Science Research Practicum
Fall 2018
Credits: 6
Pre-requisites: Dependent on Research Opportunity, List on DIS’ Course Website

What is the Science Research Practicum?
The Science Research Practicum is an experiential learning opportunity for the highly motivated student who has interest in developing science research skills in a professional research setting. The duration of the 6 credit hour course is one semester (4 months). The practicum requires an average of 20 hours a week of laboratory, clinical and/or literature-based research in external research groups at local hospitals, universities or other research institutions. You perform research under the supervision of a lead scientist in the external research group. The supervisor is able to offer both academic and professional advice. In addition to acquiring research experience, the goal is to develop a student/supervisor relationship that benefit both the DIS students and Copenhagen-based research institutions.

Student Profile:
This practicum is designed for highly motivated students who have a strong interest in developing their research skills. The student must be willing to commit a large portion of their semester to an engaging opportunity involving hands-on research in the universities and institutes in the Copenhagen region.

Learning Objectives:
Through this practicum DIS students will learn techniques and skills in their field of interest. Students will be part of an active research team and experience the dynamics of a European research institution. Throughout the semester students will be expected to keep a research journal recording their daily involvement in the research project. At the end of the semester all students involved in this practicum will participate in a Research Symposium allowing them to present their work to their peers and professionals.

Structure of Practicum:
The student’s research project should be a part of a larger ongoing research project at the research institution. The student must be able to enhance the research being performed and investigate phenomena of interest to them and their supervisor, and the greater research team. The project should be self-directed and self-motivated under the supervisor’s guidance and supervision. A gradual transition toward independence is encouraged as a student gains confidence and is able to self-direct his or her work.

It is not expected that the student be able to take on a project where s/he is able to obtain definitive publishing results. The project chosen and agreed upon between the student and supervisor should be focused, and designed to produce results within the DIS semester calendar. While it is not necessary for the results to be significant in that the results find a solution to the problem or hypothesis proposed, it can be argued that any results to a proposed question are significant to the next phase of a research project.

DIS Contact
Stephanie Clemente, Science & Health Project Manager, scl@dis.dk
S&H Office: Vestergade 10 – B12

The research project should be designed and implemented with the knowledge that the student will have to write a research paper based on his or her work which will include the following:

- Abstract
- Introduction
- Background
- Method(s)
- Results
- Discussion
- Conclusions

In the paper, a clear and logical thought process to the reasoning behind the student’s research, based on background and learned knowledge, should be made evident.

This DIS course will primarily located at an external institution. Students will need to arrange a schedule with their supervisor which will allow them to complete an average of 20 hours per week (total hours may vary according to research opportunity and expectation of supervisor.)

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Throughout the semester students will be expected to complete various assignments to verify their involvement and learning; these will be of benefit to both the student and supervisor. The students will be expected to compose the following:

A literature summary review that will give the student the opportunity to seek out existing peer-reviewed articles, and therefore enhance their scientific knowledge regarding their specific research field. In addition, it is essential that the student has knowledge of previously produced research by the research institution with which they are working with.

An outline of the research project that will provide the student with a foundational structure to help guide the project’s completion. By creating an outline, the student will be able to better comprehend the objective of his/her efforts. The supervisor will also be able to use the outline to assess areas where the student’s current knowledge and understanding is lacking.

A research abstract that will explain the importance and overall objective of the research the student has done. The abstract provides the student an outlet to think about their research concisely, therefore gleaning the most essential points from the project completion.

In conjunction with the submission of the research abstract there will be a poster session where students will present the research they have carried out throughout the semester. Students will create a poster that supports their abstract and outlines the main aspects of their work; this poster will be created with the guidance of approval by the research supervisor. The poster session will be part of a research symposium organized by DIS.

The research paper that is the final product of the research practicum. The paper will explain the student’s work throughout the semester; this will be expected to include the overall process, the project’s significance, and the overall contribution to the field of research in which they were engaged. Please note this research paper is not produced with the intent of publishing.

Evaluation:

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<tr>
<th>Assignment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Literature Summary Review</td>
<td>(5%)</td>
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<tr>
<td>Outline of Research Project</td>
<td>(5%)</td>
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<tr>
<td>Abstract</td>
<td>(5%)</td>
</tr>
<tr>
<td>Research Paper (10-15 pages)</td>
<td>(60%)</td>
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<tr>
<td>Poster Presentation at Research Symposium</td>
<td>(20%)</td>
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<tr>
<td>Participation</td>
<td>(5%)</td>
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Throughout the semester there will be 2-3 workshops you will be expected to partake in as an SRP student. These workshops will include a general overview/introduction of basic scientific skills your supervisor will expect you to have a general understanding how to execute and practice. Some examples include but are not limited to:

- Scientific Literature Search Skills
- Basic Statistics
- Interpreting and Analyzing Data and the Significance of Results
- Creation of Posters (Choosing the information to put on and leave out when displaying Research)
- Structure of Abstracts and Research Paper

Science Research Practicum Coordinator

Stephanie Clemente, Project Manager, Science & Health Programs
scl@dis.dk, +45 33 76 54 77
Science Research Practicum Workshop Lecturers

**Bettina Hornbøll, PhD**
Founder of CogniCation; cognitive communication. PhD in neurobiology doing imaging of the effect of serotonin during emotion processing in the brain, while challenging participant’s natural serotonergic levels. The project has been conducted at Danish Research Center for Magnetic Resonance (DRCMR) and Center for Integrated Molecular Brain Imaging (CIMBI). M.Sc. Neurobiology (University of Copenhagen, 2006). B.A. Biology (University of Copenhagen, 2004). With DIS since 2012

**My von Euler-Chelpin, PhD**
Associate Professor, Centre for Epidemiology and Screening, University of Copenhagen Ph.D. (Public Health, University of Copenhagen, 2007). Research Consultant at UNESCO, Paris and Nairobi, and International Committee of the Red Cross, 1986-2002. Researcher, Center for Epidemiology and Screening, University of Copenhagen, 2002–present. With DIS since 2011.

**Practicum Schedule**
In addition to these dates, **weekly meetings** with your supervisor will be expected. It is up to you and your supervisor to find a time to check in with each other. If you need more meetings it is your responsibility as the student to request such from your supervisor.

**Before Arrival to Copenhagen**
**June 15 – Friday August 17**
Once accepted you will be connected to your supervisor(s) via email. You will then be expected to further contact your supervisor(s) and briefly introduce yourself further. Please note some supervisors may give you 10 – 15 hours of research literature to be read before your semester start.

**Monday, August 20**
Science Research Practicum Orientation
Location: DIS, TBA
Time: 16.30- 17.30
Introduction to Science Research Practicum

**Thursday, August 23 or Friday, August 24**
Meet and Greet with your Supervisor
(NOTE: Your meeting times with your supervisor will be provided to you during your SRP Orientation)

**Thursday September 6 OR Friday September 7, 8.30-9.50 (Group A) OR 16.00-17.20 (Group B)**
(Workshop you are expected to attend is based on your schedule and assigned groups)
Workshop 1:
- Scientific Writing Skills (References and more)
Readings for Workshop: Check Canvas
Check in Meeting 1
Location: DIS, TBA

**Friday, September 7**
Literature Summary Review Due by 16.00
Email copy to supervisor

**TBA, (Mon Sept 17- Fri Sept 21), 8.30-9.50 (Group A) OR 16.00-17.20 (Group B)**
Workshop 2:
- "Is this result true? The analysis of data."
  We look at the concepts of bias, chance and confounding.
  How can they affect whether a result can be considered as true or not, and what can we do about it.
Readings for Workshop: Check Canvas
Check in Meeting 2
Location: DIS, TBA

[Science Research Practicum](#) | DIS |
Friday, September 21
Outline of Research Project Due by 16.00
Email copy to supervisor

TBA (Mon Nov 5 – Fri Nov 9)
8.30-9.50 (Group A) OR 16.00-17.20 (Group B)
Workshop 3:
  • Posters, Abstracts and Research Paper
Readings for Workshop: Check Canvas
Check In Meeting 3
Location & Time: DIS, TBA

Thursday, December 6
Abstract Due by 16.00
Email copy to supervisor

Thursday, December 6
Submission of Poster by 8.00
More detailed information on how to submit poster and in what format will be given a month in advance.

TBA, Monday, December 10 – Wednesday, December 12
Science Research Practicum Poster Symposium
Present your research through a Poster Session
Location: DIS, TBA
Time: 16.00 – 18.00
More detailed information provided at a later date.

Thursday, December 13
Research Paper Due by 16.00
Email copy to supervisor
Timeline and Procedures in the Application Process of the Science Research Practicum

<table>
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<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>Apr 1</td>
<td>Science Research Practicum Research Opportunities for Fall 2018 are available on DIS' website. (click here)</td>
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<tr>
<td>May 15</td>
<td>Deadline to apply to SRP</td>
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<td>May 15 – Jun 15</td>
<td>You may be requested for a Skype interview with a potential Research Supervisor at this time.</td>
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<tr>
<td>Jun 15</td>
<td>You will receive a response no later than Jun 15 of your SRP applicant status.</td>
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<tr>
<td>Jun 15 – arrival to CPH</td>
<td>If accepted, you will be connected to your SRP supervisor(s) via email. It is highly suggested that you then briefly introduce yourself to your supervisor. Please note: You may be expected to read up to 10-15 hours’ worth of research literature before the semester start.</td>
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Note: The below application form can be obtained from DIS’ Online registration system. All students will have access to it once enrolled into DIS.

**Application for Science Research Practicum:**
If you are interested in participating in the Science Research Practicum, please submit the following materials to DIS after Apr 1 and no later than May 15.

- Part I. Complete Supplemental Science Research Practicum Application
- Part II. One Letter of Recommendation from an academic advisor or instructor.

Please note: Science Research Practicum does not use a rolling admission process. Your application will be reviewed by the academic staff in Copenhagen. During this time, you may be requested to take part in a skype meeting. If you are chosen to participate in the Science Research Practicum you will receive an email of acceptance no later than one month prior to the start of the semester and at that point will be enrolled in the 6-credit Science Research Practicum Course. 

* Prior to your acceptance into the practicum you should register for alternative courses to meet the requirements of being a full-time student.

**Supplemental Science Research Practicum Application:**
Part I. Supplemental Application Deadline: May 15 to enrollment_services@dis.dk
In the subject line of your application email please write: SRP_CPH_LastName_FirstName_Application
Your responses to the following questions should be sent in a word or pdf document with the following information in the header: SRP_CPH_LAST_NAME_FIRST_NAME_APPLICATION.

**Please keep each response to a maximum of 500 words.**

1. Please list up to 3 Science Research Practicum opportunities that interest you most in a clear order from most interested to less interested. You can find a complete list of SRP research opportunities available for Fall 2018 on DIS’ website.

2. **DESCRIBE YOUR PRIOR RESEARCH EXPERIENCE.** Include any lab courses and/or research-oriented courses you may have taken. Tell us about the computer/mechanical skills you have that may be helpful in a laboratory setting. Be specific about the nature of your research experience(s) and your responsibilities.

3. Why do you want to participate in the DIS Science Research Practicum? Be as specific as possible about your aspirations and goals?

4. What skills and characteristics do you have that qualifies you to carry out novel international research successfully?

**Part II. Please provide One Letter of Recommendation from an academic advisor or instructor**
I.e. A professor whose class you have taken and/or lab you have been an active participant in.

The letter should be no more than **one page in length** and submitted by an advisor/instructor that is in a position to describe your skills, characteristics and academic promise. It is suggested the letter of recommendation address:

- Your ability to work independently and to collaborate and work with others
- Any specific examples that illustrates your engagement with a project, research, assignment, etc.

Please send your letter of recommendation to enrollment_services@dis.dk by **May 15**.
In the subject line of your recommendation email, please write:
SRP_CPH_LastName_First Name_ Recommendation

**Agreement:**
By submitting an application to participate in the Science Research Practicum I agree to the following statement:

*I understand that the Science Research Practicum requires a full commitment to the research group I am placed with and will be a priority in my study abroad experience.*