

# CLINICAL PHARMACOLOGY BSC (HONS)

*Undergraduate Study*

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# CLINICAL PHARMACOLOGY BSc (HONS)

Clinical pharmacology is the science of designing and testing medicines for use in humans. Clinical pharmacologists work at the meeting point between the laboratory and clinic, developing laboratory discoveries into medicines and identifying clinical problems that need investigation in the laboratory. Our clinical pharmacology programme is designed to provide you with a broad understanding of how drugs are developed, from the discovery of molecules to the treatment of patients. It will equip you with the knowledge and skills to enter a career in the life sciences, working in industry, academia or healthcare, particularly in the development of new medicines.

“The opportunities within Pharmacology at St George’s are endless... due to the global reach of the academics and lecturers at St George’s, all of whom are highly respected within their fields internationally.”

HENRY ASKEW PAGE,  
GRADUATED BSc  
AND PhD STUDENT

St George’s is the UK’s only dedicated healthcare sciences university, sharing a campus with one of the largest hospitals in London. With more than 250 years of excellence in education and research, our courses will give you the experience you need to succeed.

## 1<sup>ST</sup> FOR GRADUATE PROSPECTS IN THE UK

(The Times and Sunday Times  
Good University Guide 2019)

### WHY STUDY THIS COURSE?

- A course designed in collaboration with employers that will truly prepare you for the world of work
- An exciting learning experience, combining high quality teaching and action learning
- An option for a professional year between years 2 and 3 to develop your experience and CV
- A friendly environment and great student support, designed to help you be the best you can be
- Excellent facilities on a campus shared between the university and one of the UK’s largest teaching hospitals

**COURSE DURATION:** Three years, full-time

### WHAT WILL YOU LEARN?

Over the course of the programme, you will study six main topics:

- **Fundamentals of science:** the human biology needed to understand and learn pharmacology
- **Pharmacokinetics:** how the body handles drugs
- **Pharmacodynamics:** how drugs exert their effects on the body
- **Drug development and clinical trials:** how drugs are discovered and developed as medicines
- **Drugs in healthcare:** how information from clinical trials and drug development is used to guide the use of medicines for patients in clinical practice
- **Data and statistics:** how to analyse and interpret research data relating to drugs

### YOU WILL DEVELOP SKILLS IN:

- **Clinical trials research:** to be able to recruit, investigate and look after people taking part in clinical trials
- **Laboratory research:** to be able to conduct experiments in a pharmacology laboratory
- **Verbal communication:** to give presentations, debate and discuss pharmacology with different audiences
- **Written communication:** to write documents required for the conduct and reporting of research
- **Reflection and personal development:** to reflect on experiences and seek opportunities for learning
- **Team working:** to work well with others to achieve a goal
- **Project management:** to plan, lead and manage delivery of projects





## HOW WILL YOU LEARN?

We will use a variety of teaching and learning approaches to help you develop your knowledge and skills:

- **Hubs:** You will test your understanding of each week's learning and develop your team working and presentation skills.
- **Interactive lectures:** you will learn core information and key concepts and have the opportunity to test your understanding and ask questions.
- **Practical classes:** you will learn clinical and laboratory research skills in weekly practical classes.
- **Computer workshops:** each week you will work with data, some of which you will generate yourself in practical classes and through projects. You will learn how to use data to answer questions and how to do statistical analysis.
- **Workshops:** These will use a combination of talks and team working to study key topics in more detail.
- **Drug-based learning:** You will be set problems including clinical cases and research questions and find solutions to these in small groups.

Learning will be supported by excellent online course material and a strong teaching faculty. You will have a regular hub tutor to support your learning needs and a personal tutor for general support.

## HOW IS THE COURSE PLANNED AND ASSESSED?

The topics and skills are revisited several times over the three years of the course with increasing complexity to build your understanding and capabilities:

**YEAR 1.** This will give you a good introduction to and overview of each topic and a strong grounding in the skills you will need. You will be assessed by in-course quizzes, an end of year exam and the first stage of your skills portfolio.

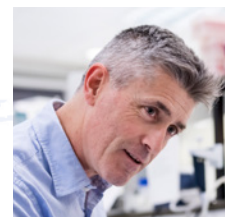
**YEAR 2.** For the first half of the year you will study topics in more depth and build your skills, ending with an end of semester exam. For the second half of the year you will do a practical research project, build your workplace skills and spend time with employers. You will continue to develop your skills portfolio.

**PROFESSIONAL YEAR.** There will be an option for a professional year between years 2 and 3 to develop your experience and CV.

**YEAR 3.** A 'hot topics' module about cutting edge drug developments, such as biological drugs, nanotechnology and gene therapy, and a written research project are compulsory. Otherwise you will choose modules that interest you and support your career plans. All year 3 modules are assessed by in-course assessment and exams. You will complete your portfolio and graduate with a skills certificate that demonstrates your competence to employers.



**EMMA BAKER**  
PROFESSOR  
OF CLINICAL  
PHARMACOLOGY



**IAIN GREENWOOD**  
PROFESSOR  
OF VASCULAR  
PHARMACOLOGY

## OUR COURSE TEAM

Clinical Pharmacology course co-directors are Professor Emma Baker, Professor of Clinical Pharmacology, and Professor Iain Greenwood, Professor of Vascular Pharmacology.

**Professor Baker** is currently the Clinical Vice-President of the British Pharmacological Society (BPS) and is a member of the Clinical Pharmacology Skills Alliance. She is a National Teaching Fellow of the Higher Education Academy and has received many student-selected teaching awards.

**Professor Greenwood** was the inaugural recipient of the BPS Zaimis prize in 2017 for sustained commitment to the teaching of pharmacology at an outstanding level.

Other key course faculty include Dr Mark Preece, Senior Lecturer in Pharmacology, Dr Lila Mayahi, Consultant in Clinical Pharmacology, Dr Dan Burrage, Senior Lecturer in Clinical Pharmacology and Dr Chris Threapleton, Specialist Registrar in Clinical Pharmacology.

Pharmacology teaching at St George's is consistently recognised as excellent in the national student survey. Feedback includes: *'Amazing clinical pharmacology team delivering very helpful teaching'* and *'Pharmacology teaching is fantastic and very well run'*. Being situated in a large university which interfaces with one of the UK's largest single site teaching hospitals, the course has a large pool of experts outside the course team to draw from for its teaching programme. Visiting lecturers also come into the university from industry and healthcare to provide an employer perspective.

*Motivated by curiosity*

## CLINICAL PHARMACOLOGY AND YOUR CAREER

'Opening the door to a great career in the design, testing and use of medicines for the benefit of patients.'

There is a huge need for trained and skilled people to work in drug development and research. The Association of the British Pharmaceutical Industry (ABPI), which represents large, medium and small companies developing new medicines, has described the clinical pharmacologist as one of 'four scientists that save the world every day' and said that the UK needs more of them.

### Where could I work?

There are many different employers who need work-ready graduates in clinical pharmacology. These include:

**Pharmaceutical companies:** Large, medium or small companies who are discovering new drugs and developing them as medicines.

**Contract research organisations (CRO):** Companies set up to run clinical trials and manage processes and regulatory requirements for pharmaceutical companies.

**Regulatory bodies:** Organisations that regulate the conduct of clinical trials and development and marketing of new medicines.

**Healthcare:** NHS patients are recruited and studied in clinical trials in clinical trials units in hospitals. NHS research is run by a large organisation called the National Institute for Health Research.

**Universities:** A lot of research into new medicines is done by academics in universities.

### What could I actually do?

Here are some examples of different jobs that you could do after you qualify. Some you could start straight away, others will need more study such as a Masters or PhD. While studying for postgraduate qualifications you could earn about £14,000. Starting salaries are around £25,000 once graduated.



## WORKING FOR A PHARMACEUTICAL COMPANY

**Clinical pharmacologist:** Designs clinical studies and trials, interprets results and makes decisions at each step of the drug development pathway. Works in an office, may travel and could work abroad.

**Laboratory scientist:** Does experiments to discover new medicines. Works in a research laboratory, could work abroad.

**Pharmacometrician:** Uses computer modelling and simulation to learn more about drugs from data collected in clinical trials and answer questions, for example about what dose of a drug to use in people. Works at a computer and in teams.

**Marketing and sales:** Works in teams and on the road to get new medicines into the market.

## WORKING IN A CLINICAL TRIALS UNIT (such as a CRO or healthcare)

**Clinical trials coordinator:** Manages the process of delivering clinical trials, translating research plans (protocols) into practice. Works in an office and liaises with lots of different teams.

**Research associate:** Recruits people into trials, makes clinical measurements, collects data, works with people in the clinic.

**Data manager:** Makes sure that the right data is collected during clinical trials and that it is accurate, works at a computer and in teams.

**Trial monitor:** Oversees the delivery of clinical trials and checks they are done properly. Works with different clinical trial teams, may travel.

## OTHER CAREERS

There are lots of other careers you could consider with a BSc in clinical pharmacology. These include working in the third sector, for example with science charities, scientific journals and publications, or scientific writing. You could also work in healthcare as a technician, manager or in procurement, for example.



## ENTRY CRITERIA 2019

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### GCSEs

**Grades:** Grade 6 / B or above in a minimum of five subjects.

**Subjects:** Five subjects which must include English Language and Maths with Biology and Chemistry. Alternatively, we will accept double award Science.

**Additional information:** We do not accept Adult Literacy and Numeracy or Functional Maths instead of GCSEs.

### A LEVELS

**Grades:** ABB

**Subjects:** Three subjects, including Biology or Chemistry. General Studies and level 3 Key Skills are not accepted.

**Adjusted criteria:** Certain students may be eligible to receive an adjusted A Level offer. For more information visit [sgul.ac.uk/clinpharm](http://sgul.ac.uk/clinpharm)

**Additional information:** Resits. We will consider your application if you are re-sitting your A levels (including AS Levels and modular resits) over 3 years. However, you will be required to achieve higher grades. Re-sit applications will be assessed on an individual basis, as offers may be dependent on achieved Biology and Chemistry grades. Any re-sit grades will supersede previous grades.

### INTERNATIONAL BACCALAUREATE

**Award:** Full Award Diploma

**Scores:** Overall score of 34

**Subjects:** 16 points at Higher Level including both Biology and Chemistry, with a minimum of 5 in one and 6 in the other.

At Standard Level, a minimum score of 5 must be in Maths (or Maths Studies) and English Language if you have not achieved GCSE / IGCSE Maths and English at grade 6 / B.

### ACCOMMODATION GUARANTEE

We are pleased to guarantee accommodation at our halls of residence, Horton Halls, for students who accept their place at St George's by 1 August 2019.

For more information visit [sgul.ac.uk/study/accommodation](http://sgul.ac.uk/study/accommodation)

**PLEASE CONTACT [STUDY@SGUL.AC.UK](mailto:STUDY@SGUL.AC.UK) WITH ANY ENQUIRIES, OR VISIT [SGUL.AC.UK/CLINPHARM](http://SGUL.AC.UK/CLINPHARM) FOR MORE INFORMATION**