



# THE SCIENCE AT THE HEART OF HEALTHCARE

A CAREER  
IN BIOMEDICAL  
SCIENCE



[WWW.IBMS.ORG](http://WWW.IBMS.ORG)

# WHAT IS A BIOMEDICAL SCIENTIST?

Biomedical scientists work in healthcare laboratories diagnosing diseases and evaluating the effectiveness of treatment by analysing fluids and tissue samples from patients.

They provide the 'engine room' of modern medicine – 70% of diagnoses in the NHS are based on pathology results provided by laboratory services.

Handling over 150 million samples in the UK each year, every person at some point in their lives will benefit from the services of a biomedical scientist.

## WHAT MAKES BIOMEDICAL SCIENCE SUCH A FASCINATING AND REWARDING CAREER?

It could be the personal satisfaction of using your scientific and detective skills to investigate disease to help your medical colleagues save the life of a patient. Or, it could be the diversity of an interesting and rewarding career with a range of opportunities for personal and career development.

Modern biomedical science is a fast-changing, dynamic and complex science that requires accuracy, efficiency and attention to detail.

150  
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# THE ROLE OF BIOMEDICAL SCIENCE IN HEALTHCARE

Biomedical scientists are at the heart of multi-disciplinary teams in healthcare.

They provide other professionals with vital scientific information, allowing them to make informed clinical decisions, ensuring blood stocks are adequate at critical times, matching blood to patients, measuring chemicals to monitor patient condition, investigating disease by looking at tumour samples and identifying micro-organisms in the fight against infection.

## BIOMEDICAL SCIENTIST ROLES ALSO INCLUDE:

- ◆ cancer screening
- ◆ identifying micro-organisms causing outbreaks such as food poisoning
- ◆ blood donation services
- ◆ infection control
- ◆ drug testing
- ◆ AIDS and HIV diagnosis and treatment
- ◆ rapid response labs for accident and emergency
- ◆ drug therapies
- ◆ quality management
- ◆ research
- ◆ leadership
- ◆ training



# BECOMING A BIOMEDICAL SCIENTIST

Modern pathology and biomedical laboratory work involves complex and diverse investigations requiring an in-depth scientific knowledge of anatomy, physiology and pathology.

If you plan to work as a biomedical scientist you should choose an IBMS accredited degree. If your degree is not accredited by the IBMS, your degree can be assessed and any educational shortfall can be identified. You may need to take additional modules on an IBMS accredited degree.

To study biomedical science at university you will need A levels in biology and/or chemistry, or equivalent, as well as GCSE mathematics, or equivalent. Universities have different requirements for their biomedical science degree courses which can usually be found on their websites.

**FOR A FULL LIST OF UNIVERSITIES OFFERING IBMS ACCREDITED BIOMEDICAL DEGREES WITH LINKS TO THEIR WEBSITES VISIT:**  
[WWW.IBMS.ORG/DEGREES](http://WWW.IBMS.ORG/DEGREES)

## REQUIREMENTS

**A LEVELS**  
BIOLOGY  
AND/OR  
CHEMISTRY

**+ GCSE**  
MATHS



# IBMS ACCREDITED DEGREES



IBMS accredited degrees are designed to give you tailored academic biomedical knowledge and training.

Sometimes honours degree courses are full-time, often with an integrated placement in a laboratory.

Part-time options are also available allowing you to combine your studies with other commitments. For example, working as a trainee in a hospital laboratory four days a week with one day a week studying at university.

Other graduates with science degrees containing the principle core subjects may enter the profession but will need to supplement their degrees with additional modules that are an integral part of accredited biomedical science degree courses.

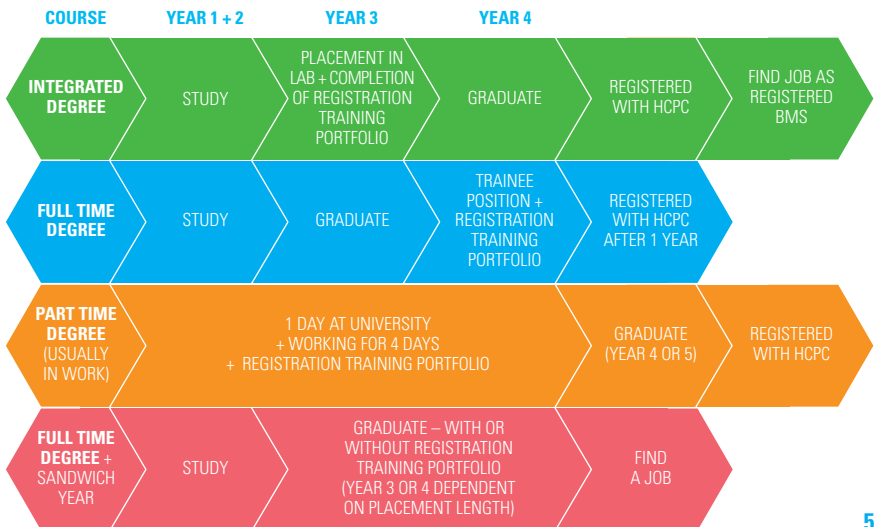
## DEGREE PATHWAYS

ACCESSIBLE AFTER STUDYING:

A LEVELS  
BIOLOGY  
AND/OR  
CHEMISTRY  
+ GCSE  
MATHS

**FOR ADVICE ON COURSE SELECTION AND INFORMATION VISIT:**  
[WWW.IBMS.ORG/DEGREES](http://WWW.IBMS.ORG/DEGREES)

## IBMS ACCREDITED BIOMEDICAL SCIENCE DEGREES



# LIFE AS A BIOMEDICAL STUDENT

**JAMES IS CURRENTLY STUDYING AN IBMS ACCREDITED BIOMEDICAL SCIENCE BSC AT DE MONFORT UNIVERSITY, LEICESTER**

“I have always been fascinated by science, particularly when studying Biology at A level and knew I would choose a related degree.

However, I did not wish to confine myself to a specific career path at such an early stage and searched for a degree which offered diverse career options. Upon discovering the IBMS accredited Biomedical Science BSc at De Montfort University, I decided to visit an open day and was inspired by the friendly and communitive atmosphere from all academics on the course. This degree is regarded highly when viewed by prospective employers and universities alike.

I love the practical aspect of the degree as this reinforces theory from lectures through hands-on laboratory experience. I take great satisfaction from becoming proficient in conducting experiments independently and having the opportunity to work with and contribute towards an international research group, a skill I found daunting prior to attending university. Biomedical Science offers a diverse range of career paths, for example, working in the NHS, developing techniques in industry or conducting further research.”



# CAREER OPPORTUNITIES

Biomedical science offers a fantastic variety of exciting career opportunities with excellent promotion prospects including: specialist laboratory work, expert and consultant roles, research, education and management.

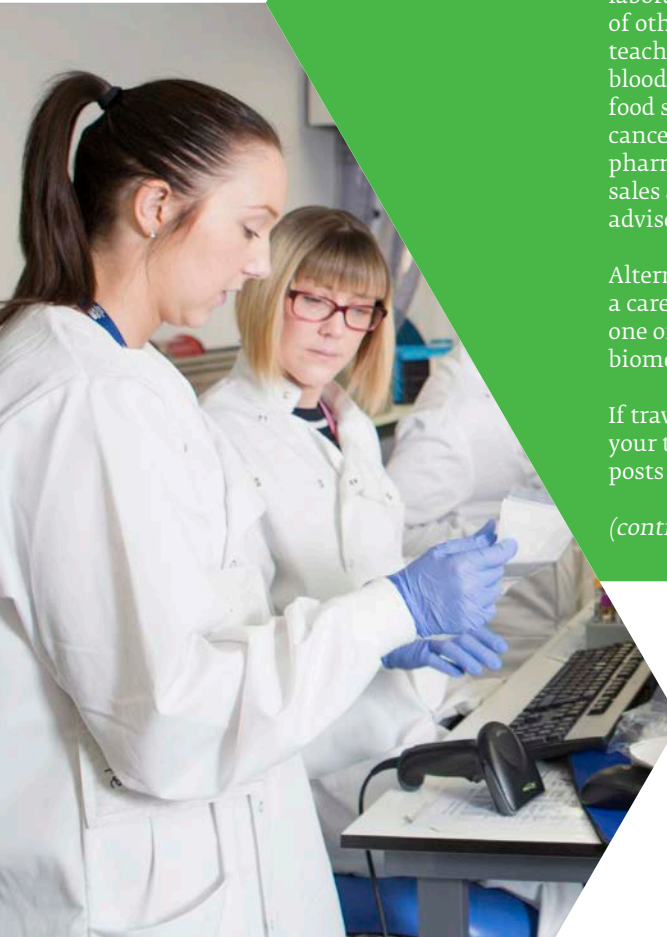
Many biomedical scientists work for the NHS or private sector. Their modern laboratories are the hi-tech hubs of hospitals and at the cutting edge of healthcare.

But if working in a general hospital laboratory isn't for you, there are lots of other avenues to explore including: teaching, drug testing, medicine, blood donation, veterinary diagnostics, food safety, the brewing industry, cancer screening, the armed forces, pharmaceutical research, journalism, sales and marketing, government advisory and many more.

Alternatively, you may decide to follow a career in research, forensic science or one of the other disciplines allied to the biomedical sciences.

If travelling is your thing, you can use your training and skills in healthcare posts and projects around the world.

*(continued overleaf)*



# CAREER OPPORTUNITIES

Biomedical scientists are highly sought after for international healthcare projects in hospitals, schools and universities. You may want to become involved in voluntary work in developing countries on behalf of international bodies such as the World Health Organization or the Voluntary Service Overseas.

For a varied and physically demanding career, the armed forces offers biomedical scientists the chance to use a variety of skills and apply them to different scenarios and settings around the world. From setting up field hospitals to deal with the Ebola outbreak in Sierra Leone to working on a battleship off the coast of Bahrain, you'll support medical teams across the armed forces with an essential clinical laboratory service.

Like any profession, you can get involved in professional activities where you can develop skills in media, politics, organising events and discussion groups, networking and professional representation and roles.

**FOR MORE INFORMATION ABOUT CAREERS IN BIOMEDICAL SCIENCE VISIT:**  
[WWW.IBMS.ORG/CAREERS](http://WWW.IBMS.ORG/CAREERS)



# WORKING IN BIOMEDICAL SCIENCE

The title '*Biomedical scientist*' is legally protected. To protect public safety, anyone using the title must meet Health & Care Professions Council (HCPC) standards and be HCPC registered.

Registration requires completion of an academic programme plus a period of training in an IBMS approved laboratory, to develop practical skills and ensure competence for patient safety. This may occur as part of an integrated degree or may be completed post-graduation. A trainee's progress and competence is recorded in a registration portfolio, which is assessed on completion of training. Trainees whose portfolios meet HCPC standards are issued with a Certificate of Competence by the IBMS and are then eligible to apply to the HCPC for registration.

Students undertaking IBMS accredited Integrated BSc (Hons) degrees (also called coterminous or applied degrees) will have this period of training built into the degree and will be eligible to apply for registration at the same time as graduation.



# SPECIALISING IN BIOMEDICAL SCIENCE

After registering as a biomedical scientist you will continue your professional development with specialist training, usually in a single discipline.

## ◆ CELLULAR PATHOLOGY

Studies tissue samples microscopically to establish the cause of illness. Tissue may be taken during surgery or at a post mortem. Diseases such as cancer are diagnosed by looking for abnormal features in tissue architecture.

## ◆ CYTOLOGY

Best known for its work in screening cervical smears, but it also provides a non-gynaecological service investigating cellular components in samples, such as sputum. Like cellular pathology, specialised techniques are used to prepare and study samples of cellular materials.

## ◆ CLINICAL CHEMISTRY

The analysis of blood and other biological fluids to help the diagnosis of diseases, such as diabetes. Clinical chemists also carry out toxicological studies, test kidney and liver functions and help to monitor therapies.

## ◆ HAEMATOLOGY

The study of blood. In this discipline, haematologists investigate the formation, composition, function and diseases of blood. Some of the diseases diagnosed in haematology are leukaemia, malaria and anaemia.



## ● IMMUNOLOGY

Deals with the conditions of the body's immune system and its role in infectious diseases, parasitic infestations, allergies, tumour growth, tissue grafts and organ transplants. It is particularly important in the monitoring and treatment of AIDS.

## ● MEDICAL MICROBIOLOGY

The study of micro-organisms such as bacteria, fungi and parasites which cause disease. It identifies organisms and establishes the antibiotic treatment required to kill them. Diseases diagnosed include: meningitis, tuberculosis and food poisoning.

## ● VIROLOGY

The study of viruses and the disease caused by them such as German measles, HIV and chickenpox. It is also involved in monitoring the effects of vaccines.

## ● TRANSFUSION SCIENCE

Identifies blood groups for blood donation, ensures the correct grouped blood is matched to the patient due to receive the donation and makes sure blood stocks are adequate for critical incidents such as road traffic accidents, operations and cancer treatments.

Biomedical science itself is an evolving science moving into new areas such as cytogenetics and molecular biology.



# POST-REGISTRATION TRAINING



Biomedical scientists can complete the IBMS specialist portfolio which recognises training, skills and knowledge gained in post-registration.

Completion of the portfolio and successful assessment will lead to a Specialist Diploma which can be taken in a range of disciplines.

There are a range of post-registration qualifications available for every stage of your career including: *Higher Specialist Diploma, Certificate of Expert Practice, Diploma of Expert Practice and the Advanced Specialist Diploma.*

**FOR MORE DETAILS VISIT:**  
[WWW.IBMS.ORG/QUALIFICATIONS](http://WWW.IBMS.ORG/QUALIFICATIONS)

# ADVANCED CAREERS



Biomedical scientists can go on to build on their knowledge with masters degrees, doctorates and professional qualifications.

These optional qualifications help to develop advanced specialist skills to adopt senior roles and responsibilities. Consultant biomedical scientists are those with the highest qualifications and expertise, reaching the top of their profession.

Biomedical scientists can also register professionally with the Science Council, which sets the standards for professional scientists in the UK and is internationally recognised as the benchmark for quality and excellence. Professional registration for biomedical scientists can be as a Registered Science Technician RSciTech, Registered Scientist RSci, or Chartered Scientist CSci.

# LIFE AS A BIOMEDICAL SCIENTIST

**HOLLY GRADUATED FROM THE UNIVERSITY OF HULL IN 2014 WITH AN IBMS ACCREDITED BIOMEDICAL SCIENCE (SANDWICH) BSC. SHE NOW WORKS AS A BIOMEDICAL SCIENTIST IN THE BIOCHEMISTRY AND IMMUNOLOGY DEPARTMENTS AT ROTHERHAM DISTRICT GENERAL HOSPITAL IN SOUTH YORKSHIRE.**

“I became interested in the field of biomedical science through friends and family who work in the profession and decided to pursue the career through an IBMS accredited degree.

The accredited IBMS Biomedical Science Sandwich degree allowed me to do a one-month placement, experiencing each of the four main departments, and a year-long placement in my chosen department of biochemistry to complete the IBMS registration portfolio.

I decided that I wanted to work in biochemistry as there is a good mix of manual, specialist testing, such as HPLC, and automated urgent work such as tests for detecting myocardial damage after a heart attack and identifying acute kidney injury. This provides a varied working environment and can impact immediate patient care based on the results produced in the laboratory.

While Biomedical Scientists and the laboratories in hospitals are often hidden away and forgotten about, it is important to remember the impact this work has daily on patient care. Without biomedical scientists working 24/7, clinicians would not be able to carefully monitor their patient's conditions and alter their care accordingly. This is why I love being a biomedical scientist and I would urge anyone considering this career to enter this exciting and evolving field of science.”



# LIFE AS A BIOMEDICAL SCIENTIST



**OLIVIA GRADUATED FROM ANGLIA RUSKIN UNIVERSITY IN 2014 WITH AN IBMS ACCREDITED BIOMEDICAL SCIENCE BSC. SHE NOW WORKS AS A BAND 5 BIOMEDICAL SCIENTIST AT THE CONQUEST HOSPITAL, EAST SUSSEX NHS TRUST**

“I became an eStudent member of the IBMS whilst I was at university and since then I have become a qualified biomedical scientist and Licentiate member.

Being a member of the IBMS has allowed me to keep a record of my CPD and provides me with activities and articles through their online journals, monthly magazines and other resources.

As competition for biomedical science jobs is high, having an edge such as CPD is not only beneficial professionally and shows initiative, but also personally, as I feel that I am constantly learning and being exposed to the ever-changing field of science from method updates to recently published research papers in various fields, not just those associated with my department or specialist area.”

# FINDING A JOB



Jobs in biomedical science are often advertised in local and national newspapers and websites or scientific journals.

Alternatively, to find your perfect role, read the IBMS magazine and website for The Biomedical Scientist which provides details of vacancies for both qualified and trainee staff.

**VISIT:** [WWW.THEBIOMEDICALSCIENTIST.NET](http://WWW.THEBIOMEDICALSCIENTIST.NET)

## WHAT IS THE IBMS?



## WHY JOIN THE IBMS?



£10  
A YEAR



The Institute of Biomedical Science is the professional body for biomedical scientists, support staff and students with 20,000 members in over 60 countries.

For more than 100 years we have been dedicated to the promotion, development and delivery of excellence in biomedical science. By maintaining the highest standards of professional qualification and practice we set the quality standards for the profession through: training, education, assessment and continuous professional development (CPD).

Joining the IBMS as an eStudent will connect you with the largest biomedical community in the UK.

Our eStudent membership provides you with the opportunities and resources you will need to help you be successful studying biomedical science, at degree level and beyond.

For just £10 a year you will receive:

- Online subscription to our leading monthly *The Biomedical Scientist* magazine and dedicated website. Featuring access to cutting-edge scientific articles, the latest biomedical news and vacancies.
- Access to exclusive website content for members only. Including CPD, resources, careers advice and placement guides, CV tips and support.
- Use our specialist forums to network with members and ask important biomedical questions and advice.
- Discounts to IBMS events and free access to our bi-annual Congress event for students.

**FOR MORE INFORMATION VISIT:**  
[WWW.IBMS.ORG/ESTUDENT](http://WWW.IBMS.ORG/ESTUDENT)

# SUPPORTING STUDENTS FURTHER

The IBMS operates a scheme with university affiliated biomedical societies, enabling us to offer students additional benefits.

Including:

## ◆ SUPPORT FOR YOUR EVENT

From sending promotional material to help finding speakers, we support society events throughout the UK.

## ◆ GET YOUR MESSAGE OUT

We promote society news and events through our extensive digital networks: website, social media channels and newsletters.

## ◆ OPPORTUNITIES TO INPUT ON OUR GUIDANCE MATERIALS

We're always looking at ways to improve our careers advice, communications and website content for students.

## ◆ CONNECT WITH IBMS REGION AND BRANCHES

Offering opportunities for local members to attend and support society events and for networking.

## ◆ LINK WITH A BIOMEDICAL COMPANY

We can connect you with leading biomedical companies, keeping you up-to-date with technology and providing a link for employment.

## ◆ PAY LESS FOR MEMBERSHIP

We offer a 10% discount on our eStudent membership for all society members.

**FOR FURTHER  
INFORMATION  
ABOUT THE  
IBMS VISIT:  
[WWW.IBMS.ORG](http://WWW.IBMS.ORG)**

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