

PROGRAMME HANDBOOK FOR PHARMACOLOGY & INNOVATIVE THERAPEUTICS

BSc DEGREE PROGRAMME

Academic Year 2019/20

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(1) WELCOME & OVERVIEW

Welcome to the William Harvey Research Institute (WHRI), Bart's & The London School of Medicine & Dentistry (SMD), to the School of Biological & Chemical Sciences (SBCS), and specifically to the Pharmacology & Innovative Therapeutics BSc degree programme.

Pharmacology is the study of the action of drugs and medicines and their effects on living systems. Therapeutics is the use of medicines to treat or prevent illness. With this Pharmacology & Innovative Therapeutics degree we offer you a curriculum which will give you a broad understanding of drug action through to the processes involved in the eventual translational of basic science into new (innovative) medicines. Students study cell biology, molecular biology, physiology, biochemistry, tissue biology and genetics and gain an in-depth knowledge into pharmacology through modules such as drug target identification, clinical pharmacology, business of pharmacology, drug design, and clinical trials. Elective modules include immunology, genetics, neuroscience, cancer biology and stem cells and regenerative medicine. The programme is co-taught by the SMD and SBCS bringing together the core strengths of both schools. The pharmacology modules are taught by world-leading experts at the WHRI.

<https://www.qmul.ac.uk/whri/> Students will gain free membership of the 'British Pharmacological Society. <https://www.bps.ac.uk/>

Our graduates follow diverse career paths. Some have entered medicine, dentistry and health-related professions; some have joined biotechnology and pharmaceutical companies; others have entered the scientific community by working in a research lab or continuing their studies at postgraduate level; some pursue professional careers outside of science. The knowledge and skills you gain during your degree have the potential to open many doors.

I hope that you find this programme handbook useful and that, over the next 3 years, you find your undergraduate degree to be as enjoyable as it is educational. I hope that you will make the most of the opportunities for personal and professional development offered by the wide range of compulsory and elective modules that build on the breadth of expertise offered by academic colleagues at the WHRI as well as other institutes within SMD and SBCS.

In closing, may I reiterate my welcome to QMUL, to SMD, to SBCS, to WHRI and specifically to the Pharmacology & Innovative Therapeutics BSc degree programme. All of the staff involved in your degree wish you good luck with your studies and we look forward to supporting your personal and career aspirations over the course of your degree and, beyond that, when you graduate and become an alumnus of QMUL.



Dr Sadani Cooray

Programme Director, BSc Pharmacology & Innovative Therapeutics

September 2019

(2) KEY NAMES & CONTACTS

ROLE	NAME	EMAIL ADDRESS
Programme Director	Dr Sadani Cooray	s.n.cooray@qmul.ac.uk
Programme Administrator (based in WHRI)	Miss Bijal Tailor	b.tailor@qmul.ac.uk
Programme Tutors:	Dr Richard Grose Prof Lucinda Hall	r.grose@qmul.ac.uk l.hall@qmul.ac.uk
Director of Teaching & Learning (DTL) [Biomedical Sciences]	Dr Jayne Dennis	Jayne.dennis@qmul.ac.uk
Academic Advisor	Dr Sadani Cooray Dr Egle Solito Dr Peter King Prof Patricia Munroe Dr Dianne Cooper	s.n.cooray@qmul.ac.uk e.solito@qmul.ac.uk p.j.king@qmul.ac.uk p.b.munroe@qmul.ac.uk d.cooper@qmul.ac.uk
Student Support Officer (based in Mile End, SBCS)	Ms Shaheda Batha	s.batha@qmul.ac.uk
Head of Undergraduate Science Teaching, SMD	Prof Lucinda Hall	l.hall@qmul.ac.uk
Director of Taught Programmes (DTP)	Dr Chris Bray	c.bray@qmul.ac.uk

(3) PROGRAMME AIMS

The overall vision and aim of the Pharmacology and Innovative Therapeutics BSc degree is to support you in developing a multidimensional understanding of drug discovery right the way through from scientific advances in basic research to the processes involved in the development of new medicines, preclinical development tests as well as clinical trials, marketing authorisation medicines regulators, post-authorisation surveillance, drug utilisation and medicines access. This will be delivered through collaborative participation of academia, biotech companies and the pharmaceutical industry.

You will gain a solid foundation in all key areas of biomedical sciences and an in-depth knowledge and understanding into the principles of therapeutics, drug design, target identification and validation, along with an understanding into the many processes involved in drug development for therapeutic use.

The commercial collaborations will expose you to the novel breakthrough therapies in areas including vaccines, oncology, cardiovascular, metabolic diseases, pain and neuroscience, inflammation and immunology as well as rare disorders. You will also gain an awareness into issues faced by stakeholders including the pharmaceutical industry, healthcare providers, patients, and regulators, for example, drug shortages, targeted/personalised drugs, use of biomarkers, clinical trial design, drug safety, risk/benefit assessments, collaboration between patients, academia, industry and the regulatory community, international collaborations, relevant legislation, policy and bioethics, novel tools for scientific/clinical communication and sustainability of innovation/financial models for product development/pricing, and marketing authorisation requirements.

The programme will address skills requirements for:

- Progression to medical and dental degree courses and professions allied to medicine.
- Employment in hospital biomedical science laboratories.
- Academic and clinical research.
- Employment in biotechnology, pharmaceutical, and microbiology based industries.

More broadly, the BSc degree also aims to:

- Provide a rational, flexibly structured and coherent programme of study which is relevant to the needs of employers, facilitates your professional development and lays the foundations for a successful career which is to the benefit of the economy and society;
- Provide a sound knowledge base in the fields studied and develop key transferable skills in the areas of communication, numeracy, information technology, working with others, problem solving, time and task management;
- Foster the development of an enquiring, open-minded and creative attitude, tempered with scientific discipline and social awareness, which encourages lifelong self-directed learning.

(4) WHAT WILL YOU BE EXPECTED TO ACHIEVE?

A c a d e m i c C o n t e n t	<p>On successful completion of your BSc programme, you are expected to:</p> <ol style="list-style-type: none"> 1. Demonstrate knowledge of a broad range of topics including biochemistry, genetics, cell biology and human molecular biology to help facilitate understanding of how drugs work at molecular and functional levels. 2. Demonstrate knowledge and understanding of pharmacological facts, terms, methods, concepts, principles and relationships and to appreciate their importance. 3. Demonstrate knowledge into innovative breakthrough therapies and understanding of the processes involved in translation of scientific discoveries through basic research into new medicines including knowledge in preclinical development tests, clinical trial design and governance and regulatory approval. 4. Demonstrate awareness into issues faced by the multiple stakeholders in the innovative drug development process. 5. Apply cutting edge knowledge and acquired scientific skills as a precursor to research in pharmacology, a career in the pharmaceutical industry, work within a clinical healthcare environment or at a government regulatory body.
D i s c i p l i n a r y S k i l l s	<p>On successful completion of your BSc programme, you will be able to:</p> <ol style="list-style-type: none"> 1. Apply pharmacology knowledge and principles together with problem solving skills in a wide range of theoretical and practical situations. 2. Conduct practical work with good laboratory practice efficiently and with due regard for safety to acquire sound scientific data. 3. Critically evaluate scientific data including the methodology by which they were obtained, statistical analysis used and evaluate and interpret the results of controlled experiments. 4. Retrieve, filter and collate pharmacological data from a variety of information sources. 5. Prepare scientific/technical reports.

A t t r i b u t e s	<p>On successful completion of your BSc programme, you will be able to:</p> <ol style="list-style-type: none"> 1. Communicate effectively by written and/or verbal means. 2. Demonstrate capacity for independent learning, and to work independently. 3. Participate constructively as a member of a group/team, with skills to influence, negotiate and lead. 4. Assess the relevance, importance and reliability of the ideas of others and of different sources of information. 5. Use basic software programs for the manipulation and analysis of quantitative data. 6. Articulate the role and impact of science in society, including the global perspective. 7. Use information for evidence-based decision-making and creative thinking.
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(5) HOW WILL YOU LEARN?

(See also Section 6 “What is independent Study” and Section 8, “How is the programme structured?”)

You will acquire knowledge and develop your understanding mainly through lectures and directed independent study. Workshops will reinforce knowledge acquired in lectures and provide opportunities for application of your knowledge to solving problems. Your understanding will be reinforced through a combination of tutorial workshops, problem classes, laboratory classes and e-learning (depending upon the modules you study), including regular feedback on submitted work. Additional learning support is provided through Queen Mary's online learning environment (called QMplus) and our IT facilities.

Practical skills will be taught as part of organised practical classes during the early stages of the programme. Each practical class is likely to be repeated two or more times in the same week. You will be allocated (randomly) to a specific practical group to attend the practical class on a given date/time. If you are unable to attend on the assigned date/time (*e.g.* if you are allocated to a Wednesday afternoon, but have sports commitments, or if you are allocated to a Friday afternoon but need to attend jumah or to get home before shabbat), you are required to (a) negotiate a swap with a fellow student from a different group and then (b) email the Module Organiser with details of that swap (confirming who you will be swapping with). If you are unable to negotiate a swap for an assessed practical class, you may be able to submit a claim for extenuating circumstances form (this form can be found on QMplus) provided the reason for non-attendance is (i) unforeseeable and (ii) beyond your control, and you can provide documentary evidence to support your application.

Workshops will reinforce knowledge acquired in lectures and provide opportunities for application of such knowledge to the solution of real problems. Advanced practical skills and specialised analytical skills are then developed during the project component of the third year. The third year also includes critical analysis through project development and tutorial led journal clubs and discussion forums.

Queen Mary's graduate attributes are developed in a progressive fashion, but most notably in modules such as BMD153 Causes and prevention of Disease and BMD271 Business of Pharmacology. The project module provides further opportunities for the development of transferable skills and other aspects of these attributes.

(6) WHAT IS “INDEPENDENT STUDY”?

For every hour of contact with academic staff, you will be expected to devote between 3 and 5 hours to independent study. This may include staff-directed exercises (*e.g.* completion of coursework assignments) or self-directed independent study. There are various forms of independent study which include:

- preparation in advance of a lecture/tutorial/workshop/practical class
- consolidation of material introduced by the lecturer/tutor (*e.g.* writing up your lecture notes)
- elaboration / extension (*e.g.* reading around the topic after the lecture)
- application (*i.e.* reinforcing your understanding of a topic by applying any principles introduced in a lecture/tutorial/practical class to a new scenario)

You might be expecting to prepare and consolidate, since these activities most closely resemble the “homework” for Secondary/Further Education. However, to succeed in your undergraduate degree at university, you will have to make time to elaborate/extend and apply new knowledge in order to develop the depth of understanding required if you are to be recommended for first or upper second class honours.

(7) HOW WILL YOU BE ASSESSED?

For each module that comprises your pharmacology degree, your knowledge and understanding will generally be tested through a combination of assessed coursework and unseen written examinations. For the majority of modules, the coursework:exam weighting will be as follows:

	Coursework	Exam
Year 1	25%	75%
Year 2	25%	75%
Year 3	20%	80%

For some modules, a higher proportion of marks will be derived from the coursework, and in extreme cases (*e.g.* the final year research projects), the module will be assessed by coursework only with no written exam. (Please check the module details on QMPlus to confirm the exact coursework:exam weighting for each module.)

The exact nature of the coursework varies from module to module and may include work in the form of laboratory experiment write-ups, essays and/or problem sheets. The coursework mark may also include a contribution from computer-based assessments and in-course tests. Specific modules (if taken) include assessed oral examinations, oral presentations and extended reports/dissertations.

Transferable skills are developed in a contextual manner throughout the teaching and learning programme, and are indirectly assessed as part of the normal assessment processes for the programme. For example, the assessment of the projects includes consideration of data-retrieval skills, report-writing skills and presentational skills.

Practical skills are assessed through in-class observation and through written laboratory reports, which often include attention to quantitative accuracy. The assessment of the final year practical research project also addresses the majority of the professional disciplinary skills that students of this programme are expected to acquire.

Commencing in the 2019-20 academic year, QMUL will have two main exam periods. The first period, lasting two weeks, will take place in January and will assess modules completed in Semester A. The second exam period, predominantly in May, will last four weeks and will include exams for modules completed in Semester B and year-long modules. The exam timetable will be released to students in approximately week 10 of each semester.

The default exam durations and structures also differ between years, as follows:

	Default exam duration	Number of sections	Section A	Section B	Section C
Year 1	1.5 hours	2	Multiple Choice Questions (50% of mark)	Short Answer Questions (choice of 1 from 2) (50% of mark)	N/A
Year 2	2 hours	3	20 Multiple Choice Questions (25% of mark)	Short Answer Questions (choice of 1 from 2) (25% of mark)	Essay (choice of 1 from 3) (50% of mark)

Year 3	3 hours	3	25 Multiple Choice Questions (34% of mark)	Essay (choice of 1 from 3) (33% of mark)	Essay (choice of 1 from 3) (33% of mark)
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Students do not automatically progress into the second year of their degree.

To progress beyond Year 1, you must pass at least six 15-credit modules (*i.e.* 90 credits in total). To progress beyond Year 2, you must pass at least 195 credits cumulatively from Year 1 and 2 modules. To graduate with a BSc degree, you must pass at least 315 credits across your 3 year programme.

In the Pharmacology & Innovative Therapeutics programme, the threshold for passing a module is a final module mark over 40%, derived from the exam and/or coursework in the specified ratio. If you fail a module, you have one resit opportunity. The resit is usually an exam which supersedes all previous assessment, including coursework assessments (*i.e.* only the resit exam mark is counted). Additionally, the resit mark is capped at 40% which means that if you score higher than 40% in the resit exam then your mark will be recorded as 40% only. Resit exams take place in the Late Summer Exam period, which is usually the first two weeks in August.

(8) ACADEMIC INTEGRITY

Academic honesty is a very important consideration in this course and in your university career. We take a zero-tolerance approach to any form of academic dishonesty and misconduct, including but not limited to plagiarism, collusion, cheating (*i.e.*, providing or receiving unauthorized assistance on assignments or exams), and impersonation. It is your responsibility to be aware of the rules and policies associated with academic dishonesty. The University's Academic Misconduct Policy and Regulations for Assessment Offence can be found on the QMUL website.

At QMUL, any instance of academic dishonesty or negligence must be reported confidentially to the department's Plagiarism Officer, who follows procedures outlined by the university.

(9) HOW IS THE PROGRAMME STRUCTURED?

In each academic year, you must study 120 credits (such that you study a total of 360 credits over the course of your 3 year BSc). It is strongly recommended that where elective modules are available, you should select a total of 60 credits to study in Semester A and a total of 60 credits in Semester B. (If you wish to study more credits in one or other Semester, you should discuss this with your Academic Advisor and then with the Programme Director, Dr Sadani Cooray, before making your pre-selection. You may not enrol for more than 75 credits in any given semester.)

To assist your choice of electives most appropriate to your interests and career aspirations, we want you to have every opportunity to research the elective modules available to you prior to module pre-selection (9th March 2020 to 14th April 2020). We will provide you with published information (or videocasts) that outline the module content and in Semester B, we will also organise a "Module Elective Fair" at which you can meet with Module Organisers and senior

students who have studied each module to ask any questions about elective modules that you might wish to take in the next academic year.

Please note that some elective modules have to operate caps on the maximum number of students that the module can accommodate, *e.g.* field-based modules where a finite number of students can be accommodated in the field station. In this case, acceptance on to a module with capped numbers may be contingent on your academic performance prior to the point of module selection (typically your Year 1 academic performance).

The modules listed in the programme outline which follows are indicative only. Every effort will be made to run all of the modules advertised in the degree programme outline. However, to offer you the best educational experience while at QMUL, in any one year, a module advertised on the following pages may not be offered if:

- (a) the numbers of students eligible to select a particular module (either too many or too few) would provide you with a compromised student experience;
- (b) academic staff with the requisite experience are unavailable to teach a module (*e.g.* through ill health, injury or retirement)

Likewise, dependent on staff availability and appropriate quality assurance, we may be able to add new modules to subsequent years of your degree programme and improve even further your choice of elective modules.

In the programme outline provided on the following pages, compulsory modules are denoted in standard text whereas elective modules are denoted in *italicised* text. The credit value of each module is denoted in parentheses.

	SEMESTER A	SEMESTER B
Y e a r 1	<p>BMD111 Chromosomes & Gene Functions (15)</p> <p>BMD115 The Human Cell (15)</p> <p>BMD153 Causes and Prevention of Disease(15)</p> <p>BMD175 Research Skills for Pharmacologists (15)</p>	<p>BMD121 Biomedical Physiology I (15)</p> <p>BMD123 Biomolecules of Life (15)</p> <p>BMD171 Introduction to Pharmacology (15)</p> <p>BMD181 Tissue Biology (15)</p>

Y e a r 2	<p>BMD211 Human Molecular Biology (15) BMD221 Biomedical Physiology II (15) BMD275 Drug Target Identification (15) <i>BIO227 Human Genetic Disorders (15)</i> BMD261 Cellular & Molecular Neuroscience (15)</p>	<p>BMD269 Infection, Immunology & Inflammation (15) BMD271 The Business of Pharmacology (15) BMD273 Clinical Pharmacology & Assessment of Drug Safety (15) <i>BIO263 Membrane & Cellular Biochemistry (15)</i> BMD223 Essential Biochemistry for Human Life (15)</p>
	<p>SMD5251 Engaging the Public in Science</p>	
Y e a r 3	<p>BMD375 Translational Pharmacology & Innovative Therapeutics (15) BMD377 Classic Papers & Current Topics in Pharmacology (15) <i>BIO323 Human Genetics & Genomics (15)</i> BMD351 Advanced Immunology (15) BMD363 Stem Cells & Regenerative Medicine (15)</p>	<p>BMD359 Drug Design for Pharmacologists (15) BMD378 Clinical Trials & Regulatory Affairs (15) <i>BMD365 Biomarkers in Neuroscience (15)</i> BMD381 Cancer Biology (15) BMD383 Molecular Basis of Personalised Medicine (15)</p>
	<p>BIO603 Project Skills in the Life Sciences (30) OR BMD670 Research Project in Pharmacology (30)</p>	

Year 1: All Year 1 modules are compulsory to ensure that all students on the degree programme have the requisite understanding to prepare them for Years 2 and 3 of the degree programme.

Year 2: Six of the Year 2 modules (90 credits) are compulsory:

BMD211 (Human Molecular Biology) BMD221 (Biomedical Physiology II), BMD269 (Infection, Immunology & Inflammation), BMD271 (The Business of Pharmacology), BMD273 (Clinical Pharmacology & Assessment of Drug Safety) and BMD275 (Drug Target Identification). This will leave you with a choice of 2 elective modules (30 credits) from 5 potential electives.

Year 3: There are 4 compulsory, 15 credit Year 3 modules: BMD359 (Drug Design for Pharmacologists), BMD375 (Translational Pharmacology & Innovative Therapeutics), BMD377 (Classic Papers & Current Topics in Pharmacology) and BMD378 (Clinical Trials & Regulatory Affairs). In addition, you must select one of the two 30 credit modules: either BMD670 (Research Project in Pharmacology) or BIO603 (Project Skills in the Life Sciences). In order to have a free choice between these two 30 credit options, you will need to perform well in Year 1 of your degree, typically scoring in excess of 65% (if not 70%) in each of your Year 1 modules. If you are not above the 70th centile for Year 1 average marks, you will have to study BIO603 in Year 3. This leaves you with a choice of 2 elective modules (30 credits) from 6 potential electives.

(10) HOW DO WE LISTEN AND ACT ON YOUR FEEDBACK?

You are strongly encouraged to provide informal feedback to Module Organisers and/or to the Programme Director where you can see a way that your teaching could be significantly improved or you have cause for complaint, or you wish to highlight a good or particularly effective feature of a module. If you feel uncomfortable approaching a Module Organiser and/or Programme Director, you can also make any suggestions/raise any concerns by email to: sbcs-studentvoice@qmul.ac.uk. This email address is monitored daily by several colleagues so you can reasonably expect a response within 3 working days.

The Student-Staff Liaison Committee (SSLC), Chaired by the Director for Student Experience, Dr Caroline Brennan, provides a formal means of communication and discussion between the School and its students. The committee consists of elected student representatives from each year of each SBCS and SMD undergraduate degree programme, together with appropriate representation from staff within both SBCS and SMD. SSLC is designed to respond to the needs of students, as well as act as a forum for discussing programme and module developments. The SSLC meets regularly throughout the year.

The SMD Science & Undergraduate Teaching & Learning (SUTL) Committee advises the Head of Undergraduate Science Education for SMD, Professor Hall, on all matters relating to the delivery of taught programmes at school level, including monitoring the application of relevant QM policies and reviewing proposals for module and programme approval and amendment before submission to Taught Programmes Board (TPB). The SBCS Teaching & Learning Committee (TLC) performs equivalent roles, advising the Director of Taught Programmes (DTP) in SBCS, Dr Chris Bray who works very closely with Professor Lucinda Hall and with the Programme Director, Dr Sadani Cooray, to ensure that all student concerns are identified, shared, and acted upon, as appropriate. Student views are incorporated into the work of both SUTL and TLC in a number of ways, such as through consideration of student surveys and input from the SSLC.

All schools/institutes operate an Annual Programme Review (APR) of their taught undergraduate and postgraduate provision. APR is a continuous process of reflection and action planning which is owned by those responsible for programme delivery; the main document of reference for this process is the Taught Programmes Action Plan (TPAP) which is the summary of the school/institute's work throughout the year to monitor academic standards and to improve the student experience. Students' views are considered in this process through analysis of the National Student Survey (NSS), Queen Mary Student Survey (QMSS) and module evaluations.

(11) ACADEMIC SUPPORT

You will be provided with a personal tutor, referred to as an Academic Advisor, who will be your main point of contact throughout your whole programme for advice on general academic matters and assistance with pastoral concerns, i.e. personal issues which may impact on your ability to study. When you need to meet with your Advisor, you can schedule an appointment via email. (Note that we no longer operate a drop-in system of "office hours" since all advisees may have very different patterns of availability dependent on their choice of elective modules.)

If your Advisor is unavailable or cannot help with a specific problem, other sources of support are Programme Tutors and the Student Support Officer (SSO). Programme tutors are experienced

Academic Advisors; the Student Support Officer is not a member of teaching staff and can offer advice or point you towards a person or service that can help you. The SSO is also the person you need to speak to regarding any extenuating circumstances you may have for your assessments.

The Schools also operate a Peer Assisted Study Support (PASS) programme for peer guidance. PASS is a subject-based mentoring scheme, run for first-year students by higher-year undergraduates.

Learning Development offers students practical guidance in developing insights and practices that will contribute to their success whilst at Queen Mary. Learning Development works with students on an individual basis and in groups. They can help you with interpreting feedback on your assignments, general study advice, developing written skills, referencing sources in essays and much more. They also have a range of resources available on their website.

(12) SPECIFIC SUPPORT FOR DISABLED STUDENTS

Queen Mary has a central Disability and Dyslexia Service (DDS) that offers support for all students with disabilities, specific learning differences and mental health issues. The DDS supports all Queen Mary students: full-time, part-time, undergraduate, postgraduate, UK and international at all campuses and all sites.

Students can access advice, guidance and support in the following areas:

- Finding out if you have a specific learning differences like dyslexia
- Applying for funding through the Disabled Students' Allowance (DSA)
- Arranging DSA assessments of need
- Special arrangements in examinations
- Accessing loaned equipment (e.g. digital recorders)
- Specialist one-to-one "study skills" tuition
- Ensuring access to course materials in alternative formats (e.g. Braille)
- Providing educational support workers (e.g. note-takers, readers, library assistants)
- Mentoring support for students with mental health issues and conditions on the autistic spectrum.

(13) ADVICE AND COUNSELLING

Queen Mary has an Advice and Counselling Service (ACS), based in Geography Square (Mile End campus), that offers support for all students at all stages of their degree studies. The full range of services offered by the ACS is detailed on their website (www.welfare.qmul.ac.uk). On this website, you will find a series of self-help and guidance booklets covering such diverse issues as adapting to

life as a student at university through making a claim for extenuating circumstances to requesting an interruption of studies or withdrawing.

(14) CHANGE OF PROGRAMME

You may request a single Change of Programme during your degree.

Should you wish to be considered for a Change of Programme (CoP), either within SMD/SBCS or out of the Schools, you will need to complete a CoP form, available from the SBCS reception.

Before signing and submitting your form you should meet with your Academic Advisor or a Programme Tutor to discuss the pros and cons of switching programmes. Please note that there are deadlines during the academic year by which a CoP should be submitted, depending on the implications for entry to examinations and studying the necessary modules in each semester: your academic advisor and/or the Student Support Office can advise you on these deadlines.

Once completed you should return the completed and signed form to the SBCS reception to be considered and, if possible, approved by Dr Bray as the SBCS DTP. As soon as a decision has been reached, you will be emailed and advised of the outcome of your application by the SBCS SSO. Approval will be contingent on (a) there being places available on the programme onto which you would like to transfer, and (b) meeting the admissions criteria for the new programme.

Under QMUL's International Exchange Programme, students on most BSc and MSci programmes have the opportunity to 'study abroad' at one of QMUL's partner universities for a full year between Years 2 and 3 of their BSc degree. If you wish to take advantage of this opportunity, you would have to request a CoP onto Pharmacology & Innovative Therapeutics with a Year Abroad. While the year overseas would not count towards your degree classification, any Year Abroad should include relevant modules and you would need to meet the pass standards of the overseas university in order to graduate with the title "Pharmacology & Innovative Therapeutics with a Year Abroad". As you will appreciate, positions on such international exchanges are subject to a successful application, which includes meeting specific mark criteria, and are awarded on a competitive basis. (If you wish to apply to transfer on to a Year Abroad programme, in the first instance, you should discuss the pros and cons with your Academic Advisor or Programme Tutor, as appropriate.) SBCS offers several degrees "with a Year Abroad" because we appreciate the opportunities that this can provide for personal and professional growth, and for the acquisition of transferable skills that will enrich your CV and bolster your prospects for a graduate career.

(15) OPPORTUNITIES FOR POSTGRADUATE STUDY AT QMUL

On completion of your BSc degree, you might wish to embark on a postgraduate research degree to become a Doctor of Philosophy (PhD). Increasingly, competitive applicants for PhD opportunities have not only a high class honours degree (first or upper second class honours), but they will also

have completed a postgraduate taught Master of Science (MSc) or Masters by Research (MRes) degree (commonly with a Merit or Distinction).

The WHRI runs a number of MSc degree courses, such as

- MSc in Clinical Drug Development
- MSc in Forensic and Medical Sciences
- MSc in Genomic Medicine

The full list of Postgraduate Taught programmes can be found here: <https://www.qmul.ac.uk/whri/study-with-us/postgraduate-taught/>

The WHRI also runs a BHF-funded MRes course in Cardiac and Vascular Medicine.

If you need to know more about any of the programmes listed above, please contact Dr Nina Ravic (n.ravic@qmul.ac.uk).

Other SMD MSc post-graduate degree programmes include-

- MSc Regenerative Medicine (Dr Kristin Braun k.braun@qmul.ac.uk)
- MSc Global Health & Policy mcs-enquiry-globalhealth@qmul.ac.uk
- Physicians Associates Studies mcs-enquiry-globalhealth@qmul.ac.uk

SBCS offers MSc degrees including-

- MSc Bioinformatics
- MSc Ecology and Evolutionary Biology (EEB)
- MSc Freshwater and Marine Ecology (EEB)
- MSc Plant & Fungal Taxonomy, Diversity & Conservation
(*run in association with the Royal Botanical Gardens at Kew*)

If you wish to know more about any of the SBCS MSc programmes listed above, you can contact the Director for Teaching & Learning [Postgraduate], Dr Christoph Eizaguirre (c.eizaguirre@qmul.ac.uk).

Further information about all postgraduate programmes can be found on the QMUL website.

(16) WHAT HAPPENS AFTER GRADUATION

Pharmacology & Innovative Therapeutics degree will provide graduates with skills that enable them to pursue a career in research, to teach, to gain employment in the pharmaceutical and

biotechnology industries, or other fields allied to science, technology and medicine or to apply to study medicine or undertake a further study (MSc, MRes or PhD).

Previous students have gone to study medicine and dentistry, MSc, MRes and PhDs, Science-related careers (e.g. working in a laboratory), working in pharmaceutical and biotechnology industries and other businesses, regulatory agencies as well as secondary school teaching.

Anglia Ruskin University, Royal College of Surgeons, Ireland (RCSI) Richmond Pharmacology Ltd, MHRA, Pfizer, GSK, the WHRI, Barts and the London, St George's, Manchester University, Imperial College, City University and UCL are amongst the institutes that our graduates are employed with.

All students are encouraged to visit the QMUL Careers & Enterprise Service in the Queens' Building and use the resources available on their website (www.careers.qmul.ac.uk). The Careers Service run employer and alumni events on campus, offer one-to-one careers advice, practice interviews, CV and application advice and resources to help you with job hunting. Graduates can access the service for up to two years after graduation.

The top 19 ranked candidates from this programme, Neuroscience and Pharmacology and Innovative Therapeutics (based on their cumulative academic performance after the first 2 years of the BSc programme and UCAT score) will automatically be offered an interview to study medicine at Bart's and The London School of Medicine and Dentistry. Further details will be sent to you in the summer after you have completed your second year.

QMUL's MSc in Physician Associate Studies may be of interest to students wishing to pursue a career in healthcare. Physician Associates have direct contact with patients and they work within medical teams to support doctors in the diagnosis and management of patients. Physician Associates work in General Practice or a hospital department using generalist clinical skills but also with opportunities to specialise. Further information is available on the QMUL website.

The BSc Pharmacology & Innovative Therapeutics degree prepares you for careers options that open a multitude of opportunities to make a difference in health and medicine. We look forward to working with you as you begin your University journey.

We hope that you will remain in contact with us after you graduate and become a valued alumni of QMUL and the Pharmacology & Innovative Therapeutics BSc.