institute for Medical Research in London. His work towards the wider communication of science has included

numerous media interviews on genetics, sex determination, cloning and stem cells, and he has participated in debates at public meetings, on radio and TV.

### Dr Robin Lovell-Badge on standing up for science when debates are polarised

One thing to bear in mind is that you're never going to be able to persuade 100% of your audience. There are always going to be people who have a fundamental belief and you're not going to change that however hard you try. But you can try to win over the majority of people. Be honest, put things into context and point out the good things. Moreover it is my view that it is ethically bad not to do research when it could possibly lead to cures and a better quality of life for many people. Balance your arguments like that.

### Is it important to state your opinion on an ethical issue?

Yes, I think that's important, and not just to give in and say, "I don't care about ethics, it's not my subject." I think you have to be prepared to defend your science.

**"...the media aren't there to promote our work nor do us any favours; they're there to write a story. If they see a story and they will take it, so we have to be aware of that"** Professor Jim Al-Khalili

**"They asked me to comment on the algae in the Diana memorial fountain, I appreciate it's hard for non-experts to realise, but it has absolutely nothing to do with what I do"** Dr Carly Stevens

## Top tips from our scientists to early career scientists

Dr Debbie Wake: **Take your time to think about what you are being asked, don't feel rushed into giving an answer.**

Professor Jim Al-Khalili: **The main thing is not to be scared of the media. A lot of early career scientists hear the scare stories and think it's an 'us and them' situation when it isn't.**

Dr Lisa Jardine-Wright: **Be prepared to say "What's the focus of your article going to be? What's the slant?" and then be able to say "Well actually, I don't agree with that and I don't feel I can give you that sort of information".**

Dr Milo Shaffer: **Know what you want to say in advance. Don't go into an interview unprepared.**

Dr Robin Lovell-Badge: **If you're asked to comment either on your own or someone else's research, or give an interview, remember you're in charge – don't let the interviewer take control!**

## Enter the journalists: Time to answer their critics!

"How does it work with headlines and the story? Is there a conflict?"

"There is a strong tendency in the media to make it appear that there is a debate between two sides, so they will always want the negative as well as the positive, whereas in fact that doesn't actually reflect true distribution of opinion."

"Do you think it is a problem that a lot of science journalists do not have a science background?"

"I've stopped buying newspapers, they've all become tabloids, all sexing up science stories"

"What steps are taken to make sure the facts are correct?"

Next we put your questions and concerns about how the media represents science to the journalists to see what they had to say.



**Biog:** Mark is the science editor of The Times. He graduated in Modern History from Oxford University in 1996. As well as covering science for the news pages, he writes the Saturday Junk Medicine column.

### Mark Henderson on reporting science as a non-scientist

Science is such a broad field that being a specialist in one small bit of it doesn't necessarily better qualify you to write about the rest of it. As a non-specialist you're also not tempted to use jargon or to assume too much prior knowledge.

**"It's about scientific process and how that works. Once you have grasped that you've made a start"** Tom Feilden, BBC Radio 4's Today programme

## Enter the journalists: Time to answer their critics!



**Biog:** Fiona is a science reporter at the Daily Mail, having previously worked at the News & Star in Carlisle. She studied medical microbiology at Edinburgh University before training in journalism at Cardiff University.

### Fiona MacRae on finding and pitching science stories

Many stories come from journals such as Nature and Science. Stories also come from contacts, charities, freelance journalists, press releases and surveys. Other sources include ring-ins from readers, articles in other newspapers and magazines, and your own original ideas.

### How do you decide which stories to pitch for the paper?

I look for stories that would appeal to a wide range of people. These may be particularly topical or deal with something that affects their day-to-day lives. It is also important to consider whether the story is under embargo [while a story is under embargo it should not be published or discussed in the media].



**Biog:** Alok has worked as a science correspondent for The Guardian since 2003. He has a physics degree from Imperial College and previously worked for Research Fortnight.

### Alok Jha on if journalists double check their facts when writing science stories

As far as checking facts is concerned, you try to do it as you go along and make sure that your sources are accurate and valid. If I think something is wrong or if I think I have misheard something then of course I will check it, but as a matter of course, no.

### Do you check quotes with interviewees?

No, as a rule I do not check quotes, because people never come back to me on time.

**"It irritates reporters as much as it irritates people who are reported on, when a story is totally unreflected in the headline"** Mark Henderson, The Times



**Biog:** Anna works for the Times Higher Education Supplement as the higher education correspondent having previously been the science correspondent. She has a degree in English from Manchester University and trained in journalism at Westminster University.

### Anna Fazackerley on why headlines don't always match the article

Because journalists don't write the headlines - the sub-editors do. Headlines quite often over hype things, take one angle and don't sum up a story. But you have to remember that they're the hook that grabs the reader and without the headline people probably wouldn't bother reading about the research. Don't be too petty about it. You might not like the headline, but if someone stops

and thinks 'bloody hell, that looks interesting' and then reads what you've got to say, it's better than them turning over the page and ignoring you completely.

## What really goes on in a newsroom?

### We asked Alok Jha, *The Guardian*, to take us through a day in the life of a science correspondent...

The night before you know your diary stories: publications in the journals, press conferences, events, lectures, press releases that kind of thing. We send these to the news desk so they have a rough idea of what we will be working on the next day.



**9am-10am** We will have a meeting with the news desk and go through all of the day's news stories. Some stories are obvious, we'll know days in advance we are going to do a major Nature paper for example. Others we're not sure of, so we will discuss them first.



**10am-12pm** At this point we are working on a number of stories under the assumption that each one is going to be about 500 words long, so you can cut it down easily or add another 300 words. We ring scientists in the morning and arrange interviews.

*“For most of the day we really don't know how long our stories are going to be, how much space they are going to get, or if there is going to be a picture with the story, we are really shooting in the dark.”*



**12pm-2pm** At about 12pm the news desk has another meeting to decide what goes where in the paper. At that stage you know which stories you're definitely doing and how much space they have – you're in the home straight.



**2pm-5pm** We file stories around 4 – 5pm, so we have to interview to people by 2 - 3pm. If we can't speak to people until 4pm, we'll have the story written, speak to them, add the quotes and quickly file.

*“Scientists sometimes criticise us for using the same experts again and again. But the reason is because they work within our schedule. We usually have about 90 minutes to write each story and we have to publish the paper at 7pm, that's just how it is.”*



**5pm-8pm** Everything now gets edited which takes about 3 to 4 hours. The paper gets printed at about 7 - 8pm.



**The breaking story** When you have spoken to a scientist and taken up half an hour of their time, they'll sometimes see their story doesn't appear or they are not quoted. This is usually because something major has happened during the day and everything else has been pushed back. It is a dynamic newspaper and things get changed all day. If it is breaking news you can't not cover it, you have to either dump all the stuff you are doing and start again, or you have to finish everything really quickly and then start on the new story.

### And how do science correspondents get your details?

#### We asked Fiona MacRae, *Daily Mail*, to tell us...

If I am writing about an article from a journal, I will try to contact the researchers behind the study. I am often put in touch with scientists by the Science Media Centre and other contacts come from colleagues, charities, university press offices and museums. All of these things help me to build up my own database of scientists who are knowledgeable in particular areas, easy to contact and happy to help.

## Enter the journalists: Time to answer their critics!

### Anna Fazackerley on journalists 'sexing up' stories

I think it is splendid that journalists 'sex up' science stories and it is naïve of scientists to think they shouldn't. All stories should be sexy, an attractive sexy line doesn't make it untrue. That phrase has too bad a name.

**“But scientists sex up science stories too. It's very difficult to sex something up that isn't without help. Certainly if we overplay something it is usually because somebody has overplayed it to us”** Mark Henderson, *The Times*



**Biog:** Tom is BBC Radio 4 Today programme's science and environment correspondent. He covers advances in genetics, space, technology, the GM debate and global warming.

### Tom Feilden on journalists presenting issues as if there was an equal split in opinion when there isn't

There is a valid reason for having a debate and putting people who fundamentally disagree with each other about a particular point on the air and letting them hammer it out live for the

entertainment and education of the audience. However, a problem that then that kind of programming has is a tendency to appear to challenge what is actually true or false about a particular assumption. And climate change is an obvious example here. I think that the BBC along with a lot of other journalists, has to hold its hand up and say we've probably given too much air time to people who are just denying the science of climate change rather than having a balanced discussion about the facts.

### Tom Feilden on misrepresentation of scientists by the media

*“I can't imagine a situation in which I would deliberately edit a piece that makes it seem someone thought the opposite of what they actually think. There is my own personal integrity, or any journalist's integrity, why would I do that?”*

### Alok Jha on whether his news editors would be happy for journalists to quote a young scientist in a story

*“They wouldn't care! What does it matter? All sorts of scientists through the ages have had their best ideas at 26 and 27. I'm 29, I would much rather speak to a 29 year old than a 50 year old. I know there is this feeling that if you talk to older scientists they have more knowledge, but really it's about your level of expertise in a certain area.”*

## Enter the journalists: Time to answer their critics!

### Do you think it is important for early career scientists to talk to the media?

*“Only if they want to. Science is all about debate and the public do not see that at all, for them it is all about facts. The more people you have talking about science, the more realistic a picture you get of science.”*

Alok Jha, *The Guardian*

**“Completely. I am in desperate need of new early career scientists all the time. There are too many bearded men in their sixties wanting to talk about science.”**

Anna Fazackerley, *THES*

*“If you don’t put yourself forward to the media you can’t influence what they write. If you are leaving journalists, who don’t understand the work nearly as well as you, to write stories from press releases and impenetrable papers in journals, without making yourself available to explain it, then you pretty much lose the right to complain about being misrepresented.”*

Mark Henderson, *The Times*

## Top tips from journalists to early career scientists

*“But I’m not an expert”*

**Alok Jha, *The Guardian*:** You are more expert than me, and that’s all I want. If you have done a bit of research then you are the expert, and if you can take me clearly through what you’ve done, it is worth millions. If you still feel like you’re not the expert, know this: some of the most stimulating talks about bits of research are by people who think they are not experts.

*“What do you want from an interviewee?”*

**Anna Fazackerley, *THES*:** A good interviewee is sparky, uses colourful language, and explains things in a simple fashion. If you work in a complicated area of science it is really splendid if you can use analogies from the outside world. These are the sort of things that will always make it into a quote.

*“Is there anything I can do before being interviewed?”*

**Tom Feilden, *Radio 4’s Today programme*:** Do a bit of homework, sit down and think what do I want to say here? What are the things that are fun, or interesting, or original, or novel, or useful about whatever it is that I’ve done? Think of the masters. When Steve Jones answers a question, he won’t say ‘Yes’, ‘No’ or go into an elaborate description of the genetics of what he’s done, he’ll tell you a little story. Ask yourself how you would tell your grandparents what you’ve done at work today?

## Getting to know your press officers

### We have heard from the scientists and journalists, but what practical advice is there out there for early career researchers?

Universities and funding bodies have press officers that can help you publicise your research and deal with any media enquiries you may get. If you are speaking at a conference organised by your learned society they will have a press office there to publicise the event and the papers being presented so you can talk to them about your research.

## Top tips from press officers to early career scientists

### Go and meet your press officer and get to know them

*“Press officers want to hear about your findings before they come out so come and have a chat first.”*

Jenny Gimpel, media relations manager, University College London

### Try and get some media training

*“If a post graduate student came to me with a story about some research that they have done and want publicising I would suggest they do media training.”*

Aeron Haworth, media officer for Life Sciences, University of Manchester

### Practise talking without using jargon. Aim for clear and accurate

*“Remember you are not addressing your peers but the public.”*

Emma Darling, public relations officer, Cardiff University

### Find out what makes a good story

*“Unless it’s of interest to a wider audience the media won’t pick it up.”*

Nicola Buckley, press officer, University of Cambridge

### Don’t be snobby about the type of media you do

*“Many scientists are worried about speaking to tabloid newspapers. But *The Sun* has a daily readership of over 3 million, whereas the *Guardian* only has around 400,000.”*

Dr Claire Bithell, senior press officer, Science Media Centre

### Remember your manners!

*“A bit of humility and good grace goes a long way. Putting a smile on your face will stand you in good stead.”*

Ronald Kerr, press officer, University of Edinburgh

### Don’t be too sensitive about what is written about you

*“The first time you see yourself quoted you’ll think ‘did I really say that?’ but try not to worry.”*

Jenny Gimpel, media relations manager, University College London

### Be sympathetic to what journalists have to do

*“Most reporters are bloomin’ heroic. They are trying to grapple with stuff that is very complex in a very short space of time and they are doing the best they can. No-one sets out to write an inaccurate article.”*

Ronald Kerr, press officer, University of Edinburgh

### What do press officers do?

We have two roles: a pro-active role that involves going out and finding stories, these could be to do with papers being published for example, and a reactive role, which is when journalists ring up because they know we have experts in a particular field at our university who we can get them in touch with.

**Aeron Haworth, media officer for Life Sciences, University of Manchester**

## Where to go for further information...

**This is not a comprehensive guide to how to deal with the media but hopefully it has whetted your appetite to find out more. The VoYS programme is a way for early career scientists to get involved in public debates about the media.**

To find out more about VoYS please visit [www.senseaboutscience.org](http://www.senseaboutscience.org)

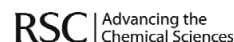
Here you can find the full transcripts for the interviews done for this guide, as well as biographies of the contributors and the writing team that helped develop it. We also have links

to our partners and also to other organisations that will provide help and advice to early career scientists.

On our website you can also find out how to become a member of our VoYS network, read about our past VoYS media workshops and find out when our upcoming media workshops are, as well as learn more about VoYS activities promoting good science and challenging bad.

**Contact Frances Downey on [fdowney@senseaboutscience.org](mailto:fdowney@senseaboutscience.org) or 020 7478 4380 for further information.**

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# Standing up for science Media Checklist

You've been contacted by a journalist, what next?

The following is a checklist of what you can do, step-by-step, if you are contacted by a journalist. It doesn't have to be followed exactly but is a good guide if you are unsure how to handle the situation.

- 1. Find out why the journalist is calling you
  - where are they from?
  - what are they reporting on?
  - why are they reporting this now – what is their 'peg'?
  - who else have they spoken to?
  - what do they want to ask you?
  - can they send you the press release/paper/report they are working from?
- 2. Get their contact details – a direct telephone number and email address
- 3. If you need time to gather your thoughts, find out when their deadline is and ask if you can call back in 15 minutes – Be aware journalists only have a certain amount of time to write the story
- 4. Contact your press officer and your supervisor
- 5. Prepare the three most important points you want to get across in your interview
- 6. Call the journalist back within the time frame promised
- 7. When talking to them make sure you say your three points (most important first) and only comment further if you feel comfortable doing so
- 8. Let the journalists know your availability for the rest of the day and give them your mobile phone number where possible



Developed with Dr Claire Bithell, senior press officer,  
Science Media Centre

To find out more about VoYS and to order more copies of this guide visit

[www.senseaboutscience.org](http://www.senseaboutscience.org)

# Standing up for science Contact us and find out more

If you would be interested in finding out more about Sense About Science or our VoYS network please complete the form and send to: Frances Downey, 60 Cambridge Street, London SW1V 4QQ

A copy of this form is available on the website ([www.senseaboutscience.org](http://www.senseaboutscience.org)) where you can also read about our past VoYS media workshops, find out when our upcoming workshops are, and learn about VoYS activities promoting access to evidence and challenging bad science.

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