SOCIETY FOR EXPERIMENTAL BIOLOGY

SEEDS OF GROWTH

A GUIDE FOR UNDERGRADUATE BIOSCIENCE STUDENTS

SOCIETY FOR EXPERIMENTAL BIOLOGY

Introduction

Welcome to the vibrant world of biological sciences. Whether you're about to embark on your undergraduate journey or you're already engaged in the study of biosciences, this booklet will guide you in considering the myriad of opportunities within the field, highlighting opportunities and providing tips for success in your chosen career or field of study.

www.sebiology.org

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Who are we

The Society for Experimental Biology (SEB) is a Learned Society, a type of member organisation dedicated to supporting individuals who specialise in specific fields or disciplines. Members connect with one another to share discoveries, best practices, and benefit from the career opportunities and grants provided by SEB.

Our story began in 1923 when a group of experimental biologists gathered at Birkbeck College in London with the aim of founding a Society to "promote the art and science of experimental biology in all its branches". Today, we represent an international community of biologists, supporting them in their scientific work, experimental techniques, and fostering connections between cell, plant, and animal biology.

However, our mission extends beyond advancing scientific knowledge; we are also committed to supporting the next generation of scientists. That is why we have compiled this guide for undergraduate students to aid you in your studies and future careers, providing the resources and opportunities needed to thrive in your scientific pursuits.

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Why Study Biological Sciences?

The biosciences cover a broad range of topics and specialist subjects all linked to the study of living organisms and life on earth. This means you can choose subject areas that most appeal to you from biochemistry, cell biology, plant biology, conservation, ecology, genetics, microbiology, pathobiology to physiology.

The subject you choose as a degree can be considered as a blanket term, the specific content of each course will be very different depending on the modules you choose. It's useful to look at the different modules at the universities you are applying to as course content can vary significantly between universities. In the first year of your degree, you are likely to cover a wide range of topics, choosing your preferred areas to focus on in the second and third years. This is good if you haven't decided on a specialist area yet and would like to be more flexible in your studies.

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Why Study Biological Sciences?

Some examples of undergraduate degrees in the biological sciences:

- Animal Behaviour
- Biological Sciences
- Biotechnology
- Marine Biology
- Microbiology
- Biomedical Sciences
- Ecology
- Marine Biology
- Natural Sciences
- Neuroscience
- Nutrition
- Zoology

More resources

For more guidance, take a look at the Royal Society of Biology "Choose the Right Degree, Find the Right Job" booklet: www.rsb.org.uk/images/Choose%20the%20right%20degree.pdf

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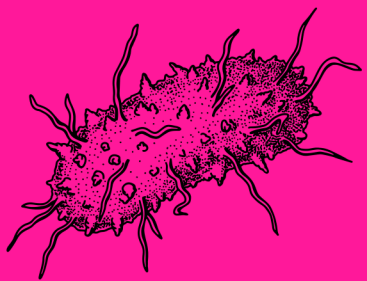
What Can You Do with a Biology Degree?

Many graduates will choose to study at postgraduate level, either doing a research masters or PhD. This allows you to begin a career in scientific research and specialise in a particular field. Further study can help career progression, but it isn't always necessary. Since degrees in biological sciences are so broad, the career opportunities for bioscience graduates as equally as extensive.
For an idea of the scope of career options available, here are a few examples:

- Research scientist
- Ecologist
- Nature conservation officer
- Biotechnologist
- Forensic scientist
- Government policy and agency roles
- Science writer
- Clinical research
- Pharmaceutics and biotechnology
- Environment and agriculture
- Education
- Microbiologist
- Scientific sales or marketing
- Technical media and journalism
- Biomedical scientist
- Healthcare scientist in clinical biochemistry, haematology, or immunology
- Pharmacologist
- Toxicologist
- Zoologist
- Science outreach and public engagement
- Plant breeder or geneticist



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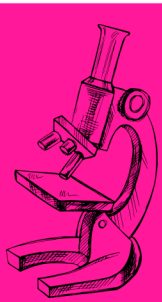
Job Roles

The following pages share some more detailed descriptions of a few of the most popular roles, but there are many more possibilities available so be sure to read some of the additional resources listed at the end of this section for a more complete range of job profiles.

Research Scientist

Working as a scientific researcher can be a highly stimulating and rewarding career for biology graduates. Research can be conducted across any specialist area of biology and is crucial for developing as a society. As a researcher you'll aim to add to the understanding of our world and the life on this planet by planning and conducting experiments and analysing results. Typically a researcher would carry out their own reserach and experiments, but will work as part of a larger team all focused on a certain subject area. You will be expected to share your findings and relevant information with colleagues at international conferences or through the publication of research papers.



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Job Roles

In order to progress in a research career, you will likely need the right additional qualifications such as a research masters or PhD. However, roles such as research assistant or placement years can be an entrance point without this, and you may decide to undertake additional qualifications part-time to advance to more senior roles.

Research scientist are often found in academic institutes such as universities, but may also be advertised in research institutes, government laboratories, medical facilities and hospitals, and within the business and industry setting.

Environmental Conservation

As an environmental biologist or nature conservation officer, you would work to protect manage and enhance natural resources and plant and animal wildlife. Depending on the geographical region, this might be focused on woodland areas and forest, coast and marine sites, mountains, rivers, grassland or even green spaces in urban areas.

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Job Roles

As well as carry out recovery programs for endangered species, you'll also be expected to educate the general public, encourage them to use the natural spaces, and raise awareness and understanding of the environment. You may even help to develop policies for local or national government. To get started in this this sector taking on a voluntary role to build contacts and relevant experience for your CV may prove very useful. Becoming a student member of a professional institute or a relevant organisation is also an excellent way to network.

These jobs are usually advertised by charities and not-for-profit organisations, as well as government and ecological consultancies in the public sector.

Job titles within this sector are varied and you could be known as a:

- conservation assistant or technician
- project officer or biodiversity officer
- sustainable development officer
- nature conservation officer
- environmental biologist

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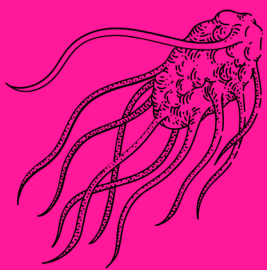
Job Roles

Biology Education

A career in biology education can also can be very rewarding as you will be helping and encouraging young people or adults to learn about the world. These jobs can be based in a classroom, a lecture theatre, a laboratory or a museum. If you want to work in the field of education, you will have to undertake further study. Depending on the role you choose, depends on the qualifications you need. For example, a primary or secondary school teacher will need an undergraduate degree and a teacher training qualification, while a university lecturer will be required to have gained a master's degree or PhD.

Science writing, publishing, and communication

If you have a biology degree and are also interested in the world of media or communicating science, then a career in science writing and journalism may be worth pursuing.



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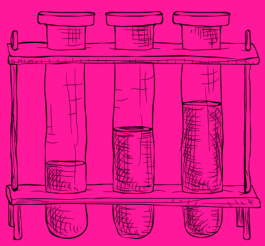
Job Roles

Science writers must research, write and edit scientific articles and features, for scientific journals, professional publications and magazines, websites and blogs, or television and radio programmes.

In order to be an effective science writer, you need to understand complex scientific topics, and translate them into clear and concise language that is easily understood by the general public. In addition to researching and writing, some science writing jobs may also include editing or broader communications responsibilities.

You may enter a role in science writing immediately upon graduation, or can move into the industry after a postgraduate degree or experience in another scientific field. There are also postgraduate qualifications in journalism or scientific communications that you could enrole on. These courses aim to help those from a science-based background distil complex information to a level that the general public can understand.



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Where can I find out more?

If you are interested in learning more about various job roles within the biosciences, the “Prospects” website has a range job profiles for specific roles giving details on duties, salary expectations, and career progression:

www.prospects.ac.uk/job-profiles/browse-sector

The Royal Society of Biology also has lots of advice on your options after completing your biology degree in their Next Steps booklet:

www.rsb.org.uk/images/SB_Next_Steps_booklet_2018_AW_.pdf

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Postgraduate opportunities

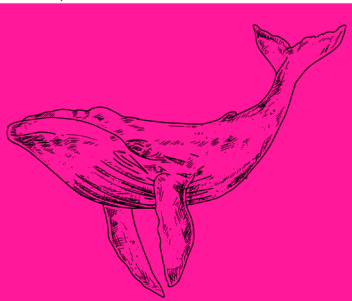
Many Biological Sciences graduates start their career by gaining a Master's or PhD qualification.

Masters

There are two types of masters available: Taught masters and a master's by research.

Taught masters are run as courses similar to an undergraduate degree. You attend lectures, perform practical's and have end of year exams or producing a thesis at the end to gain your qualification, an MSc (Masters of Science). A typical course length is 1-2 years full time or up to 3 years part time.

Masters by research are a good option for students interested in a research career. The courses usually include a small proportion of lectures, but the majority of the course is based on an independent research project which is assessed by preparing a thesis. Again, these courses last 1-2 years full time or 2-4 years part time and they are often seen as a preparatory course for a PhD. The qualification you will gain is an MRes (Masters of Research).



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Postgraduate opportunities

PhD

Depending on the country you study in, you may be able to go straight from an undergraduate degree into a PhD, or you may need to complete a Masters or equivalent work experience first. The good news with PhDs in science is that the majority are partially or fully funded. This may be through a research council who award grants to university departments to advertise studentships, the universities then advertise these funded places to students in a similar way to applying for a job.

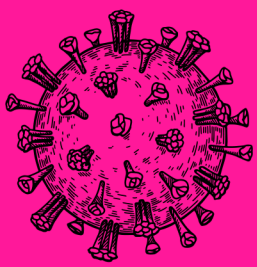
More information and resources

“Find a Masters” is a directory of courses at academic institutions and has useful advice on funding:

https://www.findamasters.com

Find a PhD is a directory of PhD opportunites at academic institutions around the world:

https://www.findaphd.com



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Becoming more employable

Throughout your undergraduate degree there are many opportunities to make yourself attractive to potential employers and to add to your CV. For example, you could write for your university newspaper, blog or society magazine, take on a committee member role with a student society or sports club, or taking advantage of part-time work opportunities and work placement schemes. These opportunities will help to improve your transferable skills. Joining a Learned Society could also be beneficial. Joining the SEB for example means you are eligible for a host of grants and free or discounted conference attendance.

Work experience is one of the best ways to boost your CV and has the added benefit of finding out if you enjoy a particular job. There are many ways to gain work experience, whether it is shadowing someone, volunteering, or undertaking a summer studentship. Some courses include a year in industry which is a great way to gain several months of work experience whilst being financially supported by your existing student loans, and some positions are paid.

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Becoming more employable

Another option could be undertaking a research project over the summer or shadowing a researcher for a few weeks. Working closely with established researchers is useful, particularly if you want to pursue a career in research. Your university website or careers office may have information to help you identify and apply for a studentship, or you can approach a researcher at your institute whose work you find interesting. Members of the SEB can apply for travel grants which could help you financially if you wish to gain work experience.

More information and resources

The Royal Society of Biology has a number of summer studentships advertised on their website: www.rsb.org.uk/get-involved/grants/undergraduate-studentships

Members of SEB can apply for travel grants to help with the financial costs of a placement or work experience: www.sebiology.org/grants.html

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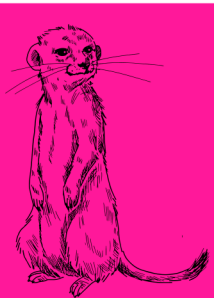
Opportunities with Learned Societies

What is a Learned Society?

'Learned Societies' are member organisations for people who specialise in a specific field or discipline. Members are people who share an interest in that subject and may include academics, university researchers, people working in industry, postgraduate and undergraduate students, teachers and occasionally interested members of the public. Each Learned Society has its own set of rules on who is eligible for membership, fees and benefits.

SEB specialises in experimental biology. This includes animal, plant, and cell biology. We are a truly international community, bringing together experimental biologists to support them in their scientific work, new ideas and experimental techniques, and establish connections. One of our key aims is to increase the influence of experimental biology within the scientific community and demonstrate to the wider public its importance and the impact of biological research on tackling real-world issues such as climate change, food security and conservation efforts.



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What are the benefits of joining the SEB?

Joining the SEB is a great way to keep up to date with developments in the field of experimental biology through our newsletters, magazine, and meetings. There are also several member benefits that students can take advantage of.

Money

Members of the SEB have access to a number of grants. These can help you gain professional experience, attend conferences, or set up your own events: www.sebiology.org/grants.html

Employability

Membership of a Learned Society in a field you are interested in demonstrates your commitment to that subject, which may prove useful on your CV at interview. Joining a Society with broad scope such as the SEB allows you to do this while you are still figuring out exactly how you would like to specialise in your future career.

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What are the benefits of joining the SEB?

Career skills

Throughout the year, we run a number of career building workshops to enhance skills like improving your scientific writing, developing time management skills, or dealing with “imposter syndrome”. We also have many on-demand resources on these topics in our members only area of the website.

Networking

Joining a community like the SEB gives you a chance to meet new people who are working and studying in an area that interests you. This can be useful to learn from people who are in the next stage of their career to you, find out about opportunities that are available, and increase your awareness of current issues the biosciences. You also have a chance to sign up to our mentoring scheme. It puts you in touch with a network of other people actively engaged in your discipline of interest, which can be beneficial on a purely personal level but also when it comes to finding placements or jobs.

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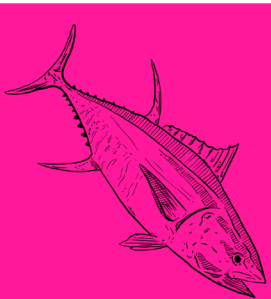
What are the benefits of joining the SEB?

Discounted and free events

Each year we have an annual conference which is celebrated for creating the perfect composition of research, new discoveries and collaborative connections. It is also well known for being one of the most inclusive and friendly conferences for students. SEB members get up to 80% discount on attendance for the conference, and the SEB travel grants mean you could even attend for free. It may also be a perfect opportunity to present your final year project as a poster gaining valuable experience for your personal growth and your CV.

We also have several other webinars, career building events, symposium and satellite meetings across the year. These are all heavily discounted or free for SEB members.



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What are the benefits of joining the SEB?

A chance to get involved

There are many ways to become more active as a member of the SEB. For example, you could:

- Write for the SEB magazine or showcase your work
- Get involved with public engagement events
- Volunteer on SEB working groups and at SEB events

This will help you to develop skills and experience for your CV, increase the number of people who are aware of you and widen your network, and shows that you are committed to the sector.

Learn more about the benifits of joining the SEB on our website or send us an email, we'd be happy to help!

www.sebiology.org/membership.html
membership@sebiology.org

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Have fun exploring the world of biology!

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