



POSTGRADUATE RESEARCH STUDENT HANDBOOK

2016/17

Department of Biology & Biochemistry

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This handbook is available in electronic format via your Moodle (virtual learning environment) pages. The online version includes live links to information sources. If you require a copy in large font or other format please contact the Programme Administrator.

Every effort is made to ensure that the information contained within this handbook is accurate and up-to-date.

1. Welcome to the Faculty of Science



Welcome to the Faculty of Science at the University of Bath. I am delighted that you have chosen to pursue your postgraduate training with us. In some cases that means continuing from your previous studies at Bath, and you will be familiar with the campus and the staff. But for those of you electing to move to Bath from elsewhere, this will be an exciting new challenge. All of you will be embarking on a new phase in your lives and a move to a new style of thinking and learning inherent in postgraduate training; the Faculty of Science Graduate School is here to facilitate this transition. Above all, we want you all to succeed in your chosen course or research project, and that it should be an enriching and enjoyable experience. So do attend the induction events to meet the Graduate School team and to network with your peers. I look forward to meeting you all in the coming weeks.

Prof Sue Wonnacott, Associate Dean for Graduate Studies

1.1 The Faculty of Science Graduate School

There are 6 departments within the Faculty of Science – Biology and Biochemistry, Chemistry, Computer Science, Mathematical Science, Pharmacy and Pharmacology, and Physics. The Graduate School is the home for all postgraduate students engaged in research or taking taught Masters courses within the life sciences, physical sciences and mathematics. The Faculty has several interdisciplinary Research Centres, including the Centre for Extremophile Research (CER); the Centre for Mathematical Biology (CMB), the Centre for Regenerative Medicine (CRM) and Bath Institute for Complex Systems (BICS). These Centres foster cross-discipline interactions, both within and beyond the Faculty of Science, and support interdisciplinary postgraduate training programmes.

Role of the Graduate School

The Graduate School is responsible for supporting postgraduate students throughout their lifecycle at the University, from admission, through progression stages to submission and completion. It also provides a forum for formal and informal interdisciplinary exchanges, offering both academic and social activities. Generic skills training courses are provided by the Graduate Centre via the Graduate School.

Staff in the Graduate School

Location: Wessex House 3.33

Website: <http://www.bath.ac.uk/science/graduate-school/contact/>

Email: fac-sci-gs-admin@bath.ac.uk

Tel: +44 (0)1225 38 3410 (internal ext 3410)

Professor Sue Wonnacott
Associate Dean for Graduate Studies
4 South 0.44

Simon Gane
Graduate School Manager
Wessex House 3.35

Student support

Ceri Dibble
Programmes Officer
Wessex House 3.33

Oversight of PGT and PGR student support.
Secretary to FRSC.

Chris Harrison

PG
Administrator
Wessex
House 3.33

*Current PGR support:
B&B,
Computer Science,
Maths*

Susan Alston

PG
Administrator
Wessex House
3.33

*Current PGR support:
Chemistry,
Physics,
Pharmacy &
Pharmacology*

Sophie Hill

PG Taught
Administrator
Wessex
House 3.33

*Current PGT support:
B&B,
Chemistry,
Computer Science,
Maths*

Student recruitment

TBC
Postgraduate Officer
Wessex House 3.33

Oversight of PG admissions, funding and recruitment activities.
PG admissions: Chemistry

Katie Coy

PG
Administrator
Wessex
House 3.33

*PG admissions:
B&B,
CompSci

Visiting PG students*

Tracey Brend

PG
Administrator
Wessex House
3.33

*PG admissions:
Computer Science,
Pharmacy &
Pharmacology,
Physics*

Rachael Ward

PG
Administrator
Wessex
House 3.33

*PG admissions:
Maths,
CompSci
PG conversion*

2. Welcome to the Department

2.1 Department of Biology & Biochemistry

Dear All,

Welcome to the Department of Biology & Biochemistry! We will endeavour to make the next few years some of the most exciting and challenging of your scientific career.

This handbook is issued to all year one postgraduate research students and contains important information that you should be aware of. It includes contact information for your fellow postgraduates, and department staff and administrators. It provides an overview and source of reference for essential elements in your training including progression procedures, safety, skills training, seminars and conferences, technical services, information for demonstrators and extracts from the University Quality Assurance Code of Practice. Please note that some of this information is also available on the University Web pages and that it is in your interests to check these regularly for updates.

The Department of Biology and Biochemistry is a dynamic Department with around 50 academic staff and over 90 postgraduate students. The Department is one of the largest and most successful in the University and was recently ranked nationally this year by The Complete University Guide as 9th for BioSciences. In addition, we won The Sunday Times University of the Year 2011-12. The Department is firmly committed to excellence both in research and teaching. Our research is diverse and in the 2014 Research Assessment Exercise, nearly a third (31%) of our Department of Biology & Biochemistry outputs were rated world-leading, the highest possible ranking for originality, significance and rigour, and an additional 52% were judged internationally excellent. The Department also scored a maximum of 24 points in the 1999 national Teaching Quality Assurance review

Approximately 125 papers are published in peer reviewed journals each year with our current research grant portfolio in excess of £10 million. The Department has adopted an integrated approach embracing the view that tomorrow's breakthroughs are likely to occur at the interfaces of traditional biological subdivisions. This aim is well served by the Department's two research buildings, 3 South and 4 South, and the provision of a new (2005) £3M Biology Annexe.

As a member of the postgraduate community you are one of the department's most valuable resources and we hope you find it a stimulating environment to pursue your training and a rewarding experience.

Dr James Doughty

Director of Postgraduate Studies, Research

3. Department Structure

3.1. Who's Who in the Department

See <http://www.bath.ac.uk/bio-sci/contacts/> for a full list of Department staff. Some contacts most relevant to PG students are:

Head of Department	Prof Rod Scott
Director of Postgraduate Studies - Research	Dr James Doughty
Department Coordinators	Ms Rebecca Knight
	Ms Anna Franklin

3.2 Research Areas in the Department

Research is carried out on animals, plants and microorganisms at the level of molecules, cells, organisms and populations. The combination of first-class physical facilities, a stimulating intellectual environment and a structured graduate training programme makes the Department an outstanding centre for postgraduate studies. Among the extensive range of facilities available are:

- X-ray crystallography
- 600MHz NMR facility
- phosphorimaging service
- fully supported, modern electron microscopy suite
- BioImaging suite
- DNA / RNA sequencing
- CD spectroscopy
- dedicated molecular biology server
- micro-array reader
- transgenic mouse and *Xenopus* facilities
- tissue culture for plant and mammalian cells
- state-of-the-art *Xenopus* and zebrafish aquaria
- insectaries

- extensive glasshouses, including a GM glasshouse
- constant temperature and plant growth rooms

The Department's research is organised into four themes:

- Cell and developmental biology
- Evolution and biodiversity
- Infection and immunity
- Medical and industrial biotechnology

These provide a focus for academic research groups and are structured in areas where we have state of the art facilities, critical mass, and can compete most effectively in the global research environment. Our strategy is to strive for excellence by investing in people and resources, and position our research so that it will continue to lead bioscience research internationally.

These foci serve to concentrate resources in areas of excellence while providing a coherent and overlapping coverage of a wide range of biological problems. The current grant portfolio includes funding from the Research Councils, Wellcome and Leverhulme Trusts, the EU and industry. The Department participates in five inter-departmental Centres: the Centre for Mathematical Biology, the Centre for Extremophile Research, the Centre for Regenerative Medicine, the Centre for Biometric and Natural Technologies, and the Centre for Molecular Microbiology. These are run in conjunction with other departments in the faculties of Science, Engineering & Design and the School for Health.

4. Working in the Department

Postgraduate workrooms are purpose-designed with PCs, printers and on-line access to the library catalogue and other databases. The building includes a multi-purpose central area with refreshment facilities, a reading room with key journals, several computer terminals for general access dotted around the department and a seminar room. Both PhD and taught Master's Degree students work alongside post-doctoral scientists and academic staff in state-of-the-art laboratories.

4.1 Department Website

Please regularly refer to the Department webpages as these contain the most recent and continually updated sources of information

<http://www.bath.ac.uk/bio-sci/>

4.2 Stationery

Items can be obtained from Martin White in the Stores (3 South 0.12). Your Research Training Support Grant will be given a Job Number through which you can purchase items for your research (including stationery). You will have to sign for anything you purchase and a monthly statement of your expenditure will be given to your supervisor.

4.3 Mail Pigeonholes

You will find your mail in the Departmental Office pigeonholes (4 South Room 0.08). Look at the bottom row under the first letter of your surname. **Please check your pigeonholes daily.** Out-trays in the Departmental Office are for official University mail only. Please post your personal mail at the public post-box in the car park in front of Building 4 South.

4.4 Finances and requisitions

Conferences

Participation in conferences is an important element of your training. Conferences offer an opportunity to learn of the latest developments in your field and to gain a broader perspective of a research area. They also provide a forum for you to present your work, as a poster presentation or oral communication, and engage in discussions with fellow students, other researchers and senior scientists. Conferences can provide opportunities for establishing research links or future employment offers. The department has some funds to enable you to attend conferences both here and overseas but you also need to make an application to your learned society for financial support. For information on how to apply for a departmental travel bursary see the next section. Presentation of a poster at the conference will greatly enhance your chance of being successful and is a pre-requisite of departmental support.

Requirements for Obtaining Departmental Travel Bursaries

As stated in the previous section, the Department recognizes the invaluable experience of attending and contributing to national and international meetings as part of your postgraduate training. Travel bursaries up to £200 are therefore available to help with the expense of travel and accommodation to these meetings. It is important to note that many funding bodies build in a travel allowance to their Training Support Fee (TSF) – this funding should be used where it is available (see below for rates). Travel bursary forms are located above the fax machine in the photocopier room (4S 0.08) and on the departmental PG Moodle pages. The absolute amount awarded is decided by the Director of Postgraduate Studies. The criteria and procedure for applying for these bursaries are as follows:

1. You must either be giving a talk or poster.
2. You must have applied to your society for travel funds if they have such a scheme available. If you have not joined a society you will NOT be funded. However, if either your society does not fund these schemes or you are not granted the travel bursary, you can still be considered for departmental monies.
3. BOTH supervisors and students have to make a case explaining the relevance of the conference to their work. A copy of the poster/talk abstract should be attached to the application form
4. Applications are to be given to the Director of Postgraduate Studies a **minimum** of one month in advance of the meeting. A decision will be made, a copy of the application put in the student's record and then forwarded to the Faculty of Science Finance Office. Monies will then be deposited in your student account and you can then fill in a claim form and will be reimbursed.
5. Students must write a report on the meeting and submit it to the department. One A4 page should suffice with the scientific highlights and what you gained by attending. This is required and no future bursaries will be granted if this has not been completed.

Postgraduate studentships frequently include an element of travel money for each year. Amounts are typically as follows:

BBSRC £300 per annum

MRC £300 per annum

NERC project dependent

(Please note that travel money obtained as part of a studentship will be treated as going towards the total amount available to you from the department, rather than being added to it). It is acceptable for

supervisors/students to use these allowances flexibly such that more than the annual allowance can be used in any given year (though the total amount available will remain unchanged).

Training Support Fund

Your supervisor may have access to a Training Support Fund (TSF) to support your research. With their approval, this can be used to purchase books, equipment, computing, travel to conferences, plus other expenditure that your supervisor believes will benefit your work. The amount available in this fund varies considerably depending on the source of your funding, and the programme of study you are on. Please check with your supervisor regarding arrangements for this.

Purchasing Travel

Although you are able to purchase travel tickets yourself and claim the costs back with a receipt, the University can buy these tickets upfront on your behalf. This is charged directly to the University. The University's travel agent, Ian Allan Travel, is available to postgraduate students to book their own journeys and accommodation online (see uob.ianallantravel.com to register). You will need to know your project code, so if you don't know this, please ask your supervisor.

Conference fees and associated costs can be arranged through the Faculty Finance Office (fac-sci-finance-admin@bath.ac.uk). Please check with your supervisor before making any purchases for travel.

Expense Claims

The process for claiming back research expenses you have paid yourself is the same for postgraduate students as for staff. This is done with the Agresso system online at <https://agresso.bath.ac.uk>. If you do not have access to Agresso, or require some help completing your claim, please speak to the BUCS helpdesk in the Library. Agresso web expenses enables you to enter the costs online and print out a summary to which you attach your receipts and hand in to the Faculty of Science Finance Office in Wessex House 3.50. Please check with your supervisor before claiming any expenses.

Student Maintenance Payment (Stipend)

If your study is funded from a Studentship (i.e. URS, ORS, DTG) you will most likely be receiving a quarterly payment for living costs during your degree. This

is not applicable for self-funded students. Maintenance is paid directly to your bank account in October, January, April and July. Please be aware though, that this payment will stop for periods of suspense, and status changes from full or part time study (i.e. Writing-Up, Thesis Submitted etc.) Any questions about maintenance can be directed to the Student Finance Office (stufin-stipends@rt.bath.ac.uk).

Departmental/University Research Studentships: Rate as for BBSRC studentships above. Students in receipt of other forms of studentship support should consult their supervisor.

These allocations are added to the Research Training and Support Fee, paid directly to the Department and coded to the Supervisor. This travel money can be claimed from the Faculty Finance Manager (Laura Hiscox) in respect of costs associated with conference attendance. Allowances for two or more years can be combined to fund one overseas conference. Receipts will be required.

Departmental Bursaries can be applied for by students to support their attendance at conferences (see previous section for details).

Conference Organisers and National Professional Societies are other potential sources of travel funds. Don't leave it until the last minute to make an application. If you require written support from the Head of Department, please discuss this first with your supervisor. Provide some supporting notes with your form so the Head of Department can quickly formulate a suitable reference.

Budgeting and International meetings: We hope that you can attend and report your work to at least one international meeting during your three years (whether in the UK or overseas). For the larger meetings there are often reduced rates for early booking (as well as an early deadline for submission of abstracts for posters and talks). Make full use of budget air travel. The Travel Office on campus has many very good deals for students. Budget airlines operating mostly within Europe do have very cheap deals. Ryanair and EasyJet can only be booked online. However, in all cases, the earlier you book the cheaper the offer. Plan ahead!

Ordering

The Department Stores holds a small stock of rapid turnover consumables, which are itemised in the Stores List, which is available in all laboratories, or from Martin White in the Stores (3 South 0.12).

If you wish to order items from these lists please complete a green internal order form. For external orders, please complete either a pink or blue internal order form depending on your VAT status, i.e. VAT Zero-Rated (pink form) for equipment, consumables and services used in medical research or, VAT Standard-Rated (blue form) for equipment, consumables and services used in non-medical research and teaching. Please use the blue form for SR540 and highlight this fact on the form.

Please put all completed forms either outside the 3S 0.12 store or in the basket in the west foyer (outside 4S 0.24) for the attention of *Martin White*. Please note that inadequate details may result in forms being returned and hence some delay in processing your order.

All Stores items and goods inward will normally be delivered to your laboratory by laboratory assistants.

For your convenience we have set-up a Product Information reference library in the west foyer (outside 4S 0.24) together with a display of current "special offers" and promotions designed to save you money.

Stores opening-hours are 8am to 1pm and 2 to 4.30pm.

Financial - Requests for reimbursements, advances, conference bookings and other financial enquires, should be referred in the first instance to Ulrika Whitley (Wessex House 3.50).

Workshop

If you require jobs to be undertaken by the **Department Workshop**, please complete a yellow internal Workshop Request form (available outside the workshop 3S 0.13) and place it in the pigeon hole outside the workshop. The workshop offers a range of repair and construction services and advice on workshop matters. *Colin Cooper* is able to offer advice (email – C.Cooper@bath.ac.uk). We also have access to the **Science Faculty Workshop** when required and authorisation for works carried out here must be sought from Ewan Basterfield (E.C.Basterfield).

IT Support - Requests for help should be raised via the University Computing Services electronic form available at:-

<http://www.bath.ac.uk/bucs/help/contact/index.html>

NOTE: **Building Maintenance, Defects and Modifications**. These should be reported directly to *Ewan Basterfield* (3S 0.04) and **NOT** to the Department Workshop.

4.5 Technical Information

Technical Services Guide

The Departmental Technical Services cover:

- Security, safety and first-aid
- Waste disposal
- Ordering and financial
- Central facilities
- Lab washing-up and cleaning
- Refrigerants and gases
- Laboratory coats
- Workshops and IT support

Lab Washing Up and Laboratory Cleaning

Laboratory and office floors are cleaned by the portering staff. Assistance in placing stools on lab benches is appreciated.

The lab washing-up area in 4S 0.21 is supervised by *Ewan Basterfield*. This area operates flexibly and provides support when required. Dirty glassware will normally be collected, washed and returned to laboratories. PLEASE ENSURE GLASSWARE IS RINSED FREE OF HAZARDS.

During very busy periods it may be necessary for you to deliver and collect your own glassware, especially if it is required urgently. You should advise the Laboratory Assistants accordingly if you require any special washing regime. The 4S 0.21 washing-up area also provides **autoclave facilities** (in room 4S 0.23 opposite – see section on autoclaving several pages ahead).

For decontamination by autoclaving refer to the waste disposal (microbiological) section. Used glassware that has been autoclaved will be washed-up and returned to laboratories. (See also Waste Disposal section). During "off-peak" periods some assistance with general laboratory cleaning and other tasks will be available. Please contact Ewan Basterfield (3S 0.04) if you require this service.

Laboratory Coats

If you are a researcher working in a "wet" laboratory you should have at least two laboratory coats. These coats must have a University laundry label sewn inside just under the collar and the label should be clearly marked "4 South" or "4S", together with your name and department.

Dirty coats should be delivered to the shelving in the corridor opposite to the autoclave room by Monday afternoon for laundering. The Laboratory Assistants will record details of your coat. Clean coats are received on Thursday and will be delivered to your laboratory on Friday. A few spare coats are available in the Stores.

New laboratory coats can be purchased by submitting a blue or pink Stores Requisition form, quoting; style (for optimum protection you are recommended to purchase the "Howie" style of laboratory coat with elasticated cuffs, a high neck and side fastening studs) size and who the coat is for. Before being sent for laundering, the coats must have (marked with indelible laundry marker on the laundry label):

1. the name of the lab worker
2. the department (Biology, or simply B&B)
3. the building (4S or 3S)

When you receive new coats from the store the labels should already have been appropriately marked.

Waste Disposal

Information on disposal from the University is available on the web at: <http://www.bath.ac.uk/hr/stayingsafewell/environment/hazardous-waste/> E-mail biology-wastes@lists.bath.ac.uk for requests for non-routine collections of departmental laboratory hazardous wastes and also for enquiries about waste disposal within the department.

All solid laboratory waste, except that designated as **Hazardous Waste**, should be placed in the "**red-label**" bins provided. The Porters empty Red-label bins.

Hazardous Waste should be treated as follows:

Microbiological waste for autoclaving and disposal should be placed in the transparent autoclavable bags in the laboratory before being delivered to the autoclave room (4S 0.23). Sturdy plastic bag holders can be ordered from Stores and these should be used for transporting full bags to 4S 0.23 prior to being left there for autoclaving. **Please seal the bags of disposable waste with autoclave tape.** New disposal bags are available from the Stores (3S 0.12).

	Store code
Autoclave bag	AUT1410
Autoclave bag	AUTHOLD

Animal and Clinical waste: should be stored in a freezer in your lab area. Request collection by e-mailing biology-wastes@lists.bath.ac.uk.

Glass: (Not recyclable bottles.) Broken glass and other glass for disposal should be placed in the **yellow** 60 litre or 10 litre containers provided. Please remove caps, deface hazard labels and rinse where feasible. Request collection of full containers by e-mailing biology-wastes@lists.bath.ac.uk.

Sharps: Used needles, blades and small glass shards must be placed in the **yellow** sharps bins provided. Full sharps bins should be taken to the autoclave room (4S 0.23) for autoclaving prior to disposal. Replacement sharps bins are available from the Stores (3S 0.12).

Sharps bin size	Store code
0.6 litre	3 82 2346
5 litre	3 82 2352
10 litre	3 82 2369

Organic Solvent waste: should be put in the appropriate disposal bottles, obtainable by e-mailing biology-wastes@lists.bath.ac.uk. Please use the **yellow-labelled** bottles for waste containing halogenated (chlorinated) solvents and the **red-labelled** bottles for waste containing non-halogenated (non-chlorinated) solvents. Request collection of full bottles by e-mailing biology-wastes@lists.bath.ac.uk.

Ethidium Bromide: contaminated waste must be placed in the labelled 30 litre **yellow** containers. Please do not overfill these - use an alternative

instead. Request collection of full drums by e-mailing biology-wastes@lists.bath.ac.uk. Empty yellow 30 litre containers are available from Stores (3S 0.12) on completion of a requisition (stores code 3 82 2381).

Lab smalls: (bottles of redundant chemicals) should be notified to biology-wastes@lists.bath.ac.uk and their safe disposal will be arranged.

Loose Powders: Hazardous chemicals should be treated as Lab Smalls. Non-hazardous powders must be bagged before disposing in the "red-label" bins (bagging minimises dispersal in the air when the bins are emptied).

Scintillation Vials: must be placed in the 60 litre **yellow** bins provided in counter room (4S 1.48). Please ensure that you complete the on-line management system when you dispose of vials. This is a legal requirement. When full collection of full drums can be requested by e-mailing biology-wastes@lists.bath.ac.uk. Empty labelled yellow 60 litre containers are usually available from Stores (3S 0.12).

Other Radioactive Disposals: Suitably screened bins for the disposal of solid radioactive waste (P-32, S-35 and 1-125) are kept in relevant laboratories. When full you should contact biology-wastes@lists.bath.ac.uk to arrange collection and replacement.

All solid and liquid radioactive waste disposals must be recorded on the on-line management system. This is also a legal requirement.

Paper Re-Cycling: the porters run a clean paper re-cycling service.

Cardboard boxes: place these (except thin card such as tissue boxes) outside your lab on the floor of the corridor late in the afternoon. The porters will collect them in the morning.

Glass Re-Cycling: Pyrex, Duran or Schott bottles cannot be recycled. Other types of glass containers can be recycled in the facilities around campus.

Further advice on Hazardous Waste Disposal can be obtained by referring to the web at –

<http://www.bath.ac.uk/hr/stayingsafewell/environment/hazardous-waste/index.html> or by contacting the University Hazardous Waste Service at waste@lists.bath.ac.uk. Advice on radioactive waste disposal can be obtained from the Department Radiation Protection Supervisor, Dr. John Beeching (4S 1.11) ext. 3572.

Refrigerants and Gases

Crushed Ice is available from the machines situated in 4S 0.50 and 3S 1.09. The machine in 4S 1.15 can also be used out of term time.

Dry-Ice (Cardice) is delivered on Mondays and is available in the storage boxes situated in 4S 0.50, 4S1.48 and 3S 1.09. You are requested to "recycle" additional dry ice obtained in deliveries by adding it to these boxes when available. Queries relating to dry-ice should initially be addressed to Ewan Basterfield (3S0.04)

Important safety advice for the use of Dry-ice and liquid nitrogen is given on the web at <http://internal.bath.ac.uk/bio-sci/bbsafe/asphyx.htm>

Liquid Nitrogen is currently delivered on Mondays and Thursdays. Dewars for refilling should be placed in the South Foyer. Queries relating to liquid nitrogen should initially be addressed to Ewan Basterfield (3S 0.04). Please note that personnel must not accompany pressurised liquid nitrogen containers when being transported in the lift.

Cylinders of compressed gases should be requested by completing an internal Stores Requisition form and handing it to Martin White (3S 0.12). Nitrogen and carbon dioxide are available ex Stores, but other gases and special-mixtures can be obtained fairly quickly from BOC.

Central Facilities

Centrifuges and Rotors: Ultra- and mid-speed centrifuges are situated in 4S 0.50, 4S 1.48 and 3S 1.09 together with the appropriate rotors and accessories. Centrifuges and rotors are monitored by *Ewan Basterfield*, but it is the **responsibility of users and their supervisors** to ensure their proper use and to wash and dry rotors. **Please ensure that you complete the appropriate booking sheet for the centrifuges and rotors before use.**

Cold Rooms are situated in various parts of the building and mostly allocated to particular programme areas. They are monitored by a designated programme technician, but it is the **responsibility of users** to ensure that they are kept tidy.

Darkrooms: these comprise a number of service darkrooms in various parts of the building containing, among other facilities, the x-ray film processors (4S 0.74) and the Polaroid camera (4S 1.36). They are monitored by a designated programme technician, but it is the **responsibility of users** to ensure that the equipment is used correctly and that they are kept tidy.

Vacuum Equipment is located in various parts of the building, but notably in 4S 1.48. It is the **responsibility of users** to ensure that they are properly used. Any problems should be referred to the workshop.

DNA Sequencing and Micro array reading: for use of these services please check with your supervisor.

Glasshouses: The Department has a number of glasshouses devoted to teaching and research. All enquiries should be addressed to Claire Soulsby.

Microbial Culture Collection is maintained by *Ewan Basterfield*, to whom all enquiries should be directed.

Controlled Environment Rooms: those cabinets that do not specifically belong to programme areas are overseen by *Ewan Basterfield* (3S 0.04) to whom all enquiries should be directed.

Autoclave: The autoclave is situated in 4S 0.23. There is a timetable for autoclave runs with 3 "clean" runs per day (2 for media and 1 for dry materials such as tips and glassware) and materials to be sterilised should be delivered to 0.23 suitably labelled on autoclave tape with the person's name, lab number, contents and date. The normal "clean" autoclave regime is 121°C for 15 minutes.

You are requested to remove sterilised items as soon as possible as storage space is very limited.

Leave items on the shelves on the right as you enter 0.23 from the corridor. If you require media to be maintained molten after sterilising please label the containers accordingly and they will be placed in the grey oven. There will normally be three "clean" runs per day and materials to be sterilised should be delivered to 4S 0.23, suitably labelled. The normal autoclave regime is 121°C for 15 minutes. Materials must be collected as soon after autoclaving as possible to avoid clogging the limited storage space. For decontamination by autoclaving refer to the waste disposal (microbiological) section.

Confocal microscope: users' guide is available at <http://www.bath.ac.uk/mas/>

Technical enquiries may be addressed to Ewan Basterfield (3S 0.04).

5. Health and Safety

All postgraduates must attend a Departmental Safety session.

5.1 Safety policy

Policy

This is available on the Departmental Safety noticeboard (outside 4 South 0.14) and on the web at

<http://www.bath.ac.uk/hr/stayingsafewell/hs-policy/index.html>

Safety Manual

Following the introduction of the University Safety Policy in March 1996, a new University Safety Manual was introduced in August 1997. This Manual is not issued to everyone.

The Manual details the arrangements the University has made to manage health and safety. These arrangements include those at Departmental level and involve EVERYONE. You will NOT be required, or expected, to read it all. Indeed, it is envisaged that, apart from the individuals who have their own copy, you would only refer to the Manual when you need to. Paper copies are lodged with The Head of Department (Prof Rod Scott), Departmental Safety Coordinator and The Department Office

You can inspect a copy in the Office where it is currently on display in the rack to the left hand side of the pigeonholes. Please do not remove this copy from the Office. It can also be viewed at

<http://www.bath.ac.uk/hr/stayingsafewell/hs-policy/index.html>

Departmental Safety Policy

You will receive a copy of the Departmental Safety Policy and some safety-related information when you attend the compulsory safety training sessions.

You **DO** need to read, and comprehend, these documents.

A wide range of Departmental safety information is available on the internet via the Departmental Wiki page.

You are required to attend the basic introductory session on aspects of health and safety management within the University and Department. You will be

informed of the date of this session (see Training Courses). Failure to attend such a session may mean you cannot start lab work.

5.2 First Aid

The Department has a number of qualified first-aiders:

Anna Mellors 4S 1.21

Karen Croker 3S 0.04

5.3 Safety Contacts

Departmental Safety Co-ordinator:

Robyn Bott (r.bott@bath.ac.uk)

Departmental Radiological Protection Supervisor:

Dr. John Beeching, 4 1.11 (Ext. 3572) Email: J.R.Beeching@bath.ac.uk

5.4 Building Security

Buildings 3 and 4 South are locked outside normal working hours (which are 8.00 a.m. to 6.00 p.m. Monday to Friday). Out of hours access is by library card and PIN number. To register your details you will need to see Ewan Basterfield (in Room 3S 0.04) or Martin White (Stores) when you have your library card.

Be vigilant and politely enquire if any strangers need assistance.

6. Training and Seminars

6.1 Training Units

Training is recognised as a crucial element in a PhD programme. The Department of Biology & Biochemistry and the Faculty of Science are developing a complementary series of training courses, details of which are given in the accompanying lists. It is both a requirement of the Research Councils and the policy of this department that all students must attend appropriate training courses. The list of courses details who must attend and who can attend.

The Department runs training courses for new postgraduates in:

- Safety
- Radiological protection
- Use of Centrifuges
- Genetic Modification

All these courses are mandatory for all new postgraduate students. Laboratory work cannot commence until the safety course has been completed. These courses will start during the induction week (see Moodle for calendar). Please check Moodle regularly for updates.

The Faculty provides courses in more generic aspects of doing a PhD. While there are a number of courses for those just embarking on a PhD, other topics, such as writing a thesis, are aimed at 3rd year postgraduates. Thus training should be viewed as an on-going process throughout your three years. See Moodle for timetable.

6.2 Other Training Opportunities

The Good Microbiological Practice (GMP) course contains training in the safe handling of micro-organisms and cell cultures as well as the legal aspects of using genetically modified organisms and their vectors. See Moodle for timetable.

Electron microscopy and atomic force microscopy for life scientists: (Ursula Potter). This course is provided by the Centre for Electron Optical Studies See Moodle for timetable

Bioimaging course: (Adrian Rogers). This course is provided by the Centre for Electron Optical Studies. See Moodle for timetable.

Environment: IP, licensing and spinouts; Ethics: Confidentiality, attribution, copyright, malpractice and plagiarism.

Details of these courses can be found at:
<http://www.bath.ac.uk/research/pgskills/>
Updates will also be posted on Moodle.

Taught Level 3 and Masters Units available within the Department
New research postgraduates, particularly those arriving from other Universities, should consider whether they might broaden their knowledge by

attending one or more appropriate level Units, each normally lasting one semester. Full details can be found in the catalogue of Units at: <http://www.bath.ac.uk/catalogues/2016-2017/index.html>. You should seek the advice of your supervisor and get permissions from the Convenor of the Unit.

6.3 Workshops

When possible and appropriate, the Department organises or participates in workshops that provide postgraduate students with the opportunity to broaden their Generic Skills knowledge. In addition, postgraduate students are encouraged to attend relevant external events, such as the *Life Science Careers Conference*, for which the Department provides travel expenses.

6.4 faculty of Science Research Afternoon

The Department actively encourages postgraduate students to attend and participate in University-wide events, such as the Research Afternoon, which was designed to promote cross-disciplinary and collaborative research with research postgraduates at Bath.

6.5 Department Research Conference

Each year, the Department's postgraduate association (PG Bio) is responsible for the organisation and running of a Departmental Research Conference. This annual event involves the organisation of commercial company involvement & sponsorship, poster sessions (& prizes), oral presentations (& prizes) and networking opportunities.

6.6 Generic Skills Training

Postgraduates (PG) are required to participate in a structured programme of generic skills training that consists of mandatory core elements plus a broad range of individual options tailored to meet students' specific needs. Postgraduates are encouraged to identify their training needs in consultation with their supervisors, and are advised to create a Personal Development Plan (PDP).

During their first year all research postgraduates attend a new Research Training Course Unit that includes a range of components including *Research Project Management, Written Reports, Time Planning, How People Learn,*

Computing skills, UK and International Context of Research, and Research in a Commercial Environment. Student Handbooks contain the Generic Skills Training Table from the RCs/RB joint skills statement which we have adapted to include specific examples of taught and on the job training opportunities and specific success indicators that students and their supervisory team can use as a guide that informs their progression and PDP.

In the second and subsequent years, training provision and assessment, tailored to individuals, is a blend of Department-led programmes, individual sessions run by supervisory teams, and centrally provided Staff Development Unit courses.

PGs must give annual, formally assessed, department seminars with supervisors & assessor giving feedback to the PG. Year 1 PGs must attend all PG department seminars and at least 75% in other years, and attend all department seminars by invited speakers. To obtain department financial support to attend meetings, PGs must present an oral/poster paper. All PGs join a professional society and attend a national scientific meeting in year 1 and present at a national and/or international meeting in years 2 & 3.

The University Staff Development Unit (SDU) is dedicated to enhancing provision of training for PGs. The design & implementation of PG courses is based on the Statement of the Joint Research Councils and the Arts and Humanities Research Board. Currently, the SDU provides programmes of training & assessment for PGs that cover skills for research & teaching such as: *Planning your PhD; Project Management; Presentation Skills; Writing Reports; Completing your PhD; Research in a Commercial Environment; Communication Skills & Assertiveness; Demonstrating; Interviewing; Writing Skills for Scientific Abstracts Papers & Reports; Planning & Time management; Writing up on Time; Handling Relationships with Supervisors, & Staff.*

PGs are encouraged to do some demonstrating with permission of their supervisors.

Research funding and applying for grants is taught by the Grants & Contracts Unit. The Careers Advisory Service gives instruction on planning a career, CVs, fellowship and research job opportunities. IT and information handling is taught by staff providing a PG Bioinformatics course. Science in a commercial environment is taught by the Business Development Unit and staff of Bioscience Companies. University policy is to support PGs in creating their own PDP covering all aspects of career management.

Training uptake is monitored on progression forms and as part of the PDP. Effectiveness is assessed by supervisors, assessors, performance in the lab, at department and lab seminars, at conferences, and in publications.

6.7 Training Skills Record

You should update your personal record online. Recording courses attended and research skills mastered (with validation of attendance or competence, respectively). This record will be submitted with your annual progress report, and at the end of your PhD it can provide a record of your training to show future employers.

6.8 Department Seminars

The Department runs a number of seminar programmes which postgraduate students are either encouraged or required to attend. These are designed to advance the wider knowledge of the students, whilst also improving their communication skills. In this Department, Seminar Programmes comprise:

Weekly Research Seminars

Held on Tuesdays at 4.15 p.m. and given by invited scientists; Postgraduate Students are expected to attend.

Weekly Departmental Research Presentations

Two seminars are given each Thursday at 1.15 - 2.15 pm in the Pavilion, by Postgraduate Students and Post-Postdoctoral Researchers. It is a requirement that every student gives a presentation in each year of their PhD training, and Postgraduate Students are required to attend at least 75% of these seminars as a condition of progression. **NB: you will need to have a 75% attendance rate at Thursday seminars in order to be eligible for departmental travel bursaries.** An attendance list will be circulated. The timetable for Thursday lunchtime seminars can be found on the departmental PG Moodle page.

Ad hoc Guest Seminars

Occasional seminars may be given by visitors to the Department. These are often from eminent scientists or from active younger researchers, and offer a further opportunity for learning, discussion and possibly finding out about potential employment opportunities. In addition, other departments, especially, Chemistry, Pharmacy and Pharmacology, Chemical Engineering

and Medical Sciences, have seminar programmes that include work highly relevant to research in this department. Postgraduate students are encouraged to attend.

Why do you need to go to seminars?

Research Seminars are a fundamental part of academic life. For Postgraduates, they not only advance knowledge but also provide training in communication skills. Thus they constitute an important element in the PhD training programme, and are recognised as such by the Research Councils that fund most of our studentships. Postgraduate Students are expected to want to attend not only those seminars related to their own research but also those covering other topics, to keep up to date with current advances in their general discipline and to get an insight into other fields. Moreover, students will often encounter solutions to their own technical problems by attending seminars outside their own research group. Finally, when you apply for jobs elsewhere, your interviewers will expect you to know about the research going on in your Department.

To help develop an ethos of seminar-going, the Department provides all researchers (Postgraduates and Postdocs) with a Seminar Book, for taking notes. This book can be used for all of the above seminars, and must be used by Postgraduates to keep a record of the Thursday seminars attended. For each talk, the following should be recorded: Date; Name of Presenter; Title of Presentation; Some notes or comments (e.g. aims, methods used - these might be relevant to your project, key observations/conclusions, comments/tips on style of presentation, useful references etc...). This is good practice for everyone going to Seminars so it is habit worth learning.

A Postgraduate's Seminar Book will also serve as a Record of Attendance and it will be presented with the Annual Report in the first and second years: satisfactory seminar attendance, including 50% of Thursday seminars, will be a condition of progression

6.9 Thursday Lunchtime Talks

Guidance for Speakers for Thursday Seminars

Background

Due to the growing number of postgraduate students within the Department, we increasingly have to schedule three seminars per Thursday lunchtime session. As a result, accurate time-keeping is essential if the sessions are to finish promptly. Following discussions by Postgraduate Committee, it has

been agreed that all Thursday lunchtime seminar sessions should be chaired. Postdoctoral talks (which occur at the beginning of the academic year) will be chaired by the Director of PG studies Dr James Doughty. After this, each first, second and third year session (regardless of the number of presentations involved) will be chaired by a postgraduate student, supervisors will be invited to introduce their own students.

Guidance

It is your responsibility to check the provisional timetable for seminars and make sure BOTH your supervisor and assessor will be available on that day. If there is a scheduling problem, you must arrange to switch with another student - this will not be done for you. Once everyone is satisfied with the time slots a final timetable will be issued. In the event that either your supervisor or assessor cannot make the session after the final timetable is in place, they should arrange to have another member of staff attend in their place.

Prior to the start of the seminar session, presenting students should ensure that their talks are uploaded onto the computer to ensure a swift transfer between presentations. The session should begin promptly at 13.15 with the introduction of the first speaker.

First year students are advised that their seminar session is allocated 15 minutes in total, which includes approximately 10 of presentation plus about 5 minutes for questions and answers. As such, the presentation itself should last no longer than ten minutes. Second and third year students are allocated a 20 minute slot (15 mins presentation and 5 mins for questions). The Chair will state when the presenter has two minutes remaining. At the ten minute stage, if the presenter is not drawing to a close, the Chair will step in and ask them to end their talk.

Questions and answers are allocated a maximum of three minutes in total. This will be closely monitored by the Chair, who will end the question session promptly. Any un-addressed questions can be raised with the presenter after the seminar session ends.

The switch between presentations on the laptop should be swift if all presenters have already uploaded their presentations. A minute will be allowed between presentations to allow the changeover between presenters – during this time, the relevant presentation can be displayed, the presenter

can get their microphone hooked up, and the relevant supervisor can make their introduction.

SUMMARY: Preparing your Year One Presentation

Aims of the presentation:

1. To give you practice in presenting a talk.
2. To tell the audience about your work.
3. To get constructive feedback at an early stage.

The audience will be composed of other PGs, post-docs and academic staff from across the department. They will be knowledgeable but will not know your specialism in detail. Pitch the talk at an appropriate level.

Objectives of the talk:

To explain:

1. **What** you are trying to do
2. **Why** it is important
3. **How** you are planning to do it

The schedule allows for 3 talks in about 50 minutes, which means about 15 minutes in total for each speaker with some time for changeovers. Your 15 minutes should be about 10 minutes of talking plus about 5 minutes for questions and answers.

Practical issues:

1. Use Powerpoint.
2. Learn by observing current presenters about good (and bad) practice. Go to the PG session on presentations to learn how to improve. Practise your talk until you feel confident.
3. If you need to use the departmental laptop, you need to book it (Office). If you are using your own laptop ensure that you turn off screen-savers or energy saving mode - it might go to sleep while you are waiting to present.
4. A PPT projector will be available but it only has two inputs. Negotiate with the other two speakers to load all three presentations onto one (or two) laptop(s). Load your talk onto the hard drive - do not run it from the floppy drive.
5. Arrive at 1pm to help prepare the room and make yourself comfortable.
6. Use the radio microphone.

Please check the Biology & Biochemistry PG Moodle pages and the departmental Wiki for the Thursday Lunchtime Seminar Schedule.

In order that seminars are intelligible, speakers do need to bear in mind the breadth of research interests in the Department, and hence in the audience, and to pitch their talks at an appropriate level. ***Thursday Seminar***

speakers should send out via email, a brief (100 words max) synopsis of their topic, together with a title, the day before the talk.

Your abstract and title should be emailed to the following lists: -

bss_all_staff@lists.bath.ac.uk

BB-RF@courses.bath.ac.uk

BB-RP@courses.bath.ac.uk

BB-TF@courses.bath.ac.uk

6.10 Societies

You are studying here for a Higher Degree by Research. It is therefore very important that you become able to put your own research work within the context of national and international science and indeed, this is now a requirement of the Research Councils. Accordingly, it is departmental policy that you should become a member of a learned scientific society within the UK. These societies promote their subject area within the country, publish newsletters or magazines, organise conferences, provide financial assistance to attend meetings and courses and can give careers advice. Society membership is a useful addition to your CV.

The department will pay for your membership to one learned society for the duration of your laboratory work here provided it has a discounted student membership category. You should consult with your supervisor about which is the most appropriate society for you to join. You can ask your supervisor or the member of staff below for instruction on how to join (although it does not have to be on the list below). We ask you to pay for yourself (usually direct debit is required) and once you have *proof of payment* from the Society you can reclaim the money back from the Finance Office (Wessex House 3.50). You may find that more than one society is appropriate for your research interests. Should you be able to afford to join more than one society (or your supervisor is willing to fund this for you), it is highly recommended as this will increase the likelihood of obtaining travel grants for international meetings and will broaden the possibilities for gaining scientific contacts.

There are some conditions:

1. The society chosen must have the approval of the supervisor.
2. The membership should not normally be more than £25 per annum.
3. It is up to the student to make the application and pay the fee. The money and then be reclaimed from Eric Wing in our Finance Office if evidence of receipt of payment is provided.
4. This offer expires three months from your start date.

5. Membership will be paid only during the period of registration with full fees.
6. Advantage should be taken of attending society meetings and presenting your work.
7. Learned societies often give support to attend other (international) conferences. When making applications for travel bursaries from this department so that you can attend other meetings or conferences, evidence should be given of prior application to "your" society for funds to support such attendance.

Further details of societies can be obtained from the members of staff listed below or from the web sites, many of which have joining instructions.

The Biochemical Society

<http://www.biochemistry.org> (Dr. Jim Caunt)

The British Pharmacological Society (Professor S. Wonnacott)

<http://www.bps.ac.uk/>

The British Neuroscience Association (Professor D.R. Brown)

<http://www.bna.org.uk>

The International Society for Neurochemistry (Professor D.R. Brown)

<http://www.neurochemistry.org/>

The Society for Neuroscience (Professor D.R. Brown) <http://www.sfn.org/>

The British Society for Parasitology <http://www.bsp.uk.net/>

The British Society for Cell Biology <http://www.bscb.org>

The American Society for Cell Biology (Dr Paul Whitley) www.ascb.org

The British Society for Developmental Biology (Dr. R.N. Kelsh)

<http://www.bms.ed.ac.uk/>

The British Society for Plant Pathology (Dr. R.M. Cooper)

<http://www.bspp.org.uk/>

The Genetics Society

<http://www.genetics.org.uk>

The Physiological Society (Professor S.E. Reynolds)

<http://www.physoc.org/>

The Royal Entomological Society (Professor S.E. Reynolds)

<http://www.royensoc.co.uk/>

Society for Invertebrate Pathology <http://www.sipweb.org/>

The Society for Experimental Biology (Professor S.E. Reynolds)

<http://www.sebiology.org/>

The Association for the Study of Animal Behaviour (Dr. Tamas Szekely)

<http://asab.nottingham.ac.uk/>

The Society for General Microbiology (Dr. Ruth Massey)

7. The PhD / EngD lifecycle

The diagram below illustrates the typical lifecycle for standard PhD or integrated PhD/EngD students and includes details of the key progression milestones and when they occur. Further details about these progression milestones can be found in the *University Handbook for Research Students*, which will be included in your welcome pack.



The PhD/EngD lifecycle

