

# SO YOU WANT TO BE A SCIENCE WRITER?

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Association of  
British  
Science  
Writers

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## **Acknowledgements**

Many thanks go to Peter Wrobel who edited this guide and put together the appendix on courses for science communicators. Thanks also go to Michael Kenward and Damian Carrington, and to all the other working journalists, and journalism students, who contributed their thoughts and opinions.

## ***A few words about this guide***

This guide is for people wanting a career within the UK science media. This is taken to include writing, journalism and broadcasting, and all areas of science (including technology, medicine and the environment). The booklet largely assumes the reader has a degree or is aiming to get one, as this is more or less the norm in the media these days. However, this need not be a science-based degree. Although most science writers and journalists do have science degrees, it is essential only in specialist publishing.

Updates, comments and questions can be sent to me at: [natashaloder@economist.com](mailto:natashaloder@economist.com).

NL, Spring 2002.

## 1. About the job

### 1.1 Where we are now

The past decade will be remembered for having given birth to the information revolution, offering thousands of new opportunities for journalists on the Internet, and in digital and cable broadcasting. This trend looks likely to continue as the media grows and fragments, although, average audience size will also continue to decline. However, opportunities are not keeping pace with the numbers of new journalism students.

Oversupply of journalism students has always been a problem in the media. To put this in context, the National Union of Journalists (NUJ) estimates that four times as many media students are accepted at learning institutions as can be expected to work in anything remotely connected to the media. The **BBC** alone receives 80,000 queries a year about jobs in broadcasting, and recruits only a few thousand people at all grades.

Thankfully, science, technology and health continue to fascinate the public, and so remains popular in the national and regional newspapers. In recent years, there has also been an explosion of interest in popular science books and science blockbuster TV programmes. The magazine market, though, has not fared quite as well. Three popular science magazines have folded in recent years. Although, **New Scientist** has grown strongly over the past decade. But with the constantly unfolding horizon of new scientific discoveries there is little reason to think that general public interest in science, technology and other related subjects, is likely to wane.

At the same time that science is playing a more important role in everyday life, scientific knowledge itself is expanding at a faster rate and becoming more specialised. People who can understand, translate and communicate this information are in demand. Anyone who can go beyond mere communication, to great stories based on difficult ideas, will never be out of a job.

### 1.2 Science writing versus science journalism

Some draw a distinction between science writing and science journalism. Universities and research funders, such as the Wellcome Trust often employ science writers, to popularise the science done by their organisation. As the job title suggests, this means writing about science. Although there are many science journalists that do little more than this most of the time, journalists are expected to be more sceptical and be able to approach a story, a scientist, or the scientific community with a critical eye. Michael Kenward, an ex-editor of **New Scientist**, explains: "Science writing is about explaining complex ideas that nobody wants to keep secret; science journalism is about explaining things that everyone can understand but that some might prefer to keep buried." Of course, the word 'writer' remains a pretty useful word for anyone who writes. The point, though, is that while all journalists are writers, the reverse is not true.

A more fuzzy distinction between science writing and science journalism is to do with the audience: science journalism can sometimes be little more than an attempt to entertain, while science writing is much more often an attempt to inform. But, to varying degrees, writers and journalists must always do both.

### 1.3 Specialist and generalists

Broadly, there are two main ways of becoming a science journalist (or writer). A popular route for science graduates these days, is to train as a specialist journalist from day one. But it is also possible for graduates of any flavour to start off as a general journalist, and specialise in science journalism later on. Which route you take will depend on a number of considerations.

Many very successful science journalists started out as specialists. They may have taken a science communication course, or trained on a technical publication, and then ended up as a specialist journalist on a national newspaper or within broadcasting. Many others, though, started out as general reporters, on a local newspaper (sometimes without a science degree), and then moved to a national newspaper or to broadcasting. At some stage along the way they would have taken on a specialist beat.

These are two very different routes. Although both produce excellent science writers, journalists and broadcasters, many within the media have a greater respect for those that went through the "hard knocks" school of journalism. This means spending time as a local reporter, covering everything from local crime stories and supermarket openings, to door-stepping the recently bereaved. There is even, sad to say, a slight suspicion of journalists who have a scientific background, and who report on science. The suspicion is that they may be biased in favour of the scientific community.

If you want flexibility in your media career, and the opportunity to work within the mainstream media, you would do well to consider getting a more general journalism education after a science degree — skewing your interests towards science stories as you progress. If you are more interested in the science than in the journalism, then specialist training may be preferable. But even if you do specialize early on, keep your options open for as long as possible and do not rule out other media work. Chris Riley, a producer on **Tomorrow's World** (see People), got his first break doing business reports for **BBC News**, where he spent much of his time thinking up interesting business angles on science

## 2. A general guide to getting in

The most important qualifications you will need are talent and confidence. These are more important than your knowledge of science, however vast, or your academic qualifications and experience in scientific research. Most science journalists working in the media today received some form of training. This may have been formal (through a postgraduate course), or as on-the-job training (as an intern, junior reporter or editorial assistant). It may have been informal, through student newspapers and work experience. These routes do not bind you, though. Ultimately, the way in is to convince an editor you have the talent and the skills. Most people do this through the routes described below. Some, though, find journalism school a complete waste of time.

Journalism of any kind is difficult to get into but rewarding — offering a diversity of experience, daily challenges, and the chance to meet a wide range of interesting people. It is not for the faint of heart, shy, withdrawn, or anyone who dreams of a large salary. Successful journalists are fascinated by people, current affairs and events, show determination in the pursuit of a story, and are able to produce well-written words under great pressure of deadlines, while working at all hours. Science journalism is no different in this respect. The range of subjects that journalists may have to cover is enormous, from global warming to hi-tech widgets, and from cancer to particle physics. This requires both speed and adaptability.

If you are currently a working scientist, please don't look at the science media as an easy way out of research. There are enough people who have both talent and the true desire to do it, to put such ambition at a severe disadvantage. You may be a senior postdoc, with children and a mortgage, and have written dozens of successful grant proposals, but your first job is still likely to be something along the lines of researcher, editorial assistant or junior reporter. Unless you can find a job where a PhD, and a postdoc, are valued experience (say on a scientific journal) your starting salary is unlikely to be much more than that of a graduate (£18,000-£22,000 a year), and could be less. Many scientists make the transition into the media, but this does not happen by accident or instantly. You will have to go through some kind of training, whether formal or informal.

### 2.1 Formal training

With the great variety of media courses, some generalist, some specialist, and some with tantalising words in their titles such as “online”, “new media”, “wildlife/environment” or “foreign”, you must take special care not to get suckered into an expensive course that will lead you absolutely nowhere in journalism. The only way to choose a course, of whatever kind, is to spend some time finding out what is taught, what work experience (if any) is offered and what kind of media experience the tutors have (you should expect that they have some). Be careful, though. Some courses advertise that big-name journalists teach their students, when in fact the big names only appear once as guest lecturers.

Another important indicator of quality is the jobs that graduates of these courses get, and how quickly they find them. Don't be fobbed off with vague statistics that promise that 95% of their graduates work in the media. Find out exactly what this means. Have they had any recent success in placing their graduates or do they just have one or two famous alumni? And will you graduate knowing how to find, research and write news, while avoiding libel and making use of qualified privilege? You should do. Forget digital cameras and web page design, you need to acquire basic reporting skills. Without them you are of no use to anyone in a newsroom.

You should also make sure to choose an accredited course. Unfortunately there is no single accreditation house, or accepted type of course, in journalism. The main accreditation organisations are the Broadcast Journalism Training Council, the National Council for the Training of Journalists and the Periodicals Training Council (details in Sources). The plethora of courses, diplomas, proficiency tests and degrees, are a recipe for confusion. However, in the Appendix is a partial list of accredited courses (including specialist science and technology related courses) that are recognised for the purposes of the bursary scheme the ABSW runs with the Wellcome Trust (a copy can be found within the Appendix of this guide). A more complete list can be found within the media training section of the Guardian Media Guide by Steve Peak (see Reading List).

### ***Journalism postgraduate courses***

Entry into journalism via a general (i.e. non-specialist) postgraduate journalism course has been a pretty standard option for many years. But the numbers of applicants on all postgraduate courses have been declining in recent years because of the huge growth in undergraduate student debt. The fees for some postgraduate courses can be around £5,000. Instead, students are trying to get the job done with an undergraduate degree in journalism or media studies.

The good news for science graduates is that the proliferation of undergraduate media degrees, where you learn about the history of cinema or write dissertations on politics and the mass media, are no more relevant to a job in journalism than a degree in microbiology or philosophy. And so a first degree in almost any subject, including science, followed by a journalism postgraduate course, remains an excellent choice and a route that has an edge over the mass of undergraduate media studies graduates.

The bad news is that a science-based, rather than arts-based, degree can be a disadvantage when applying to some of these general journalism training courses. Although a tutor on one of the leading UK courses says that anyone with a science degree will be “looked at carefully”, she explains that the rest of her colleagues felt she was unwise to take on a PhD in astrophysics because “she had a PhD mind for a start, not a journalist’s”.

Part of this is undoubtedly prejudice, but the technical education provided by science degrees, and PhDs, are felt by some course tutors to be a less useful prelude to a journalism degree. Their intensive schedule of learning gives little time for work in the student media, and this is exactly the kind of experience that the best journalism courses require as a matter of routine. It is also felt that science graduates have poorer communication skills than arts graduates, as a result of the linguistic contortions required to write scientific lab reports, essays and dissertations.

If you have a science-based degree and can get into any of the leading journalism courses, such as the diploma courses at City and Cardiff universities (both these courses take on science graduates), this would be an excellent way of entering the science media. And some of these schools offer media-sponsored scholarships. In addition, there are Wellcome Trust bursaries for science journalism training. Incidentally, science graduates applying for general journalism courses are normally eligible for support.

Graduates in a hurry could also consider a fast-track course run by the National Council for the Training of Journalists (NCTJ) course. These offer a thorough grounding in journalism skills — such as interview techniques, news and feature writing, shorthand, media law, ethics, sub-editing and design — in only 15-20 weeks. There may even be work experience, or the opportunity to land some. And, because they are short, they come in at around the £1,000 mark — although the NCTJ course in Sheffield College has dropped its fees entirely for its full-time students. This does not seem to be a common route of entry into the science media, but there seems no reason why it could not be used. In recent years, day-release, part-time, and summer schools offering NCTJ courses have also begun to spring up, advertised in the **The Guardian** and **Press Gazette**.

### ***Specialist journalism postgraduate courses***

There are no special skills involved in working in the science media. Telling a story about science requires the same skills as telling a story about transport or health. Obviously, a science degree can be helpful if you are working on a science story. But a science journalist with a physics degree will still have to write about stem cells — what is important is not the knowledge itself but being able to acquire it quickly and convey it. (If there were something special then editors would not be able to move their journalists from one specialist beat to another with such ease.)

Science communications courses do not exist because someone has to teach special “science” communications skills. They exist mainly because, every year, large numbers of students finish their science degrees and realise that they would like a job in the media but have little experience or understanding of it, and (consequently) cannot get onto mainstream journalism courses. Nevertheless, science communications courses are a tried and tested route of getting into the science media (see People). A list of these courses can be found in the Appendix at the back of this document.

An important benefit of science communication courses is that they offer students the opportunity to experience all areas of the media before deciding where their interests lie. Nicholas Russell, a senior lecturer on the Imperial College MSc in science communication, says many people start on the course and “particularly with TV, realise how difficult it is and what a nightmare a TV career is”. Imperial must be doing something right. Dr Russell estimates that 60-65% of its graduates end up in print, radio or TV and, in all, 80 to 90% will get jobs in professional communication (this includes museum work, PR people and website builders). This year Imperial will place 35 students on work experience in the science media, and four ex-students are currently working at New Scientist.

One of the criticisms leveled at the course, though, is that it is “quite academic” and, says one graduate of a few years ago, the tutors are “well into semiotics and the rhetoric of science”. This may be true, and graduates do seem to be more adept at criticising the flaws in the contemporary science media than they are in doing a better job of it. But the course is, after all, a degree so must have an academic component. If you

want a more practical course then you should be doing a diploma, like that at Birkbeck (which, actually, has quite a strong academic stream in any case). Don't be fooled by snobbery, or prejudice, into thinking that you must take another degree in order to become a journalist.

The Birkbeck course can be done either full- or part-time. Liz Fletcher (see People), from **Nature Biotechnology**, took the course while working as a postdoc. Liz was looking to change career but could not commit full-time. "I would never have gone to look for a writing job unless I was told how to. I would not have had the confidence to try. It is a big career change and a lot of scientists have trouble extracting themselves". Since then, she has worked mainly in science journalism, and a spell within financial journalism. Another writer who has benefited by keeping their interests wide.

### ***Correspondence Courses***

In many newspapers, it is possible to find advertisements for correspondence courses offering writing training. This is not the route by which journalists, writers and broadcasters are made. The late columnist John Diamond said they were "fine for those who need a few very expensive tips on how to sell the odd piece of hobbyist writing on your specialist subject to *The Bream Fisher's Monthly* or *Doll Collector's Gazette*, but next to useless if you want to make journalism your living or any substantial part of your living". His piece on the subject was published in **The Spectator** and is also available online (see Reading List).

## **2.2 Informal training and networking**

Informal training such as work experience, student journalism, freelancing and voluntary work is incredibly valuable — whether this is on the student newspaper, a website, the departmental newsletter or a local radio station. The Internet, in particular, has also opened up a huge array of opportunities for writers and journalists wanting to get experience. It is valuable because slogging away at, say, a student newspaper until the early hours of the morning requires a lot more genuine interest, initiative and dedication than just showing up for journalism lectures. Another way of showing your worth is by winning a news or essay writing competition. Some competitions offer the winners work experience or publication of their piece (e.g. **The Daily Telegraph**; see Sources).

### ***Work experience***

Getting work experience (even if this is unpaid) is possibly the single most important step towards getting into the media, and sometimes the most valuable part of formal training courses. It can also be very variable. When applying for work experience, bear in mind that the more prestigious the publication the less actual writing you may do. Formally arranged internship schemes are much better, and there are a number in the science media that expose interns to editorial work (including the schemes run by **The Economist** and **Nature**). Placements can be difficult to get without some prior experience or evidence of interest, which is where sample clippings come in handy. (For more about work experience and internships see Places, at the back of this guide.)

For working scientists, one of the best opportunities is an eight-week media fellowship run by the British Association for the Advancement of Science (see Sources). The scheme is actually intended to give scientists the chance to experience life as a journalist, so that they can then go back to the lab bench with a warm and cuddly feeling towards the media. For some scientists, though, it was an opportunity to jump ship.

### ***Student journalism***

It may be cheap, tacky and badly written but working on the student newspaper is a time-honoured route for entry into journalism. The editors of some of bigger and more professional student papers are sometimes recruited straight onto national newspapers. But it offers great opportunities at any level. You can work on a broad range of stories, on every aspect of production, make a lot of mistakes of little consequence, and find out precisely what level of journalism qualifies as naff without getting sacked. In addition, you'll walk away with a mound of clippings to impress prospective employers with.

### ***Freelance***

The increasing casualisation of the media has seen a huge growth in the numbers of freelance journalists of all ages. Sub-editing, writing, photography, and even late-night reporting shifts on the national newspapers are often open to freelancers with the right experience. This is especially true in broadcasting, where short-term contracts mean that you are, in effect, your own boss and often have to find a way of making ends meet between jobs. Freelance journalists work in newspaper offices, outside on assignment, as casual labour on day rates on anything from £100 to £150 a day, or more.

This means that there are plenty of opportunities to get your face known by doing freelance work. Learning how to pitch is an art in itself, but the heart of it is being intimate with the needs of the publication before

approaching a commissioning editor with a list of irresistible ideas. There is no shortcut to putting together a well-thought-out and researched proposal. You will not earn any respect by offering something lame, or published in their pages the week before. If you get a commission, and then file well-written, meticulous copy to length and deadline, you are well on your way to establishing a good working relationship. About the most difficult market to break into as a freelance is the news section of national newspapers. It pays little, and takes no prisoners. Even experienced freelancers have a tough job getting news into a national and keeping their name (or byline) on the piece. The feature and specialist sections are much softer initial targets. The subject of freelancing is too vast to tackle further here, but some basic guidance can be found in the publications recommended in the Reading List.

### ***A note on finding jobs and networking***

To those outside it, the media is frustratingly cliquy and impenetrable. Some complain that it is difficult to find out about opportunities and openings. Nevertheless, it should be remembered that there are a lot of media jobs — such as the science editor on a national newspaper — that a lot of people think they can do but only a few can. Science editors file one, or more, stories each day that compete for space in the paper alongside politics and home news. On a busy week, he or she may write many thousands of words, to tight deadlines, that have little chance of publication. A job such as this needs a journalist with at least five years' experience and a heap of contacts. If the paper cannot find someone internally, or poach someone from another national, it will look for leading (often specialist) reporters on the technical press or large regional papers.

This is not to say that this kind of procedure is perfect, or that this is the way vacancies ought to be filled. Many perfectly suitable journalists are overlooked because their faces are not known. And this is where journalists use networking and freelance work on publications of interest to get their faces and abilities known. Most journalists also keep up-to-date with the media reshuffles reported in the press, either in the media sections of national newspapers or specialist papers such as the **Press Gazette** or **Broadcast**. A short news item about a **BBC** reorganisation is often the trigger for the sending of many CVs.

Informal networks are also important because many opportunities arise from simply being at the right place at the right time. And many associations exist to help journalists keep them in touch with each other and up to date with what is going on. These include the *ABSW*, the *National Association of Science Writers* (for US writers), *The Guild of Medical Writers*, *The Medical Journalists' Association*, *The Freelance Media Group* and *The Fleet Street Forum* (see Sources). There are also related email discussion groups where it is possible to pick up sporadic messages about job openings, trips, advice and interesting discussion about the practical business of journalism.

## **3. Getting into specific parts of the media**

To summarise, there are three main ways into the printed media: pre-entry courses, such as diplomas and degrees; company training schemes run by large general media groups for entry onto their publications and outlets (see Sources); and direct entry onto a publication with on-the-job training.

### **3.1 Specialist magazines and periodicals**

Direct entry into the media is rarer than it used to be on national and regional newspapers but it is still reasonably easy to get on some of the specialist (and less commercial) scientific and technical publications. There are a vast range of specialist publications (see Places), catering for every interest and discipline from engineering, electronics and computing, to healthcare and laboratory science. Each area has its own publication, and sometimes several competing publications. Another advantage of this sector is that it does not generally show favouritism for the youngest applicants. Journals, and some publications that cross the border between magazine and journal, such as **Nature Medicine**, **Nature Biotechnology** and **Trends in Evolution and Ecology**, value postdoctoral experience in staff such as manuscript editors.

There is a hierarchy among these magazines. Often, the more specialist (and less prestigious) will take on, and train, graduates with no little or no journalistic or editorial experience for jobs such as editorial assistant, junior reporter, or sub-editor. Opportunities can be found either by looking at the job pages of **New Scientist** and **The Guardian**, or simply by writing to the publications that interest you. The more popular publications may ignore your letter entirely, especially if you have no other prior media experience. At the top of the specialist tree are the more consumer magazines such as **New Scientist** and **Computer Weekly**. These tend to recruit only experienced journalistic staff, although here as everywhere there have been exceptions to this rule. But some may keep your details on file, and one or two may invite you in for an interview.



### 3.2 Broadcasting: news, radio and TV

*By Pallab Ghosh*

There are loads of jobs now to be had in broadcasting but how to get that first foot on the ladder? While some programmes and organisations do take people on as researchers on the basis of their scientific training, many now look for some journalistic background and at least an awareness of TV or radio. And it is unlikely that you would walk straight out into a job in broadcasting. Key entry routes include starting off in the technical or scientific press, local newspapers or local radio. The next question to answer is what kind of science broadcasting you want to be involved with: TV or radio? News or features? And do you want to appear in front of the camera or microphone, or be a behind-the-scenes person? Here are some possibilities.

#### **News**

**BBC News** employs five specialist science and technology correspondents working with two producers for all news programmes on TV, radio, and online. These include: **The One, Six and Ten O'clock** news bulletins, **Breakfast News**, **News 24**, **World Service** TV and radio, **Radio 5 Live**, **Radio 4's Today** programme, **World At One**, **PM**, **World Tonight** and the radio news bulletins. **BBC2's Newsnight** has its own science editor working exclusively for that programme. **ITN** has a science editor, while both a science editor and correspondent work exclusively for **Channel 4**. In general, these are experienced science journalists, recruited from the national press or specialist magazines. **BBC News** also employs two specialist science producers who have extensive experience in broadcast news. In addition, each news programme may employ producers or reporters who have a particular interest in science or environmental stories, although usually they have to do general news stories as well.

To find out about jobs you can log on to the **BBC's** job network, or read **The Guardian**, or the **BBC's** internal magazine **Ariel**. Details of all of these are in the back of the booklet. You can get more information from News Personnel (020 8743 8000). The **BBC** also sponsors a small number of journalism students, who at the end of their course spend three months working on various news programmes (details from Anne.McDonald@bbc.co.uk, 020 8576 1863). You can also phone the main number and ask to be put through to your favourite programme and simply ask if there are any jobs coming up. **ITN** discourages on spec calls, and advertises jobs in **Broadcast** and **The Guardian**. **ITN** runs a bursary scheme for potential trainees. More information about how to apply is expected on the **ITN** website in early 2002.

#### **Radio**

There are regular science programmes on **Radio 4** and **Radio 5** and the **World Service** and increasingly one-off commissions. These are generally more thoughtful, and longer than news, and obviously not tied to current events. These programmes would suit people who enjoy their science, rather than the cut and thrust of rapid news stories. The **BBC Science Unit** produces most of its programmes in house. Its 30 researchers and producers have the opportunity to work on a variety of programmes, and are able to broadcast if they want to. The unit's head, Deborah Cohen, says she looks for some experience of journalism and an interest and enthusiasm for science. A degree, she says, is not absolutely necessary. More information can be obtained from Deborah by writing to her (Room B630, BBC Bush House, The Strand WC2 B4PH).

**BBC Scotland** also has a small science production team based in Edinburgh, which also pitches for **Radio 4**, **Radio 5** and the **World Service** (contact the Talent Pool, 0141 339 8844). There are very few independent science radio programme makers, the market is too much of a niche. But two successful companies are **Somethin Else** (Jez Nelson, 020 7613 3211) and **Pier Productions** (Peter Hare, 01273 691 401).

#### **Television**

The **BBC's TV Science Unit** has recently been reorganised and is now part of a larger division called Specialist Factual that includes a much wider range of programming. This division produces regular programmes such as **Tomorrow's World** and **Horizon**, and one-off series such as *Walking with Dinosaurs* and *Planets* as well as the natural history programmes that are produced largely out of Bristol. The reorganisation has blurred a few demarcation lines but the **BBC** employs several hundred producers and researchers working on science and natural history programming. They have the opportunity to work on all the various science programmes, and also, if they wish, to move into areas such as religion or history. There is no chance, though, of broadcasting on the main prestige programmes unless you happen to be a star scientist, such as Robert Winston or Susan Greenfield. Most programmes use experienced presenters or hire in actors to narrate, but there are the odd presenting opportunities on other science programmes made for the corporation's growing number of cable channels.

Behind the camera, the first step is to get a job as a researcher. While some TV experience is desirable, being able to come up with good ideas for science programmes and to see them through are more important. Producers are valued more for their film-making skills, and the only way of acquiring these skills is to work

in the unit or for an independent production company at a junior level (for more information contact Dana.Purvis@bbc.co.uk). **BBC Scotland** also produces science programs for the major TV strands (contact the Talent Pool, 0141 339 8844).

Unlike radio, there is a thriving independent television sector. There's less security and you're worked much harder but for newcomers it may be easier to get a foot in the door and gain skills and responsibility quickly. The leading companies include **RDF** (020 7313 6700), **Wall to Wall** (020 7485 7424), **Pioneer** (020 8748 0888). A new cable channel and web site solely dedicated to science has recently started up called **einstein tv**. It is aimed at a younger audience and its editor, Toby Murcott, says that although the company is not recruiting at the moment he expects there to be opportunities in the future (contact toby\_murcott@einstein.tv).

*Pallab Ghosh is a science correspondent working for the BBC*

### 3.3 Online journalism

*By Wendy Grossman*

In most respects, online journalism is no different from any other kind: the aim is to write good, clear, entertaining, informative pieces that are accurate and timely. The most important skills are not HTML coding, or knowing how to run a digital video camera (though these things are, of course, a great help) but those of traditional reporting. Three things are different, though: time, the nature of the medium itself and the composition of your audience.

Where a newspaper piece might not appear for a day and a magazine piece might not appear for a couple of months, an online piece may be posted a couple of hours after having been turned in, and updated as events dictate. So you are under even more pressure to avoid errors of fact and language. The time pressure is especially harsh in news, where you are competing with the wire services to break stories.

It is almost always a good idea to include links at appropriate points in your copy. These can serve many functions, from footnoting additional research, pictures, or explanatory material (e.g. **The Daily Telegraph**, **Wired News**) to commenting satirically on what you're saying (**Suck.com**). The web's ability to support all types of media gives you many ways of telling a story, linking in audio, video, and graphics. This is less true if the publication you're writing for is an electronic newsletter, but even here you can include web links.

The web audience is also global. English sites attract audiences from everywhere. Web readers are also smart, engaged, and aggressive about seeking out information. A recent study by **Quill**, the magazine of the US Society for Professional Journalists, showed that online readers tend to read widely and opportunistically on the sites they visit regularly, instead of (as expected) picking only topics that already interested them. As budgets (and column inches) for foreign reporting decline, the web is where people look to fill the information gap. What draws web readers to stories according to that study? Headlines and tightly written summaries, not graphics. No matter what kind of journalism you do, good writing is always the foundation.

With regards to freelancing opportunities, spend time reading on the web (**Salon.com**, **NewScientist.com**, the **BBC's Science News Online**, and **Nature's Nature Science Update**), before you try to write for it. As yet, the best paying opportunities tend to be for journalists (in part because the slow dial-up connections most people are still using to access the net seriously limit the size of the audience for web-based video and audio). This is changing, albeit slowly, and the early 2000s should see huge growth in these areas. For freelancers, the web is a huge bazaar of opportunities of all kinds. The dot-com crash took out only a small percentage of the number of sites buying content from freelancers. Almost every corporate or e-commerce site needs content, whether its reviewing books for Amazon.co.uk or writing think pieces for Nokia's **TheFeature.com**. Every time you visit any website, you should be looking for writing opportunities.

Plus, you have marketing tools at your disposal that last generation's journalists could only dream of: create your own web site with links and information about your work. You can undertake almost any project you like at minimal financial cost and get yourself known on your own hook if you do a good job on it (**CyberWire Dispatch**, cyberwerks.com/cyberwire, Need to Know (Now), www.ntk.net)

*Wendy M. Grossman is a freelance writer specialising in science and technology, www.pelicancrossing.net*

## 4. Reading list

### Starting out

- **Inside journalism**, Sarah Niblock, Chapman and Hall, London, 1996. *Clear, beginner's guide on how journalism works. It covers newspapers, magazines (including business and professional), radio, TV, agencies, freelancing, PR and getting in. Slightly out of date but good all round guide.*
- **How to be a freelance journalist: your step-by-step guide to success**, Christine Hall, **How to Books**, 1995. *Answers basic questions about how to approach editors, whether or not they will steal your ideas, and how to get paid.*
- **Understanding journalism: a guide to issues**, John Wilson, **Routledge**, 1996. *Documents areas of media debate and dispute: government bias, censorship, freedom of information and obscurity.*
- **Why not to enrol in correspondence courses**, by John Diamond, <http://www.absw.org.uk/careers.htm> & [http://www.absw.org.uk/correspondence\\_courses.htm](http://www.absw.org.uk/correspondence_courses.htm)).

### The working journalist's bookshelf

- **The Guardian Media Guide: Steve Peak**, **Guardian Books**. *Updated yearly, this is an all-purpose UK media guide with an especially detailed section on media training. It is also an invaluable guide to contacts within the press, TV, cable, radio and satellite, media ownership, industry structure, literary agents, publishers. Also has good essential contacts guide (thin on science) in UK life: departments of state, MPs, quangos, local government, prisons, European Union, international embassies, the military, police, trade union, consumer information, transport, communications, education, religion, charities, think tanks and sport.*
- **The Writers' and Artists' Guide**, **A&C Black, London**. *Now in its 94th year of issue, a directory for writers, artists, playwrights and writers and how to get material published in newspapers, magazines, film and TV. Also includes lists of newspapers, articles on writing for radio, selling a stage play, taping interviews, societies and prizes, and other resources for writers.*
- **Writer's Handbook**, **Barry Turner (Editor), Pan**. *Published yearly. Very similar to previous guide but more focused on writers' contacts. UK publishers, newspapers, magazines, film, TV, video companies, literary societies, agents, professional associations, prizes, bursaries and awards. The book is dispersed with essays with advice on the business of writing such as, payment, searching for an agent and aiming for the bestseller.*
- **McNae's Essential Law for Journalists**, **Tom Welsh, Walter Greenwood**. *Updated yearly. Definitive, frightening, final word text book on all aspects of media law.*
- **Lifting the Lid: A Guide to Investigative Research**, **David Northmore, Cassell Academic, 1996**. *Guide to the sources of information used by journalists to uncover stories.*
- **Secrets of the Press: Journalists on Journalism**, **Stephen Glover (Editor), Penguin Press, 1999**. *Key figures in British journalism write about how the press really works. Includes essays on "How to claim a camel on expenses" and the location of journalists' watering holes.*
- **The New Journalism**, **Tom Wolfe (Editor), Picador 1990**. *Classic 70s book in which Wolfe explained the concept of "new journalism". The second half of this book is an anthology of magazine reportage by writers such as Truman Capote, Norman Mailer and Hunter S. Thompson.*
- **Writing Feature Articles**, **Brendan Hennessy, Focal Press, 1996**
- **The Universal Journalist**, **David Randall, Pluto Press, 2000**. *Highly rated guide to all aspects of journalism, including in the new edition sections on handling numbers, computer assisted reporting and online writing.*
- **Associated Press Guide to Newswriting**, **Rene J Cappon, Study Aids/On-the-Job Reference, 2000**. *Excellent US-biased, guide to newswriting. Covers style, leads, tone, attributive verbs, quotes, colour, cliches and word usage.*
- **Practical Newspaper Reporting**, **Geoffrey Harris, David Spark, Focal Press, 1997**
- **Scoop**, **Evelyn Waugh, Penguin Books, 2000**. *Waugh's satirical 1938 novel of a cub reporter's first assignment to the African republic of Ishmaelia. Fabulous, and ultimate Fleet Street satire.*
- **Stick It Up Your Punter!**, **Peter Chippindale, Chris Horrie**. *Hilarious must-read account of the boom days of The Sun newspaper.*
- **English for Journalists**, **Wynford Hicks, Routledge, 1998**.

### Science journalism

- **The best American science writing 2000**. **James Gleick and Jesse Cohen (editors), HarperCollins, New York**. *Also 2001 edition edited by Timothy Ferris and Jesse Cohen.*
- **Getting published: Science book writer Susan Aldridge offers some advice on how to break into the book business**. **ABSW website: [http://www.absw.org.uk/getting\\_published.htm](http://www.absw.org.uk/getting_published.htm)**

## 5. Sources

### **Association of British Science Writers**

The ABSW exists to help those who write about science and technology. Members include print and broadcast journalists, authors and producers. Regular newsletter, trips, discussion list, handbook, debates, email addresses and social events. Student membership is available to those on a recognised science journalism course. The ABSW also administers a bursary scheme for science graduates seeking journalism training.

**Contact:** ABSW, c/o BAAS, 23 Saville Row, London, W1X 2NB, 020 7439 1205, [absw@absw.org.uk](mailto:absw@absw.org.uk), [www.absw.org.uk](http://www.absw.org.uk).

### **Ariel**

The BBC's in-house weekly newspaper, listing all available BBC jobs, is available to non-BBC staff. UK subs are £26/6months, £50/year.

**Contact:** Ariel subscriptions, PO Box 324, Griffin House, Griffin Lane, Aylesbury, Buckinghamshire HP19 3BP, or call 01296 489550 and ask for the Ariel Office.

### **BA Media Fellowship**

These media fellowships are intended to create greater awareness and understanding of the workings of the media among engineers and scientists. Past placements include **BBC Radio Science Unit, New Scientist, Nature, Countryfile and The Guardian**. All fellows attend the BA Festival of Science as media representatives.

**Contact:** Nicholas Hillier, The British Association, 23 Saville Row, London W1S 2EZ, 020 7973 3064. [nick.hillier@britassoc.org.uk](mailto:nick.hillier@britassoc.org.uk), April deadline, <http://www.britassoc.org.uk/mediafellow>

### **Broadcasting, Entertainment, Cinematograph and Theatre Union**

The independent trade union for broadcasting, film, theatre, and other sectors, with more than 25,000 members. Offers services such as negotiating pay, conditions, safety and contracts, personal advice and representation of individual members with employers. Publishes **Stage Screen and Radio** magazine ten times a year.

**Contact:** BECTU Head Office, 111 Wardour Street, London W1F 0AY, 020 7437 8506, fax: 020 7437 8268, [info@bectu.org.uk](mailto:info@bectu.org.uk), <http://www.bectu.org.uk>

### **Broadcast Journalism Training Council**

Advises and co-operates with colleges offering broadcast journalism courses to maintain industry standards of training. Grants recognition to courses reaching the required standards. For further information about BJTC accredited training courses see their web site.

**Contact:** The BJTC, 39 Westbourne Gardens, London W2 5NR, 0207 727 9522, [Sec@bjtc.org.uk](mailto:Sec@bjtc.org.uk), [www.bjtc.org.uk](http://www.bjtc.org.uk).

### **Bursaries & Awards**

The Writer's Handbook, by Barry Turner (see Reading List), has an excellent section on prizes, bursaries and awards for writers in general. But for awards to fund studies in journalism, City University Department of Journalism has an excellent synopsis at: <http://www.city.ac.uk/journalism/info/bursaries.html>.

### **Group training\***

Several of the largest UK media organisations, mainly representing local newspapers, offer in-house, group training.

**BBC training schemes.** For information about production trainees, news sponsorship schemes, broadcast journalism trainee scheme, new media trainee scheme, trainee broadcast engineers and technicians see the web page:

[www.bbc.co.uk/jobs/maj\\_sch.shtml](http://www.bbc.co.uk/jobs/maj_sch.shtml). **Johnston Press**, Upper Mounts, Northampton NN1 3HR, 01604 231528, fax 01604 250186. **Midland News Association**, Rock House, Old Hill, Tettenhall Wolverhampton, West Midlands WV6 8QB, 01902 742126, fax, 01902 759478. **Regional Independent Media**, Wellington Street, Leeds, West Yorks, LS1 1RF, 0113 243 2701, [vicky.blades@rim.co.uk](mailto:vicky.blades@rim.co.uk). **Trinity Media**, Trinity Editorial Training Centre, Thomson House, Groat Market, Newcastle-upon-Tyne, NE1 1ED. 0191 201 6043, [editorial@trinity-training.co.uk](mailto:editorial@trinity-training.co.uk), [www.trinity-training.co.uk](http://www.trinity-training.co.uk). \*source: Guardian Media Guide 2000

### **Institute of Physics (IOP) and Institute of Physics Publishing (IOPP)**

The IOP, in London, is an international learned society and professional body for the advancement and dissemination of physics, and the promotion of physics education. IOPP, is its wholly owned publishing company in Bristol, offering 30 journals, hundreds of books and a number of magazines

**Contact:** IOPP, Dirac House, Temple Back, Bristol BS1 6BE, 0117 929 7481, [custserv@ioppublishing.co.uk](mailto:custserv@ioppublishing.co.uk). IOP, 76 Portland Place, London W1B 1NT, 020 7470 4800, [physics@iop.org](mailto:physics@iop.org).

### **Jobs: finding them**

The widest variety of media jobs can be found in **The Guardian** (Monday and Saturday). Its Monday media section is also a good read. The Independent also has a media section with job advertisements every Monday. **New Scientist** sometimes carries science media jobs ([www.newscientistjobs.com](http://www.newscientistjobs.com)). The **Press Gazette** focuses on regional (with the occasional national) newspaper jobs. There are also some general media jobs in its sister magazine **Media Moves** ([www.mediamoves.co.uk](http://www.mediamoves.co.uk)).

Broadcasting jobs are to be found in **Ariel** and **Broadcast** magazine (the weekly newspaper of the TV and radio industry, call 020 7505 8014 for subscriptions or write to 33-39 Bowling Green Lane, London, EC1R ODA). There is also the BBC's own jobs web site ([www.bbc.co.uk/jobs](http://www.bbc.co.uk/jobs)). Remember to check the web sites of the publishing groups that interest you, for example both [www.newsquest.co.uk](http://www.newsquest.co.uk) and [www.johnstonpress.co.uk](http://www.johnstonpress.co.uk) have media jobs pages, as does <http://www.futurenet.com>.

There are also several media recruitment agencies, such as Recruit Media ([www.recruitmedia.co.uk](http://www.recruitmedia.co.uk)). For science-based jobs, members of the ABSW can pick up the odd opportunity via its email discussion group.

Note though: not all media jobs are advertised., and opportunistic letters of introduction may be required.

### **Medical Journalists' Association**

Aims to improve understanding between health and medical journalists and the health and medical professions. Organises awards, social events and publishes a directory of members and a newsletter.

**Contact:** 101 Cambridge Gardens, London W10 6JE, 020 8960. National Council for the Training of Journalists

Founded nearly 50 years ago to administer training for the UK newspaper industry, today it is a registered charity, with its own wholly-owned trading company—NCTJ Training Limited—through which it offers basic journalism training. Publishes details of NCTJ accredited colleges and universities, and courses on its web site (see [www.nctj.com/courses\\_fulltime.htm](http://www.nctj.com/courses_fulltime.htm)). Also see its web page for a listing of the bursaries available for attending NCTJ courses.

**Contact:** NCTJ, Latton Bush Centre, Southern Way, Harlow, Essex CM18 7BL, 01279 430 009 [www.nctj.com](http://www.nctj.com), [nctjtraining@aol.com](mailto:nctjtraining@aol.com)

### **National Association of Science Writers Inc**

Founded in 1934, this US writers' association offers the chance to "rub shoulders" with like-minded writers, editors, and broadcasters. Online discussion group, annual professional

meeting, quarterly newsletter, personal email addresses and home pages, access to membership list, membership/press card, mentoring program.

**Contact:** NASW, P.O. Box 294, Greenlawn, NY 11740, USA, +631 757 5664, fax +631 757 0069. Diane McGurgan, executive director, [diane@nasw.org](mailto:diane@nasw.org), [www.nasw.org](http://www.nasw.org).

### ***National Union of Journalists***

The leading journalism trade union representing all sectors of the media. The NUJ is the world's largest journalists' union with over 30,000 members. Offers monthly members magazine, reduced cost training courses, and access to essential guides on subjects such as pay scales in the media and protecting your copyright. A list of colleges and universities offering accredited course is in preparation. The NUJ also conducts campaigns on behalf of journalists to protect copyright and freedom of the press.

**Contact:** NUJ, Headland House, 308 Grays Inn Road, London WC1X 8DP, 020 7278 7916, [acorn.house@nuj.org.uk](mailto:acorn.house@nuj.org.uk)

### ***The Newspaper Society***

Looks after the interests of the regional press. It is a recognised industry training organisation, and the lead body for the development of National Vocational Qualifications (NVQs) in the newspaper industry. It is also a constituent member of the National Council for the Training of Journalists (NCTJ). Publishes a guide to training to be a journalist, [www.newspapersoc.org.uk/news-reports/info-sources/journalist.html](http://www.newspapersoc.org.uk/news-reports/info-sources/journalist.html)

**Contact:** The Newspaper Society, Bloomsbury House, 74 - 77 Great Russell Street, London WC1B 3DA, 020 7636 7014, [www.newspapersoc.org.uk](http://www.newspapersoc.org.uk).

### ***Periodicals Training Council***

The PTC sees itself as a focus for the magazine industry and provides information on good practice in training, including useful booklets on the accredited training courses in periodical journalism, a careers guide, and a guide to the skills needed in the magazine industry.

**Contact:** PTC, 55/56 Lincoln's Inn Fields, London WC2A 3LJ, 020 7404 4168, [training@ppa.co.uk](mailto:training@ppa.co.uk), <http://www.ppa.co.uk>

### ***Press Gazette***

Weekly industry newspaper, with jobs section.

**Contact:** Press Gazette subscription department, Tower House, Lathkill Street, Leics, LE16 9EF, 01858 438872, £70/year [www.pressgazette.co.uk](http://www.pressgazette.co.uk)

### ***The Wellcome Trust***

The world's largest medical research charity, with an asset base in 1999/2000 of £15 billion, and a mission to foster and promote research with the aim of improving human and animal health. It also undertakes a number of activities in the science media, from publishing a list of UK science communications courses to science writing prizes and bursaries.

**Contact:** The Wellcome Trust, 183 Euston Road, London NW1 2BE, 020 7611 8888, [contact@wellcome.ac.uk](mailto:contact@wellcome.ac.uk), <http://www.wellcome.ac.uk>

### ***Wellcome Trust/ABSW Bursary***

These competitive bursaries (worth £10,000) are intended to help cover the cost of training to be a science journalist.

**Contact:** ABSW Administrator, Association of British Science Writers, 23 Saville Row, London W1X 2NB, 020 7 439 1205, [absw@absw.org.uk](mailto:absw@absw.org.uk), <http://www.absw.org.uk/bursaries.htm>

### ***Writing competitions***

Some writing competitions are open to scientists wanting to try their hand at science writing. Besides those listed below, **Press**

**Gazette** publishes a yearly list as a pullout supplement, and awards are also flagged every month in **The Journalist**, the magazine for NUJ members. You can also find on the web a guide to US awards, called the Newswise Guide to Journalism Awards ([www.newswise.com/awards.htm](http://www.newswise.com/awards.htm)); there may be one or two that are relevant to UK journalists. Details below give approximate deadline dates based on previous years at the time of writing. Do not rely on them.

**American Geophysical Union Excellence in Science Journalism.** Professional journalists, or freelance, any nationality, deadline usually January, though see [www.agu.org/sci\\_soc/sci\\_awards.html](http://www.agu.org/sci_soc/sci_awards.html), or contact, Harvey Leifert, [hleifert@agu.org](mailto:hleifert@agu.org), +1 202 777 7507.

**Chemistry & Industry International Science Writing Essay Award.** Society of Chemical Industry, 14-15 Belgrave Square, London SW1X 8PS. Contact Simon Robinson, 020 7598 1521. For full-time students, deadline usually autumn, £1000 first prize and publication in Chemistry and Industry.

**Daily Telegraph Young Science Writers' Competition.** Electric Echo, 334A Goswell Road, London EC1V 7LQ, 020 7713 5525, or see [www.science-writer.co.uk](http://www.science-writer.co.uk) for more details. Two age groups, deadline usually March.

**David Thomas Prize.** Annual study/travel grant to enable the recipient to take a career break to explore a theme in the fields of industrial policy, third world development, or the environment. Given theme changes each year, announced in early autumn. Winners also write a 1500 word piece that is considered for publication in the FT, plus £3000 travel grant prize. Contact: Managing editor, Robin Pauley, FT, 1 Southwark Bridge, London, SE1 9HL, 0207 873 3000. Deadline Dec/early Jan.

**GlaxoSmithKline/ABSW Science Writers' Awards.** Mainly professional journalists, £2500 prizes in range of categories. ABSW, c/o British Association, 23 Saville Row, London W1X 2NB [www.absw.org.uk/gskawards.htm](http://www.absw.org.uk/gskawards.htm). Deadline usually January.

**Medical Journalism Awards.** Nick Fincher, Norwich Union, 023 8037 3428, deadline around August/September. Cash prizes for the most informative work by a young entrant.

**Wellcome Trust/New Scientist Millennium Science Essay Competition.** For PhD science students to write an entertaining essay about own work, first prize £1,500. No age limit or nationality restriction, deadline usually June. Contact, Ruth Birse, Wellcome Trust, 210 Euston Road, London NW1 2BE, [www.wellcome.ac.uk/en/1/miscmp.html](http://www.wellcome.ac.uk/en/1/miscmp.html), [r.birse@wellcome.ac.uk](mailto:r.birse@wellcome.ac.uk)

**Wellcome Trust Book Prize.** Professional life scientists, permanently resident in UK or the Republic of Ireland, £25,000 to enable winner to take a break from their normal routine to write a popular science book about some aspect of the life sciences. Deadline usually March. Prize awarded every two years. Contact, Ruth Birse, Wellcome Trust, 210 Euston Road, London NW1 2BE, [www.wellcome.ac.uk/en/1/miscmp.html](http://www.wellcome.ac.uk/en/1/miscmp.html), [r.birse@wellcome.ac.uk](mailto:r.birse@wellcome.ac.uk)

## 6. People and Places

### 6.1 People

#### **David Adam, news and features writer, *Nature*, 29**

David took a first degree in chemical engineering at Leeds University, an MSc in biotechnology at UMIST and PhD in biotechnology at Leeds. During his PhD, he worked on **Leeds Student**, first writing the science page and then progressing to an opinion column. His first job in journalism was as editor of the newsletter **Sealing Technology**, for Elsevier Science in Oxford (£16,400). After ten months, he joined Leeds University press office as a publicity officer (£19,500). After 18 months, he joined **Nature** (published by Macmillan magazines) as a science writer for their online and syndication news service, and after about a year, he moved on to write news and features for the printed magazine. On making the move from PR to journalism he wryly remarks that it took him a month or so to stop using the word “revolutionary” in every story. D.adam@nature.com

#### **Nadya Anscombe, editor, *Opto & Laser Europe*, 28**

Nadya did a chemistry degree with German at Surrey University, and specialised in polymers. After this, she became technology editor of the monthly trade magazine **European Plastics News** with a starting salary of £14,500. During her two and a half years in this job, she received a considerable amount of training and her salary increased quickly. In 1998, she joined the weekly trade newspaper **Electronics Times**, again, as a technology editor (starting salary £19,000). Two years later she became the editor of the monthly magazine **Opto and Laser Europe** and the website **Optics.org**, both published by the Institute of Physics in Bristol. Her advice to anyone who wants to be a science writer is to “find something you enjoy writing about and learn about the techniques of journalism from that. Then, once you are equipped with the general tools of the trade, you can write about anything and everything, and you do not have to be an expert in a subject in order to write about it... you just need to know what questions to ask.” Nadya.anscombe@iop.org

#### **Sunny Bains, scientist and freelance journalist, 33**

Sunny took a degree in physics at Imperial College and Queen Mary and Westfield (1990). During this time she edited the **Alternative Prospectus** and worked at the student newspaper, Felix. She also launched, and ran for three years, a magazine called **Holographics International**, while completing her degree. After graduating, she sold the magazine, and went to work full-time for the new publishers. She also started six technology newsletters. In 1992, she joined **Laser Focus World** as a technical editor (\$35,000) in Boston, and six months later she began a masters degree in journalism at Boston University, which, she says was “a big waste of money as I was already a journalist”. Sunny has been a freelance ever since. In 1997, she started a PhD in physical computation and artificial intelligence at the Open University. She is now writing up and will continue her freelance writing while teaching and doing research in the Imperial College Department of Electrical and Electronic Engineering. Sunny says that her specialization in a relatively small number of fields, which she maintains by working for trade magazines like **Electronic Engineering Times** and **Laser Focus World**, is what makes her valuable to serious publications like **The Economist**. Sunny@sunnybains.com

#### **Caroline Davis, reporter, *Times Higher Education Supplement*, 29**

Caroline took a degree in maths and philosophy at Oxford, graduating in 1993. She then went to work in IT as a programmer and technical writer for the next four and a half years. In 1998, she took the Imperial College MSc in science communication. Until then, her only media experience was writing one film review for **Oxford Student** and, she adds, “we went to see the wrong film”. Her work experience from the course included a spell working on the **BBC Science** web pages. In 1999, she got her first media job as a web reporter on Computer Weekly. In September 2000, she landed her current job on the **Times Higher Education Supplement**, where her specialist areas include science and technology. She says she would definitely recommend the science communications course. Caroline.davis@thes.co.uk

#### **Liz Fletcher, senior editor, *Nature Biotechnology*, 36**

Liz took a first degree in pharmacology at Bristol University graduating in 1986. She then took a PhD in neuropharmacology at the Royal Veterinary College. In 1989, she went on to do four years of postdoctoral research in universities in Australia and Canada, as well as a spell with a biopharmaceutical company, Allelix, in Toronto. She then came back to the UK and worked in the Laboratory of Molecular Biology at Cambridge. In 1997, she took a part-time diploma in science communication at Birkbeck College. Her first job in the media was as a science writer and editor on **Wellcome News** (published by the Wellcome Trust), which she did for a year-and-a-half, part-time (£20,000 pro rata). She then went to work for a medical education company called Transart, writing sales training and marketing materials until 1999. After this she joined **Pharmaceutical Business News** as a business journalist, and later became its editor. She worked there for a year before landing her current job on **Nature Biotechnology**, which is based in New York. Of leaving academia and becoming a science journalist she says, “I’ve no regrets, none at all.” Liz\_fletcher@hotmail.com

#### **Pallab Ghosh, science correspondent, *BBC News*, 38**

Pallab took a degree in physics at Imperial College, graduating in 1983. The following year was spent as the full-time editor of **Felix**, the IC student newspaper. His first job in the media was as the new products reporter on **Electrical**

**Review** in 1985 (£6,000). Within nine months he had become their features editor (£12,000). After about two years he left to become the technology correspondent for **Electronics Weekly**, moving on to become the science news editor at **New Scientist** a year later. In 1989, he joined the **BBC** training scheme, after finishing he became a producer on the **World at One**. He remained there for three years, becoming a senior producer on the Today programme for another year. Pallab then moved to **BBC East** to become their science correspondent. In 1996 he became the science correspondent for **BBC News**. Pallab.ghosh@bbc.co.uk

**Bill Goodwin, chief reporter, Computer Weekly, 35**

Bill took a degree in mechanical engineering at Imperial College. While at Imperial, Bill became editor of the student newspaper **Felix** in 1989. On leaving Imperial, his first job was as a reporter on **The Engineer** (~£18,000), where he remained for four years before becoming a freelance journalist working on a mixture of print and TV outlets on documentaries for **ITV**, **Channel 4** and the **BBC Money Programme**. In 1998, after four to five years as a freelance, he joined **Computer Weekly**. Bill.Goodwin@rbi.co.uk

**Roger Highfield, science editor, The Daily Telegraph, 43.**

Roger studied chemistry at Oxford University and did a DPhil at Oxford's Physical Chemistry Laboratory and at the Institut Laue Langevin, Grenoble, where he became the first person to bounce a neutron off a soap bubble. Because much of his effort was concentrated in short bursts of activity in Grenoble, and because he hated writing software and data analysis, Roger became involved in student media, notably **Radio Oxford**, where he co-presented the student programme, and the student paper **Cherwell**, where he was deputy editor. In 1983, he joined **Pulse**, the GPs' newspaper, as an assistant features editor. In 1985 he became news editor of **Nuclear Engineering International** and freelanced for **The Economist**, **The Observer**, **The Sunday Times** and **The Guardian**. In 1986 he joined **The Daily Telegraph** as technology correspondent and became science editor in 1988. He has written a best-selling (yet daft) book on the science of Christmas, and co-authored another three, including another best seller. He has organised a series of mass experiments with the **BBC** since 1994, run a science writing competition since 1987, an annual gathering of scientists and the media at the Royal Society, and helped to set up a science photo competition. Roger has at one time or another done various stints on **Radio 4**, been a columnist for **Esquire** and **High Life**, and helped organise a seminar on the science of chocolate. He has been consulted on many TV projects, none of which have been broadcast.

**Tim Radford, science editor of the Guardian, 61**

Tim was born in New Zealand in 1940. He left school at 16 and joined the **New Zealand Herald**, a daily newspaper, as a reporter. He traveled to Britain in 1961, and worked on **Fishing News** and **Fish Selling** and other "trade" papers, before joining the **Hull Daily Mail**, to cover politics, crime, labour disputes and the Docklands. He worked for a while as a subeditor on the **Dover Express** in Kent, and then as a Whitehall information officer, as part of the London Press Service run by the Central Office of Information. In 1973, he joined **The Guardian**, becoming successively, letters editor, arts editor, deputy features editor, literary editor and science editor. He has been science editor since 1992.

**Chris Riley, Producer, BBC Tomorrow's World, 34**

Chris took a degree in applied geology at Leicester University (1986-89), and a PhD in geology and remote sensing at Imperial College (1990-1995). While there he spent "far too much time" on the student radio station and newspaper but when he had finished his PhD, he'd taught himself to write stories, edit tape, and put programmes together. At the same time, Chris was also one of the founding scientists on **ScienceLine**, and over a three-year period he did over 300 science radio broadcasts on its behalf. Whilst writing up his PhD, he applied for "all kinds of jobs" at the **BBC** and got nowhere until a friend invited him in for a night reporting shift at the **BBC Business Unit** (£120/day). He did more than ten reports for the **Financial World Tonight (Radio 5)** over the next six months, teaching at a further education college in Kingston to help pay the rent. Chris gradually started to pick up work from the **BBC Science Radio Unit** — reporting for **Big Bang** and **Science Now (Radio 4)**, Science in Action (World Service) and **The Acid Test (Radio 5Live)**. His big break came in 1997 when he was employed as a series researcher on **The Planets** for **BBC2** (£23,000) and was subsequently offered a permanent job in **BBC TV Science** (now **Specialist Factual**). He currently works as an assistant producer on **Tomorrow's World**. chris.riley@bbc.co.uk

**David Whitehouse, Science Editor BBC News Online, 41**

David did a first degree in Physics at Manchester University, and became the communications secretary at his hall of residence (free beer). On graduating, he did post-graduate research, leading to a PhD in astrophysics at Jodrell Bank. He later did post-doctoral research at Mullard Space Science Lab (MSSL), then consulting for various space agencies, and media outlets (including many media appearances). In 1988, he became the science correspondent for **BBC News and Current Affairs**, and in 1998 additionally science editor of **BBC News Online**. He is also co-presenter of a **BBC TV** science series and has written a book "The Moon: A Biography." Of making the move from science PhD to journalism he says that he "always wanted to communicate science" even though this was unpopular at MSSL. David was inspired to become involved in the media because he saw others (who shall remain unnamed) doing and thought, "I won't be as bad as that". Tongue firmly in cheek, he adds that he was attracted to journalism by "the money, the glamour and the job security, though he has had to settle for the money." David.whitehouse@bbc.co.uk

## 6.2 Places

Most of the opportunities for getting, or improving, your experience in the science media come from the specialist magazine sector. Below are details from a small part of the sector on available work experience, internships or freelance opportunities. This will give you some idea of the variability of the experience and expectations these publications have.

In the Guardian Media Guide and other writers' guides listed in the Reading List you will find contact details for much of the UK magazine sector. It is huge. A quick scan of the various list reveals specialist magazines such as **Astronomy Now**, **BBC Wildlife**, **The Biochemist**, **Bird Life**, **Chemistry in Industry**, **Chemical Engineer**, **Computer Weekly**, **Computing**, **Earth Matters**, **The Ecologist**, **The Ends report**, **European Chemical News**, **European Plastics News**, **Frontiers** (in-house magazine from the Particle Physics and Astronomy Research Council), **Geoscientist**, **Internet**, **Internet Magazine**, **Marine Conservation**, **Materials World**, **Nature**, **National Trust magazine**, **Natural World**, **NERC News**, **New Civil Engineer**, **Personal Computer World**, **Physics Review**, **Psychology Review**, **Professional Engineering**, **Wildfowl and Wetlands**. Some of these are part of the burgeoning in-house magazine sector, publications produced for particular organisations (such as Friends of the Earth, the Royal Society for the Protection of Birds, and the Geological Society). In this list are also consumer titles and journals. Some may offer work experience or formal internships, or be open to freelance writers.

Finally, if you are student journalist looking to expand your experience and cuttings file beyond the university newspaper, it is worthwhile to look for unpaid writing opportunities on the web. There is a rich seam of opportunities here. For example, **Space.com** have a "reporter's network" ([www.space.com/php/outerforce](http://www.space.com/php/outerforce)), which seeks contributions from new writers from all over the world. It is not paid, but there is good exposure on a well-known website, and the outlet offers a few freebies as inducements.

### ***Opportunities at selected outlets***

The descriptions that follow are intended to give an idea of the approaches that may be successful in various kinds of publication for those with little or no writing experience.

**Chemistry in Britain**, Marriott Studentship, Royal Society of Chemistry. Restricted to RSC student members. Deadline usually in March. Contact: RSC, Burlington House, Piccadilly, London W1V 0BN, 020 7440 3360.

**The Economist**, Richard Casement Internship. Spend three months in the summer writing for The Economist about science and technology. No previous journalism experience necessary, although evidence of skill in writing and ideas for stories are. A number of previous interns on this scheme have gone on to get work as science correspondents. Letter of introduction and an article of 600 words suitable for publication in the science and technology section of The Economist are required. Details normally announced in the paper in late January to early February. Four to five weeks allowed for application. Contact: Business Affairs Editor, The Economist, 25 St James's Street, London SW1A 1HG, 0207 830 7000.

### **New Scientist**

There is no organised work experience at **New Scientist**. They do offer a bit, just not much says Dan Clery, until recently the news editor. One option is to shadow the opinion editor. Dan says it is just a question of writing in and seeing what happens. Internships, though, are available. **New Scientist** looks for someone with a science degree who has shown some desire to write, and who has previously tried freelance, student newspapers, or done a postgraduate course. They get hundreds of applicants from people who have done only a good degree which "go straight in the bin". The scheme is advertised in the autumn in the magazine and on the web site.

It is possible for non-professional journalists to get freelance news and features published in **New Scientist**. Dan says that he asks those ringing up about freelance work about their experience, and what their idea is. "If it is good we would commission them, and if what they write is really bad, we won't ask again." On the subject of getting work at **New Scientist** he says that generally the postgraduate courses are good for giving some kind of idea of what the media is all about, but what he tells people mostly is to get as much writing experience as they can. Newsroom number, 020 7331 2751. [NewScientist.com](http://NewScientist.com) also buys freelance copy on a daily basis. Initial approaches should be made to the Online News Editor, Damian Carrington, via email at: [damian.carrington@absw.org.uk](mailto:damian.carrington@absw.org.uk).



## Nature

Occasional opportunities for scientists to work as desk editors during the summer advertised in Nature as and when available. **Nature Science Update**, offers a month long internship, unpaid, where interns get to work with the news service. This opportunity is open at any time of year. After an initial CV, applicants will have to send in samples, ideally and then a writing test. Ideally, writing experience is desirable but it has been known for those without it to get placements. Although, those who are not working scientists will have to have journalistic experience. Sara Abdulla, Editor, Nature News Service, [Nsu@nature.com](mailto:Nsu@nature.com)

Freelance ideas for news stories on the magazine should be sent to Colin Macilwain, news editor +1 202 626 2510; [c.macilwain@nature.com](mailto:c.macilwain@nature.com) (can also be copied to Peter Aldhous, chief news and features editor 020 7843 4524; [p.aldhous@nature.com](mailto:p.aldhous@nature.com)). Ideas for News Features to Peter Aldhous (can also be copied to Jim Giles, assistant news and features editor 0207 843 4645; [j.giles@nature.com](mailto:j.giles@nature.com)). Peter Aldhous says it is best to first send a short pitch via email, which can then be discussed over the phone “if we have an interest”. Experienced freelancers mostly write features, and these mostly have postgraduate qualifications in science. Typically UK-based freelancers are paid £400 per 1000 published words. News and News Features sections are intended to be read by professional scientists from a broad range of disciplinary backgrounds. The news section covers science policy, issues facing the research community, developments in research, science and society etc.

## Research Fortnight

**Research Fortnight** is a restricted-circulation newsletter on UK research policy which is read by research directors around the country, and those who make policy decisions within (mostly science) research. As the circulation is restricted it can be difficult to get hold of — if you can't find a subscriber then you should write to **Research Fortnight** and request a few sample back issues.

This publication has offered work experience and internships on the main newsletter, its sister publication **Research Europe** (based in Brussels), and on its website. Editor Ian Mundell says these are not structured opportunities but they have taken people on, on request. They want graduates who are interested in science politics, and they will consider science, politics and English graduates or those with language skills. “We look for people to demonstrate clarity of writing and thought, and some kind of conversational technique. We give a precis test and an interview test, but we don't expect people to be Paxman.” No formal training is expected, but applicants are expected to demonstrate ability. The publication has also started hiring people who are first jobbers. Freelance work is taken on **Research Fortnight**, but this tends to be from experienced journalists who are already comfortable with the intricacies of research policy. Contact at Unit 111, 134-146 Curtain Road, London EC2A 3AR, (020) 7216 6500.

## Physics World & IOP publishing

The IOP in Bristol has a good track record of recruiting people with no journalism training, as, explains one of their editors, it cannot afford trained journalists. **Physics World**, **CERN Courier**, **Vacuum Solutions**, **FibreSystems Europe**, **FiberSystems International**, **Opto & Laser Europe**, **Wireless Europe**. For employment opportunities, the publishing department says to send a CV and a covering letter outlining your career achievements and career intentions to the personnel officer, Margaret Williams, [margaret.williams@iop.org](mailto:margaret.williams@iop.org), 0117 929 7481. You can also contact the editors of the magazines that interest you directly.

## APPENDIX Courses for science communicators

What follows is a partial list of courses in science communication and journalism that cater either for science graduates in particular or (and this is more common) for graduates in general.

The list comprises those full-time one-year postgraduate courses that are approved or accredited by one or more of the Association of British Science Writers, the Broadcast Journalism Training Council, the National Council for the Training of Journalists, and the Periodicals Training Council. As such it can be only a partial list.

All the full-time courses here are considered eligible for applicants for the Wellcome Trust/ABSW bursaries (<http://absw.org.uk/bursaries.htm>); the list is not exclusive, however, and suitably qualified graduates seeking places on other courses should inquire first (email [absw@absw.org.uk](mailto:absw@absw.org.uk)).

Courses are listed under four headings: Science Communication, General Journalism, Broadcasting (including multimedia) and Periodicals. Lastly, there are details of a couple of part-time courses that the ABSW recommends to those who are not looking for a full-time course.

### Science communication courses

#### **Bath University**

##### **MSc/Diploma in Science Communication**

<http://www.bath.ac.uk/Departments/Psychology/Pg/scc.htm>

Science and Culture

c/o Peta-Jane Field, Postgraduate Coordinator

Department of Psychology

University of Bath

Bath BA2 7AY

01225 323251

email: [P.J.Field@bath.ac.uk](mailto:P.J.Field@bath.ac.uk)

#### **Imperial College of Science, Technology and Medicine**

##### **MSc in Science Communication**

<http://www.scicom.hu.ic.ac.uk/>

Exhibition Road

London

SW7 2AZ

020 7594 8753

email: [p.abbott@ic.ac.uk](mailto:p.abbott@ic.ac.uk)

#### **Queens University at Armagh with Dublin City University**

##### **MSc in Science Communication**

<http://www.qub.ac.uk/arm/index2.htm>

MSc Science Communication Programme Coordinator

Queen's University Belfast

Armagh Campus

39 Abbey Street

Armagh

BT61 7EB

Tel: +44 (0) 28 3751 0678

email: [qua@qub.ac.uk](mailto:qua@qub.ac.uk)

#### **Techniquet and the University of Glamorgan**

##### **MSc in Communicating Science**

<http://www.glam.ac.uk/>

Techniquet

Stuart Street

Cardiff

CF1 6BW

01222 489800

e-mail: [Brian@commsci.demon.co.uk](mailto:Brian@commsci.demon.co.uk)

### Broadcasting courses

#### **Bell Institute of Higher Education, Hamilton**

##### **PG Diploma in Broadcast Journalism**

<http://floti.bell.ac.uk/postgradradio>

Hamilton,

ML30JB,

Scotland

01698 283100 Ext. 306

email: [r.bergman@bell.ac.uk](mailto:r.bergman@bell.ac.uk)

**Bournemouth University**  
**Postgraduate Diploma/MA Multi-Media Journalism**  
<http://media.bournemouth.ac.uk/mammj/index.html>  
Studland House  
12 Christchurch Road  
Bournemouth  
BH1 3NA  
01202 595745  
email: bmspgrad@bournemouth.ac.uk

**Cardiff University**  
**Postgraduate Diploma in Bi-media Journalism**  
[http://www.cf.ac.uk/jomec/post/pgdip/broadcast/brd\\_home.html](http://www.cf.ac.uk/jomec/post/pgdip/broadcast/brd_home.html)  
School of Journalism, Media and Cultural Studies  
The Bute Building  
King Edward VII Avenue  
Cathays Park  
Cardiff CF1 3NB  
029 2087 4156  
email: JOMEC-Diploma@cardiff.ac.uk

**City University, London**  
**Postgraduate Diploma in Broadcast Journalism**  
<http://www.city.ac.uk/journalism/broadcast/broadcast.html>  
Department of Journalism  
Northampton Square  
London  
EC14 0HB  
020 7477 8221  
email: journalism@city.ac.uk

**Highbury College, Portsmouth**  
**PG Diploma in Broadcast Journalism**  
<http://www.highbury.ac.uk/coursesearch/course.asp?id=472>  
Client Services  
Cosham  
Portsmouth  
Hampshire  
PO6 2SA  
02392 313373/4  
email: info@highbury.ac.uk

**London College of Printing**  
**Postgraduate Diploma in Broadcast Journalism**  
<http://www.linst.ac.uk/>

**Nottingham Trent University**  
**PG Diploma in Television Journalism**  
<http://www.cbj.ntu.ac.uk/>  
Postgraduate Admissions  
The Centre for Broadcasting & Journalism  
The Nottingham Trent University  
Burton Street  
Nottingham  
NG1 4BU  
0115 848 5803  
email: cbj@ntu.ac.uk

**University of Central England, Birmingham**  
**PG Diploma in Broadcast Journalism**  
[http://www.uce.ac.uk/study\\_ops/biad/courses/pgbrojou.htm](http://www.uce.ac.uk/study_ops/biad/courses/pgbrojou.htm)  
Department of Media & Communication  
UCE Birmingham  
Perry Barr  
Birmingham B42 2SU  
0121 331 5801  
email: media@uce.ac.uk

**University of Leeds, Trinity All Saints**  
**MA/PG Diploma in Broadcast Journalism**  
MA/PG Diploma in Radio Journalism  
<http://www.tasc.ac.uk/depart/media/pg/bimed.htm>  
Brownberrie Lane  
Horsforth  
Leeds LS18 5HD  
0113 2837100  
email: M.Hampton@tasc.ac.uk

**University of Central Lancashire, Preston**

**PG Diploma in Broadcast Journalism**

<http://www.uclan.ac.uk/facs/journ.htm>

Centre for Journalism

Preston

Lancs

PR1 2HE

01772 894730

email: [Ljwilliams1@uclan.ac.uk](mailto:Ljwilliams1@uclan.ac.uk)

**Sheffield Hallam University, Sheffield**

**PG Diploma in Broadcast Journalism**

[http://www.shu.ac.uk/cgi-bin/prospectus/op\\_pglookup1.pl?id\\_num=CUL017](http://www.shu.ac.uk/cgi-bin/prospectus/op_pglookup1.pl?id_num=CUL017)

School of Cultural Studies

Psalter Lane Campus

Sheffield

S11 8UZ,

0114 225 2607

email: [cultural@shu.ac.uk](mailto:cultural@shu.ac.uk)

**University of London, Goldsmiths College**

**MA in Radio**

<http://www.goldsmiths.ac.uk/pgprospectus/index.html>

Department of Media and Communications

Goldsmiths College

University of London

New Cross

London SE14 6NW

020 7919 7600

email: [media-comms@gold.ac.uk](mailto:media-comms@gold.ac.uk)

**University of Westminster**

**Postgraduate Diploma in Broadcast Journalism**

<http://www.wmin.ac.uk/courses/commdesmed/pgdipperiodbroadjournal.htm>

School of Communication, Design and Media

Harrow Campus

Northwick Park

Watford Road

Harrow

HA1 3TP

020 7911 5000

email: [anderssl@wmin.ac.uk](mailto:anderssl@wmin.ac.uk)

**General journalism courses**

**Cardiff University**

**Postgraduate Diploma in Journalism Studies**

<http://www.cf.ac.uk/uwc/jomec/index.html>

Centre for Journalism Studies

Bute Building

King Edward VII Avenue

Cathays Park

Cardiff

CF1 3NB

02920 874786

email: [EnglishDM@Cardiff.ac.uk](mailto:EnglishDM@Cardiff.ac.uk)

**De Montfort University**

**Postgraduate Diploma in Journalism**

<http://www.dmu.ac.uk/Subjects/Db/course.php?courseid=54>

The Gateway

Leicester

LE1 9BH

Tel. +044 (0) 116 255 1551

Contact Ms Ali Haynes

**Trinity and All Saints College**

**MA/Postgraduate Diploma in Print Journalism**

<http://www.tasc.ac.uk/depart/media/pg/print.htm>

Brownberrie Lane

Horsforth

Leeds

LS18 5 HD

0113 2837100

email: [M.Hampton@tasc.ac.uk](mailto:M.Hampton@tasc.ac.uk)

**University of Central Lancashire**  
**Postgraduate Diploma in Newspaper Journalism**  
<http://www.uclan.ac.uk/facs/lbs/depts/journ/index.htm>  
Centre for Journalism  
Preston  
Lancs PR1 2HE  
01772 894730  
email: Ljwilliams1@uclan.ac.uk

**University of Strathclyde/Glasgow Caledonian**  
**Postgraduate Diploma/MLitt in Journalism Studies**  
<http://www.strath.ac.uk/departments/scjs>  
Scottish Centre for Journalism Studies  
Crawford Building  
Jordanhill Campus  
76 Southbrae Avenue  
Glasgow G13 1PP  
Tel. +044 (0) 141 950 3281  
Contact: Mr Gordon Smith

## Periodicals courses

**Cardiff University**  
**Postgraduate Diploma in Journalism**  
<http://www.cf.ac.uk/jomec/post/pgdip/pgd.html>  
Bute Building  
King Edward VII Avenue  
Cardiff CF1 3NB  
01222 874786  
email: holmesta@cardiff.ac.uk

**City University**  
**Postgraduate Diploma in Periodical Journalism**  
<http://www.staff.city.ac.uk/~rc314/courses/postgrad/periodical/index.html>  
Department of Journalism  
Northampton Square  
London EC14 0HB  
020 7477 8221  
email: sball@city.ac.uk

**University of Westminster**  
**Postgraduate Diploma in Journalism**  
[http://www.wmin.ac.uk/index\\_new.asp](http://www.wmin.ac.uk/index_new.asp)  
School of Communication, Design and Media  
Harrow Campus  
Northwick Park  
Watford Road  
Harrow  
HA1 3TP  
020 7911 5000  
email: anderssl@wmin.ac.uk

## Part-time courses

**Birkbeck College**  
**Diploma in Science Communication**  
<http://www.bbk.ac.uk/fce2001/certdip/scicommdip.htm>  
Centre for Extramural Studies  
26 Russell Square  
London  
WC1B 5DQ  
020 7631 6662  
email: sciencesociety@fce.bbk.ac.uk

**The Open University**  
**MSc in Science (Communicating Science/Science and the Public)**  
<http://www.open.ac.uk/science/msc/>  
MSc in Science Programme Office  
NU101, Pentz Building  
Walton Hall  
Milton Keynes MK7 6AA  
01908 659574  
e-mail: MSc-Science@open.ac.uk