

SSC in Research Practice

HANDBOOK 2018/2019

COURSE LEAD: PROFESSOR EWAN PEARSON



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Contents

Aims of the SSC in Research Practice	2
Supervisor Guidance	2
Timeline	2
Important dates for January block SSCs.....	2
Important dates for May block SSCs	3
Contacts	3
SSC in Research Practice Lead.....	3
SSC in Research Practice Administrator	3
How to Apply.....	4
Assessment	4
Bursary Application Form.....	4
Handing in your documentation for assessment.....	5
The vacation component of the SSC in Research Practice.....	6
Aim of the vacation component of the SSC in Research Practice.....	6
Bursaries	6
Applying for Bursary Funding.....	7
Presenting your work.....	7
Appendix 1 Example Assessment Form	8
Appendix 2 Report Writing Guidelines.....	11
Appendix 3 Funding for Vacation Component of the SSC in Research Practice	13

Aims of the SSC in Research Practice

The overall aim of this SSC is to offer medical students a hands-on opportunity to experience research and data analysis. You will:

- Learn basic research techniques and methods of data collection and analysis
- Understand how these can be applied to addressing scientific problems in the laboratory
- Develop skills in experimental design and analysis
- Be exposed to biomedical research opportunities within the University and to clinical academic career options.

The SSC consists of two components: a 4 week block and a 6-8 week vacation scholarship. The 4 week block is scheduled during standard SSC time, and is a "Taster Month". During this time you will become acquainted with basic methods and techniques used in your host research group, meet the team, and will formulate a research proposal under the guidance of your supervisor.

At the end of the 4 week SSC, and subject to mutual agreement, you will be offered a 6 week (minimum) vacation studentship in the same research group. The supervisor and student will decide the exact timing of this placement.

Supervisor Guidance

Prior to your SSC, the supervisor will be advised whether the medical student has any background training in experimental work.

The supervisor will be asked to meet with you, preferably on day 1 or 2 to discuss the aims/objectives of the SSC. Supervisors will be asked to provide reading material at least 8 weeks before the commencement of the SSC. Supervisors will be encouraged to give detailed feedback in the assessments.

Timeline

Third year students can do their SSC in either January/February or May, whilst 2nd year students can only carry out their SSC during the May block due to course commitments. The deadlines for most bursary applications are in the spring, those undertaking their SSC in January/February can use the initial 4 weeks to prepare a bursary application.

For students doing the SSC in the May block, you will need to apply for a bursary for your work in the summer vacation before you start the SSC (usually between January and March)

This may seem challenging but your supervisor will help you to write the application.

Important dates for January block SSCs

12 noon on 28 September 2018	Deadline for submitting CV, paragraph on why you would like to undertake an SSC in Research Practice and your top 3 project choices
5 October 2018	Deadline for selecting SSCs on E-Vision
21 January 2019	Start SSC in Research Practice
22 February 2019	Submit project update report, logbook and bursary application forms
30 August 2019	Submit final report (to include SSC block project work and vacation studentship component to the funding body and DCAT)

Important dates for May block SSCs

12 noon on 28 September 2018	Deadline for submitting CV, paragraph on why you would like to undertake an SSC in Research Practice and your top 3 project choices
5 October 2018	Deadline for selecting SSCs on E-Vision
6 May 2019	Start SSC in Research Practice
7 June 2019	Submit project update report, logbook and bursary application forms
30 August 2019	Submit final report (to include SSC block project work and vacation studentship component to the funding body and DCAT)

Contacts

SSC in Research Practice Lead

Professor Ewan Pearson, Director DCAT

Email: E.Z.Pearson@dundee.ac.uk

SSC in Research Practice Administrator

DCAT Administrator

Email: dcat@dundee.ac.uk

How to Apply

There are only 5 places available on this SSC. To apply, submit the following to dcat@dundee.ac.uk by 12 noon on Friday 28 September 2018.

- A brief CV including all your course grades to date
- A short paragraph (200-300 words) about why you want to do an SSC in research practice
- An SSC in Research Practice application form

NB – the deadline has been specifically chosen with a view to informing you whether you have been selected by the 2 October, i.e. before the final closing date for SSCs on 5 October 2018.

Assessment

You will be assessed on 3 different items:

1) Supervisor's evaluation

Your supervisor will be asked to complete a standard SSC report form at the end of the 4 week component of the SSC. This will comprise the majority of the marks for the SSC. Key areas they are asked to score are attainment of course objectives, interest and motivation, and reliability. An example form is shown in Appendix 1.

To allow standardisation of marks for all students participating in this SSC, Professor Pearson will also allocate marks for the logbook, report, and application form, and these will be considered in addition to the supervisor's evaluation when awarding an overall mark.

2) Experimental Logbook

All experimental research requires a logbook. You will be required to submit your logbook for assessment, and its format should be exactly as instructed by your supervisor. This means that every logbook is different.

Your logbook should demonstrate that you can formulate a scientific question, determine how to answer individual components of that question, record results, analyse results, draw conclusions and move on to the next question and do it again! It can be in any format, and it's okay to be messy, to have crossings out, etc - we're expecting a working lab book. This should be maintained throughout the SSC and should not involve a mad rush at the end.

3) Report

The 300-500 word update report should describe what you did, why you did it, and what the outcome was - so essentially this is the summary and conclusion to your lab book. A useful model is a scientific abstract, with the addition of a reflective component at the end about what you learnt or found challenging. There will inevitably be lots of cross over between your bursary application (which is about what you want to do) and your report (which is about what you have actually done).

Guidelines on how to outline your report can be found in Appendix 2

****In addition, you will be expected to write a bursary application form. However, because the May-block students will require more help from their supervisors than the Jan-block students, this no longer forms part of the assessment.****

Bursary Application Form

The exact form of the bursary application will depend on which funding body you are submitting it to. You may submit more than one bursary application form. You will be expected to seek advice and guidance from your supervisor for completion of the bursary application form.

Please note if you are doing your SSC in the May block, you should contact your supervisor in January to discuss bursary applications for the summer component of the SSC as if you wait until you are undertaking the SSC, then funding opportunities will be limited.

Handing in your documentation for assessment

Students must submit their logbook to the DCAT Administrator, by 5pm on 22 February 2019 (January block) or 5pm on 7 June 2019 (May block). A copy of the bursary application form and the report should be sent to dcat@dundee.ac.uk. You should also upload your report to TURNITIN as requested by the Medical School.

The vacation component of the SSC in Research Practice

Aim of the vacation component of the SSC in Research Practice

It takes a while to become competent in a laboratory/ research group. Most SSCs are only 4 weeks long, and this just doesn't give sufficient time to understand the science behind a research project, formulate a question, and learn how to use the available technologies to answer it.

The aim of the vacation studentship component of this SSC is to give you a further 6-8 weeks to work on your project over a summer vacation. During this time you will continue to be supervised by your supervisor and their team, and it is hoped that you will generate some useable data. In previous years, students have gone on to co-author research publications and posters, and present their work at national and international meetings.

Bursaries

We don't expect you to work over the summer without some recompense.... You will be encouraged and helped to apply for bursary funding for the vacation component of this SSC. Students from Dundee have an excellent record of obtaining bursaries from organisations such as Medical Research Scotland, the Wellcome Trust, the Pathological Society etc. (Appendix 3). The Medical School also has a number of discretionary bursaries which you may be eligible for should your applications to external funding bodies be unsuccessful. ***Please remember that charities are often paying your bursary, which is another very good reason to use this time well.***

Important key facts about vacation scholarships:

- Bursary funding for the summer placement cannot be guaranteed - if you do not get funding for the summer placement you do not have to do it. However, this programme has a 100% track record in vacation scholarship funding, which we hope to maintain!
- A wide variety of funding organisations will support medical students who want to do research. You will be sent an up-to-date list during your SSC (see Appendix 3).
- We suggest that you apply to the funding organisation(s) most appropriate for your project. However remember that organisations like the Pathological Society will fund any kind of lab-based research.
- Because completing bursary applications forms an important part of the SSC in Research Practice, students undertaking a January SSC should complete application forms by the end of your 4 week SSC even if the closing date is months away. Any comments or suggestions that you receive about your form can then be included in the final application, which should be submitted before the relevant closing date. **Students carrying out an SSC in the May block are advised to discuss bursary applications with their supervisor in January. Although it is harder to write about a project that you have not yet started, there is a greater chance of securing a bursary in the springtime as most funding bodies only accept applications for vacation funding in the spring.**
- Each funding organisation that offers vacation scholarships has their own application form, but they are all quite similar. Do check what information is required, and don't try to do it all on the day before the closing date!
- You are encouraged to apply to different organisations for funding to maximise your chances. However, you can only take up one!
- Please copy any applications to dcat@dundee.ac.uk and notify us of the outcome.
- **DCAT expects you to work conscientiously on your project throughout the duration of your studentship (9am-5pm, Mon-Fri). Your project supervisor and DCAT (dcat@dundee.ac.uk) must be notified of any periods of absence. Failure to do so may result in funding being withheld and may be considered a lapse in professionalism.**
- **It is vital that you submit a final report to your funding organisation following completion of your research elective. They will provide guidelines and timescales for this.**

Applying for Bursary Funding

- 1) You should work with your supervisor to complete the bursary applications
- 2) Find out if your supervisor is a member of any research societies that offer summer bursaries to their members. Take note of deadlines and find out what is required.
- 3) You can apply to any society you are eligible for. Your supervisor will help you with project and supervisor/laboratory information. Please consider the ethics and regulatory issues section carefully.
- 4) Any application that requires the signature of the “Secretary of Institution” or “Finance Officer” must be signed by the University’s Research Finance Services (RFS) department. Before RFS will sign a form, they require a Project Registration Form (PRF) to be completed. Please contact the DCAT Administrator (dcat@dundee.ac.uk) at least **2 weeks in advance of the deadline** for assistance with this.
- 5) Other signatures may be required for the application form such as from the “Head of Department” or “Dean of Medicine”, please contact the DCAT Administrator (dcat@dundee.ac.uk) at least **2 weeks in advance of the deadline** for assistance with this.
- 6) Once the signatures have been collected and any required PRFs completed and the form is ready for submission, submit the application according to the guidelines of the funding body. The DCAT Administrator can assist with this where required.

Presenting your work

Once you’ve finished your SSC and vacation studentship, you will hopefully have some data that is worth telling other people about!

- Look out for the **Discovering Research** symposia - these run once a year by the medical student research society (DRAMS).
- Ask your supervisor about **subject-specific opportunities**, as many specialist societies specifically encourage students to present their work
- The **National Student Association of Medical Research (NSAMR)** is a new student-led organisation, which aims to inform medical students about the benefits of careers in clinical research and academic medicine. Supported by the Wellcome Trust, the association was launched in 2011 and will establish a collaborative network of societies throughout the country. This network will enable sharing of ideas and resources, as well as giving students a national voice on issues pertaining to research, academic training and careers. We strongly suggest that you keep an eye on the website <http://www.nsamr.org/> for opportunities to present your work and find out more about research opportunities for medical students.

Appendix 1 Example Assessment Form

The form below is an example of the type of form your supervisor will be asked to complete at the end of your 4 week SSC component.

PHASE 2 SSC ASSESSMENT FORM 2017-2018

Student Name:

Year:

SSC Title:

Period(s):

University Marking scheme:

Reporting Scale	Aggregation Scale	SSC % Equivalent	Description
A1	23	95-100%	Excellent
A2	22	89-94%	
A3	21	83-88%	
A4	20	76-82%	
A5	19	70-75%	
B1	18	67-69%	Very Good
B2	17	64-66%	
B3	16	60-63%	
C1	15	57-59%	Good
C2	14	54-56%	
C3	13	50-53%	
D1	12	47-49%	Satisfactory
D2	11	44-46%	
D3	10	40-43%	
M1	9	37-39%	Marginal Fail
M2	8	34-36%	
M3	7	30-33%	
CF	5	20-29%	Clear Fail
BF	2	0-19%	Bad Fail
*	0		

Please award a specific percentage for each section below.

The marking scheme is shown opposite for guidance.

* Relevant descriptor selected from: CA (Certified Absence); AB (Unauthorised Absence); MC (Medical Certificate); WD (Withdrawn); DC (Discounted); ST (Stopped); NM (Not Marked—generally used where penalties have been applied for plagiarism)

Generic Grade Descriptors*		Percentage
Section 1: Attainment of Course Objectives (Course Work) – weighting 70%		
A	Course work of an exemplary standard. Extensive knowledge beyond that required of the module. Excellent ability to critically appraise material and apply to specific issues. Vastly superior to average student.	____%
B	Course work well above average. Thorough knowledge of the material covered in the course. Above average ability to critically appraise material and apply to specific issues.	
C	Course work of average standard. Adequate knowledge of material covered in the course. Satisfactory ability to critically appraise material and apply to specific issues.	
D	Course work only just meets acceptable standard. Knowledge of material covered is barely adequate. Minimal critical appraisal.	
M	Course work below acceptable standard. Poor knowledge of material covered. Lack of ability to critically appraise.	
CF	Course work well below acceptable standard. Little or no demonstration of knowledge of material covered. Critical appraisal absent.	
BF	Course work not completed.	
Section 2: Interest and Motivation – weighting 15%		
A	Highly self-motivated. Enthusiastic and mature approach to activities.	____%
B	More motivated than the average student. Participates spontaneously and constructively.	
C	Average student. Participates after minimal prompting.	
D	Requires repeated prompting to participate.	
M	Rarely participates despite prompting. Clearly not interested.	
CF	Cannot be prompted to participate.	
BF	Inadequate attendance (see over). No good reason supplied.	
Section 3: Reliability – weighting 15%		
A	Totally reliable. Always present and prompt. Much better than the average student.	____%
B	Better than average.	
C	Expected standard. Can usually be relied on.	
D	Cannot always be relied on. Only just meets acceptable standard.	
M	Unreliability is an issue. Below expected standard.	
CF	Unreliable. Well below acceptable standard. Usually absent/late for duties.	
BF	Totally unreliable	

Student's Name:

Attendance	
Has the student's attendance at the SSC been adequate (see note below)*	
Students will expect feedback on their performance during this module. Please give reasons for the grades awarded, with examples of strengths and weaknesses. Extra detail will be required if you wish to award high (A3 or above) or low (D or less) grades. Marks and comments are routinely made available to students, who may challenge them.	
Signature of Supervisor: Date:	
Print Supervisor's Name:.....	
Grading The overall grade awarded will be calculated as before using the weightings given overleaf to the different components of student performance.	Attendance Attendance at SSCs/SPSSCs is compulsory. In general, they are expected to occupy 4½ days per week. The question of what constitutes adequate attendance is however a matter of judgement for the module supervisor. If the student's attendance during the module has been an issue, please provide details in the Feedback box above - this is likely to be challenged. The more detail you provide, the less likely it is that you will be challenged.
Please return form to: dcat@dundee.ac.uk	

Appendix 2 Report Writing Guidelines

Title

Write a clear, informative title, which describes key elements of your project. Very short or very long titles are not recommended. Using a title and a subtitle separated by a colon is a good way to describe the project in a short space. It's easier to choose a title after writing the abstract.

General format and style

Your abstract should single-spaced in an easy-to-read 12pt font (like Times). Write in the 3rd person. Passive voice is best. Write complete but concise sentences, using present tense for the existing body of facts, past tense for the completed research and define specialised terminology and abbreviations.

Be extremely precise and detailed about your argument and analysis. Don't say "Results of the study will be discussed" or the equivalent, but state what the results are and why they matter.

How to structure the abstract

Abstracts are quite concise in structure, although there is a lot of variation. Each of the sections may include one or more paragraphs.

Section 1

The main focus of the first paragraph should be a general statement about some issue in the field that your project contributes to. Don't describe your project yet but write a sentence which describes the topic of research. Write several sentences indicating the problem to be solved and the hypothesis that was posed and raise the issue that you'll be addressing. (This will provide the opening to introduce your research as the solution to a problem, or as a challenge to a claim made by another academic). Don't just say you're applying someone else's ideas; describe why this adds to knowledge. Alternatively, you can open with one sentence stating what the paper is about and then contextualise it with a general statement about how it connects to an issue in the field.

Section 2

This should be the heart of the abstract. State here that your study offers a solution to the problem described in section 1 and how. Briefly give details about the study, where it was conducted and with whom (number and background of participants, sources of data), how long the study lasted and/or how much data was collected (e.g., hours of recordings). Then summarise your research findings. You should include a detailed description of the results: specify your findings in detail (perhaps introduce key terms you use in the analysis).

Section 3

Write a discussion that gives the conclusion(s) of the research work and a statement of the direction for future research: How do these findings address the issue raised in Section 1? What does this imply for the field? This discussion need not be lengthy, but it should convey that your research has significant implications.

References

You should cite a few references in the text (no more than 3 or so in a 500-word abstract) to show you know the field. Don't waste space with a long list; select the key references only. (It's often best to cite at least one "classic" reference and one "cutting-edge" recent reference. You should also cite anyone who centrally represents the issue you're discussing. Do NOT include a bibliography; save the space for describing your study.

Appendix 3 Funding for Vacation Component of the SSC in Research Practice

This list of bodies that fund vacation studentships has been prepared to provide a guide of some of the funding opportunities available to medical students and a summary of the eligibility criteria. This list is by no means exhaustive and does not list the full eligibility criteria. Once you have selected which funding bodies you would like to apply to, read the application guidelines and eligibility criteria carefully to ensure you optimise your chances of being funded.

Funder	Funding available	Eligibility criteria	Deadline	Further information
Anaesthetic Research Society	£1500 for 6-8 weeks	<ul style="list-style-type: none"> This award is open to members only and should be undertaken under the auspices of an Academic Unit of Anaesthesia. The Student may be appointed later. 	Details not yet available	https://www.niaa.org.uk/Anaesthetic-Research-Society-Vacation-Studentships
Association of Clinical Pathologists	£150/week for up to 6 weeks	<ul style="list-style-type: none"> This fund is open to applications from undergraduate students wishing to undertake research within laboratory medicine The students should be sponsored by ACP members if possible 	Details not yet available	https://pathologists.org.uk/awards/acp-student-research-fund-2018/
British Lung Foundation - Cystic Fibrosis Trust	£1,200 for living expenses and £300 for consumables	<ul style="list-style-type: none"> The student must be named on the application form. Students are normally at a university within the UK, and must be either: a medical student between the end of their second year and the end of their penultimate year, or a Basic Science student in the last two years of their degree. The project supervisor must hold an established academic position within the university or research unit. There may be only one application per supervisor. 	Details not yet available	https://www.cysticfibrosis.org.uk/studentships

British Pharmacological Society	£185/week for up to 10 weeks	<ul style="list-style-type: none"> The supervisor must be an Early Career member, Full member or Fellow The research project must have substantial pharmacological content 	Details not yet available	https://www.bps.ac.uk/membership-awards/support-for-student-members/vacation-studentships
British Society for Antimicrobial Chemotherapy	£270 per week for up to 10 weeks and £500 consumables	<ul style="list-style-type: none"> Candidates should be in the middle years of a full-time first degree course in the sciences, medicine, veterinary medicine or dentistry. Only undergraduates are considered for these scholarships. Projects designed to be presented as undergraduate or postgraduate laboratory practical assignments will not be considered. Only one application per department is allowed. 	28/2/19	http://www.bsac.org.uk/funding/vacation-scholarship/
British Society for Cell Biology	£180/week for up to 8 weeks	<ul style="list-style-type: none"> Studentships will only be awarded for students who have yet to complete their first degree Applications must be made by the prospective supervisor on behalf of a named student Supervisors must be a BSCB member and they may only submit one application The research project must be on a topic in the broad area of cell biology and must not form part of the student's normal degree work 	Details not yet available	http://bscb.org/competitions-awardsgrants/studentships/
British Society for Neuroendocrinology	£140/week for up to 8 weeks	<ul style="list-style-type: none"> The host supervisor should apply on behalf of a selected named student that they consider suitable for a project in their lab. Undergraduate students or students immediately after graduation or prior to starting MSc or PhD studies are eligible. The host supervisor must have been a member of the BSN for at least 6 months. 	1/4/19	https://www.neuroendo.org.uk/doc/Feb%202018_BSN%20Student%20Laboratory%20Experience%20Grant.pdf

Carnegie Trust	£250/week for 2 to 12 weeks	<ul style="list-style-type: none"> • Applicants must be of Scottish birth, or extraction (at least one parent born in Scotland), or have been educated in Scotland at secondary level for at least two years. • Applicants must be undergraduates of a Scottish university in the third year of a four year course or the fourth year of a five year degree at the time of applying (or an equivalent stage for students on a part-time programme). 	31/3/19	http://www.carnegie-trust.org/schemes/undergraduate-schemes/vacation-scholarships.html#background
Genetics Society	£200/week for up to 8 weeks and £750 consumables	<ul style="list-style-type: none"> • Applicants must be undergraduates interested in gaining experience in any area of genetics by carrying out a research project over the long vacation, usually prior to their final year • Applications must be made by the supervisor • Studentships will only be awarded to students who have yet to complete their first degree 	31/3/19	http://www.genetics.org.uk/grants/su-mmer-studentships/
Medical Research Scotland	£250/week for 6 – 8 weeks	<ul style="list-style-type: none"> • Applications to be submitted by project supervisor on behalf of the student 	Details not yet available	http://www.medicalresearchscotland.org.uk/apply.htm