Science Communication

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This helpsheet is intended as an introduction to the sector of Science Communication and a to a range of roles within this sector. The information includes a description of the sector and sub-sectors, description of the roles and skills needed, and useful tips for ways of 'getting-in'. Each section also contains useful links for further reading. The helpsheet is aimed at graduates, as well as postgraduates, doctoral researchers and postdoctoral researchers.

For any more detailed exploration of careers and your career options, please use our one-to-one appointments at UCL Careers, booking via MyUCLCareers.

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Science Communication is a broad field that includes health and medical communication, science journalism, public engagement and outreach for scientific or health organisations, health and science marketing, and technical writing and editing. It usually extends to the communication of science, technology, engineering and maths (STEM) topics.

Medical Communication

Medical Communication has been expanding rapidly in recent years. Its general role is to raise awareness of diseases and treatments by educating and informing healthcare professionals and patients.

Most of the medical communications work is delivered by medcomms agencies. They provide consultancy services to the pharmaceutical industry, including dissemination of clinical data and developing communications to help gain a drug more visibility, as well as advising on how to educate its stakeholders about benefits and risks of a drug or therapy using clinical data.

Some agencies specialise in a specific area of medical communications (e.g. legal and regulatory documentation, medical education and publications or advertising and promotions) and some offer a full range of consultancy, including medical education, public relations, health economics and outcomes research (HEOR), market access and advertising. So, apart from medical writing, there are a number of other roles that can be found in some medcomms agencies.

- *Examples of careers in medcomms and HEOR:*

  - (Associate/Senior/Principal) Medical Writer, (Copy) Editor
  - Project Coordinator, Project /Account Manager, Account Executive
  - Epidemiologist
  - Statistician, Data Scientist, Information Scientist, Analyst
  - Health Economist
  - Market Access Manager
  - Medical Science Liaison

The table below shows the most common types of med com outputs (from Moon A. From academic to medical writer, 2019, p. 7).

What do Medical Writers do?

"Medical writers will spend much of their day writing, proof reading and editing. A large part of a medical writer's workload will also involve referencing marking every statement in a document with the source from which it has been taken. Some of the typical projects that a medical writer may work on will include manuscripts and review articles, educational slides sets, slide presentations for congress symposia, abstract books, posters, promotional materials, information for company sales reps and website copy." (https://www.carrotpharma.co.uk/what-is-medical-communications)

- *What skill do you need for medical writing*

You need life sciences background (doctoral and postdoctoral experience is highly advantageous), strong writing skills, research skills, data analysis skills with statistics, excellent attention to detail and client focus.

While most medical writers start out working for an agency, many work as freelancers after gaining some experience or flexibly from home for an agency.

What do Account Teams do?

"Account Teams are responsible for the delivery of a client account (i.e. project) within the agreed time frame and client budget. They will work closely with internal teams to ensure that projects run smoothly and efficiently in the interests of their clients and they build and develop relationships with their clients by attending face to face meetings, in order to understand the objectives and needs to deliver maximum value to the client from both a strategic and tactical perspective." (https://www.carrotpharma.co.uk/what-is-medical-communications)

- *More information:*

  - http://medcommsnetworking.com/careersguide.pdf - an excellent guide to medcomms writing careers; includes many case studies
  - http://medcommsnetworking.com/account_managers_guide_x.pdf - a great guide to medcomms account management careers; includes many case studies
  - http://www.medcommsnetworking.com/regulatory_writers_guide_x.pdf

- https://info.amwa.org/ultimate-guide-to-becoming-a-medical-writer#what_is_medical_writing – a special issue of a journal dedicated to medical writing (free access); includes many case studies.
- https://www.healthcareers.nhs.uk/explore-roles/doctors/career-opportunities-doctors/alternative-roles-doctors/medical-communications-and-medical-writing
- https://www.mastersincommunications.com/features/guide-to-science-medical-communication
- https://www.carrotpharma.co.uk/what-is-medical-communications

Health Communication

Health Communication is typically understood to include communication relating to public health, health marketing and education, and political advocacy.

Disseminating information regarding health-related issues, practices, and services to the public may include large-scale health education, such as public health campaigns (e.g. on nutrition, exercise, and general well-being, as opposed to specialized medical advice), community outreach, or advocacy efforts intended to influence health improvements or reduce potential risks among the public.

There are many organisations working in the area of public health (see the list). One of the most widely known is Public Heath England, an executive agency of the Department of Health and Social Care.

❖ *Examples of roles*

- Public Health Manager in a primary care trust (PCT)
- Communications Manager in NHS
- Health Promotion Officer in a local authority
- Public Health Consultant in a local authority, Public Health England (PHE), NHS, etc.
- Health Information Officer in a local authority
- Healthcare Writer in a healthcare communications agency
- Digital Account Manager in a healthcare communications business
- Health Promotion Worker in a charity
- Health and Well Being Coordinator at a social housing provider
- School Health Advisor in an NHS Hospital Trust
- Behaviour Change Advisor in a Private Health Care Company
- NHS Information Specialist at the National Institute of Clinical Excellence (NICE)

❖ *More information:*

- https://www.cdc.gov/healthcommunication/healthbasics/WhatIsHC.html
- https://www.publichealthcareeredu.org/what-is-public-health/ - good general overview
- https://ihpe.org.uk/resources/related-organisations/ - includes a list of organisations related to public health
- https://publichealthonline.gwu.edu/blog/health-communication-terms-glossary/

Science writing / journalism

The purpose of science writing/journalism is to keep the general public informed of important topics in science by explaining complex ideas in ways that the public can understand.

Science journalists create compelling stories about science that appear in various media: newspapers and magazines, in print and online, on the radio and TV, and in podcasts and videos.

Newspapers, specialist magazines and periodicals, and online journalism

Most major news outlets have a dedicated Science section for which science journalists select, research, write and edit engaging content. Some publications are entirely dedicated to science, e.g. Scientific American, New Scientist, National Geographic, etc.

- *What jobs are there?*
    - Reporter – many journalists started as reporters
    - Staffer – staff reporters are typically employed full-time by a media organisation
    - Freelancer – many science journalists/writers work on a freelance basis
    - Editor (commissioning editors, copy editors, etc.)

It is important to note that the field is undergoing rapid change as readers and advertising are increasingly migrating to the internet and digital platforms. Decline in sales of print publications means that jobs in traditional print media are now scarce. However, there are growing opportunities to produce digital content. A cluster of major science new magazines (e.g. Scientific American, New Scientist, National Geographic etc.) are increasingly focused on digital content, and the major news outlets now have a digital presence as well (e.g. The Guardian, The Independent, etc.). Importantly, there are a growing number of new outlets for science news, including specialist science news websites (e.g. Wired, for more – see here)

- *What skills do you need*

First and foremost you need to have a talent for writing – ability to write an engaging story in accessible language, But you also have to be able to quickly get to grips with complex subjects about which you may know very little, interview sources, double-check the facts. All that usually under a big time pressure.

You do not need a PhD. The above skills are more important, though having a PhD could have some advantages, e.g., you might establish yourself as a person to go to when editors are assigning a story, or it may give you confidence when interviewing scientists.

An excellent way to develop skills in science writing could be blogging. Science blogs enjoyed rapid proliferation in the past decade as it is technically easy to start blogging.

The boundaries between different roles in journalism have become rather blurred and multimedia journalists who are able to produce content using text, graphics, digital media, audio and video might have some advantage.

- *How to get in*

In the past many journalists started as a junior reporter and worked their way up. It still possible to do that but as many media organisations have contracted, these entry-level positions became highly competitive. Although it is not essential to have completed a science journalism course, it could make it easier to get into the sector, as the course helps to open up a network of contacts.

Writing for a student newspaper is a definitely a useful experience, and, as mentioned above, you can hone your writing skills and build your reputation online as well, e.g. via blogging. In fact, blogs have helped launch many science journalists. Twitter can also be very useful. It enables journalists

to find stories and contacts, to communicate directly with their audience and build up following (and thus reputation) and so for many science journalists Twitter is an essential tool.

Broadcasting: news, radio and TV

Some programmes and organisations take people on as researches on the basis of their scientific background but many look for some journalistic background and at least an awareness of TV or radio.

- *News*

The main news broadcasters (e.g. BBC News, ITN [ITV], Channel 4) have a science editor and specialist science and technology correspondents and each news programme may also employ producers or reporters with a particular interest in science.

- *Radio*

Radio stations, such as Radio 4, Radio 5 and BBC World Service have a number of science programmes, which tend to be longer than news and not tied to current events. The main roles for these programmes include researchers, producers and broadcasters/presenters.

- *TV*

BBC has a special unit – BBC Studios, The Science Unit – that has produced many well-known science programmes, e.g. The Planets; Horizon; Trust me, I am a Doctor; Forces of Nature, etc. It employs a significant number of researchers and producers working on science and natural history programming. However, if you want to become a TV presenter, you face a big challenge as there are no direct routes for getting into presenting. Most programme use experienced presenters, who are, in some cases, also academics (such as Brian Cox, Alice Roberts, Helen Czerski, Marcus du Sautoy, Jim Al-Khalili, etc.) or moved into presenting after significant experience in other roles within the broadcasting company.

Look also for opportunities in independent production companies as some produce factual content, including science programmes for large broadcasters, such as BBC, ITV, Channel 4 etc. (e.g. Pioneer Productions, RDF, etc.).

- *More information:*

  - http://www.absw.org.uk/Documents/SYWTBASW.pdf – a useful resource; includes a guide to getting in, though a bit dated now - 2002, case studies, etc.
  - https://cshperspectives.cshlp.org/content/9/9/a032961.full – an excellent and thorough guide to the profession; focus on US but most of the content is very relevant elsewhere in the world; originally published 2014)
  - https://www.prospects.ac.uk/jobs-and-work-experience/job-sectors/media-and-internet/overview-of-the-uk-media-sector
  - https://www.prospects.ac.uk/job-profiles/science-writer
  - https://www.prospects.ac.uk/job-profiles/media-researcher
  - https://www.prospects.ac.uk/job-profiles/broadcast-journalist
  - https://www.discovermagazine.com/the-sciences/on-the-origin-of-science-writers - case studies
  - https://www.howtogeek.com/120865/the-best-websites-for-expanding-your-scientific-knowledge/
  - http://www.thesyp.org.uk/
  - https://www.bbc.co.uk/commissioning/tv

Public Engagement and Outreach

Public engagement and outreach are an important part of science communication. The terms are sometimes used interchangeably as both aim to promote science to a wide audience in order to inform and educate about important scientific discoveries and issues (e.g. about environment, health etc.). Public engagement also aims to engage the public in two-way conversations about the shared issues and problems for the society's benefits. Outreach includes activities such as public lectures, science festivals, workshops to encourage the public understanding of science and scientific research and it is also often used to encourage school children to take up STEM study in higher education.

Public engagement/outreach activities are often done by universities, research institutions (e.g., Sir Francis Crick Institute, Cancer Research UK), and science-related institutions (e.g. Science Museum, learned societies, such as The Royal Society, The Royal Society of Chemistry, The Royal Astronomical Society, etc.).

❖ *Examples of roles*

- Public Engagement Coordinator / Officer / Manager
- Public Engagement and Outreach/Communications Officer
- Communications Manager
- Science Communicator
- Science Communication Events Officer
- Schools Engagement Officer
- Outreach Developer

❖ *What skills do you need for roles in communicating science to the public*

The following skills are the most important: excellent communication and presentations skills, ability to communicate complex information in an accessible way, enthusiasm for science and for inspiring this enthusiasm in others, event organisation skills, proactivity.

❖ *More information:*

- https://www.big.uk.com/festivals - includes a list of science centres and science festivals in the UK, list of overseas events and opportunities, links to useful training materials, and a job board for public engagement/outreach positions
- https://www.publicengagement.ac.uk/ - website of the National Co-ordinating Centre for Public Engagement that has an international reputation for inspiring and supporting universities to engage with the public
- https://www.earlham.ac.uk/articles/public-engagement-science-communication-waste-of-time - an interesting overview of why public engagement is important

Technical Writing and Editing

Society for Technical Communication (STC) defines technical communication is as any form of communication that is about technical / specialized topics, instructs its audience/readership in how to do a particular task, or uses technology in its dissemination

Some types of scientific and medical communication involve technical communication (e.g. patient instructions and summary of side effect on medications). Strong ability of translate complex or specialised concepts into prose that is comprehensible and actionable for the readers is very important.

❖ *Examples of careers:*

Technical documentation writers and editors at technology companies, hardware or software manual writer, web designers and developers, technical illustrators etc.