Natural Sciences and Engineering Research Council
Undergraduate Student Research Award

The Department of Biology deadline is: January 12, 2018

Deliver to: North Campus Bldg. 301D

Details downloaded from the NSERC site (slightly moderated)
NSERC website: www.nserc.ca
TRANSCRIPTS ARE NOT NECESSARY IF YOU ARE A WESTERN STUDENT.

DEPARTMENTAL PROCEDURE

List of Interested Faculty follows departmental procedure

What are these awards for?
Undergraduate Student Research Awards (USRA) are meant to stimulate your interest in research in the natural sciences and engineering. They are also meant to encourage you to undertake graduate studies and pursue a research career in these fields. If you would like to gain research work experience that complements your studies in an academic setting, these awards can provide you with financial support through your host university. NSERC encourages qualified Aboriginal students to apply to this award.

Are you eligible for an award?
To be eligible to apply for an award, you must:
be a Canadian citizen or permanent resident of Canada;
be registered, at the time you apply, in a bachelor's degree program at an eligible university; and
have obtained, over the previous years of study, a cumulative average of at least second class (a grade of "B" or "B-", if applicable) as defined by your university.
In addition...

If you already hold a bachelor's degree and are studying toward a second bachelor's degree, you may still apply to this program.
You may hold only one USRA per fiscal year (April 1 to March 31).
You may hold a maximum of three USRAs throughout your university career.
To hold an award, you must:

- have completed all the course requirements of at least the first year of university study (or two academic terms) of your bachelor's degree;
- have been registered in the term immediately before holding the award in a bachelor's degree program at an eligible university;
- not have started a program of graduate studies in the natural sciences or engineering; and
- be engaged on a full-time basis in research and development activities in the natural sciences or engineering during the tenure of the award.

**Who is not eligible?**

You are not eligible for an Undergraduate Student Research Award if:

- you are currently enrolled in an undergraduate professional degree program in the health sciences (e.g., MD, DDS, BScN); or
- you hold higher degrees in the natural sciences or engineering.

**Value of awards**

These awards have a value of $4,500 for a full 16-week period. Universities are required to supplement the amount of the award by at least 25 percent of its value using other sources, such as university funds, NSERC grants, or any other research funds. Universities may also provide fringe benefits.

A travel allowance may also be granted if you take up the award at a university other than the one at which you are currently registered (see Travel allowances for more information). NSERC will not reimburse the university for any period during which you worked part time. No payment will be approved for any vacation leave you take during tenure of the award.

**Duration of awards**

The duration of the award is 16 consecutive weeks on a full-time basis. You may hold an award at any time during the year as permitted by your academic program. Tenure may start on a date acceptable to both you and your host institution.

**Where can you hold your award?**

Once NSERC has approved your USRA for tenure at one particular institution, you may not transfer it to another institution.

You must work under the supervision of a faculty member who holds an active NSERC research grant (e.g., Discovery, CREATE, Strategic, Research Partnerships), either at the time you submit the application or when you hold the award. In addition, faculty members whose research grants terminated on March 31, 2018, but who have been given an extension to use up the remaining funds from April 1, 2018, to March 31, 2019, are eligible to supervise a USRA student in the summer or fall of 2018 or the winter of 2019.

**How do you apply?**

To apply for these awards, you must complete an Application for an Undergraduate Student Research Award Part I (Form 202) on line at [http://www.nserc.gc.ca/forms/formtable_e.htm](http://www.nserc.gc.ca/forms/formtable_e.htm). Just follow the instructions and print a hard copy and deliver to NCB 301D by January 12, 2018. Students complete only Part 1. Transcripts will be provided by the university. The proposed supervisor must complete Part II of Form 202 and deliver a hard copy to NCB 301D by January 12, 2018. The whole application is to be typed.
**Award decisions**

Each university will inform applicants of its award decisions after it has completed its selection process.

**Payment of awards**

NSERC will pay its contribution directly to the university. You will receive your payment from the university. The university will issue payments to you for the total value of the award in accordance with its pay procedures. It will also issue a T4 or T4A slip (Statement of Income) to you at the end of the calendar year.

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**DEPARTMENTAL PROCEDURE**

1) Find a faculty member in the Department of Biology to be your supervisor. This person must hold an NSERC grant.

2) After finding a supervisor, notify Stefani Tichbourne (stich@uwo.ca) that you are applying especially if you are not from Western then complete the application form:

   a) Go to the NSERC website (http://www.nserc-crsng.gc.ca/OnlineServices-servicesEnLigne/Index_eng.asp) and follow the links from ‘PDF Forms and Instructions’. Complete the application form online.

   b) Go this video for help with filling in your application (very useful for first time applicants). http://www.nserc-crsng.gc.ca/Students-Etudiants/Videos-Videos/usra-brpct_eng.asp

   c) Make sure you use your UWO e-mail address.

   d) Complete an ‘Access to Academic Records Form of Consent’ which will allow Stefani Tichbourne to pull your academic transcript.

   e) NSERC requires students to upload their transcript before allowing them to print off their application. Students must first get their academic record from Stefani Tichbourne (stich@uwo.ca) and then upload the file to NSERC.

   f) Print a hard copy once all has been verified for handing in.

3) Complete a ‘Biology Student Statement Form.’

4) Prepare a 1-2 page resume.

5) Submit the signed, hard copy of your application form, the ‘Access to Academic Records Form of Consent, the ‘Biology Student Statement Form, and your resume to Stefani Tichbourne in NCB 301D.
Interested Faculty

Students can approach other Biology faculty members not listed here but remember the Biology faculty member must hold a NSERC grant.

A complete list of Biology faculty members is located at: http://www.uwo.ca/biology/people/faculty.htm

Dr. M. Bernards, BGS 2025, Ext. 86477, bernards@uwo.ca
Website: http://www.uwo.ca/biology/Faculty/bernards/index.htm
Project title: Suberin analysis of an Arabidopsis peroxidase mutant

Dr. G. Kelly, WSC 359, Ext. 83121, gkelly@uwo.ca
Website: http://www.uwo.ca/biology/Faculty/kelly/index.htm
Project title: Cellular signaling mechanisms that pattern the development of the vertebrate embryo
Check out website "publish.uwo.ca/~gkelly.

Dr. N. Keyghobadi, BGS 2076, Ext. 80471, nkeyghob@uwo.ca
Website: http://www.uwo.ca/biology/Faculty/keyghobadi/index.htm
Project title: Ecology and genetics of butterflies

Dr. K. Hill, WSC 333, Ext. 81337, khill22@uwo.ca
Website: http://www.uwo.ca/biology/Faculty/hill/index.htm
NSERC-USRA research project KA Hill Laboratory – Mutagenesis
NSERC USRA research projects in the Hill laboratory will centre on analysis of the impact of mutations on the mouse genome. Researchers will analyze the nature, number and spatial distribution of a variety of mutations occurring in the mouse genome in the context of cancer and evolution. The research tools used are genotyping array technology and bioinformatics approaches to the analysis of patterns in mutagenesis detect with the arrays.

Dr. S. Macfie, B&GS 2051, Ext. 86487, smacfie@uwo.ca
Website: http://www.uwo.ca/biology/faculty/macfie/
Research in the Macfie lab focuses on plant stress and spans the fields of physiology and ecology. We have worked on a variety of species and a number of contaminants, with an emphasis on metals. Most of our experiments are done in hydroponic culture in a controlled-environment chamber, but some involve potted plants in the greenhouse or micro-culture on agar-based media. The physiological responses of plants to metal stress include (i) production of metal-binding molecules, such as phytochelatins and low molecular weight organic acids, (ii) sequestration of metals in non-metabolic sites, and (iii) up-regulation of enzymes to mediate the metal-stress response. We also have on-going projects to determine whether a class of organic contaminants called quaternary ammonium compounds can be taken up by plants and if they are potentially harmful to crops. The long term goals of all these experiments include (1) reducing the amounts of contaminants that are taken up by edible plants and (2) increasing the amounts of contaminants taken up by plants that could be used for phytoremediation.
Dr. J. McNeil, B&GS 3066, Ext. 83487, jmcneil2@uwo.ca
Website: http://www.uwo.ca/biology/Faculty/mcneil/index.htm
Subject area: Some aspect on insect chemical ecology and/or using isotopes as a tool for studying insect migration

Dr. A. Moehring, B&GS 2080, Ext 85596, amoehrin@uwo.ca
Website: http://www.uwo.ca/biology/Faculty/moehring/index.htm
Project title: Genetic and neural basis of female receptivity

Dr. B. Neff, Collip 204, Ext. 82532, bneff@uwo.ca
Website: http://www.uwo.ca/biology/Faculty/neff/index.htm
Project: Behavioural ecology of fishes.
Understanding how hormones affect behaviour is a major component of Dr. Neff's research program. This project will combine field work on sunfish at the Queen's University Biological Station with molecular and other laboratory analyses at Western University.

Dr. A. Percival-Smith, WSC 305, Ext. 84015, aperciva@uwo.ca
Website: http://www.uwo.ca/biology/Faculty/percivalsmith/index.htm
Projects: (1) Analysis of Sex combs reduced mutant alleles; (2) Analysis of the role of proboscipedia in maxillary palp development; (3) Genetic analysis of the role of the homeodomain in FTZ function

Dr. J. Staples, BGS 3020, Ext. 84057, jfstaple@uwo.ca
Website: http://www.uwo.ca/biology/Faculty/staples/index.htm
Project title: Measure ROS damage in a hibernating mammal

Dr. G. Thompson, BGS 2068, Ext. 86570, graham.thompson@uwo.ca
Website: http://www.uwo.ca/biology/Faculty/thompson/index.htm
Project: Behavioural genetics and sociobiology

Dr. D. Way, BGS 2030, Ext. 88734, dway4@uwo.ca
Website: http://www.uwo.ca/biology/Faculty/way/index.htm
Project: Climate change effects on boreal tree physiology

Dr. L. Zanette, CB 207, Ext. 88316, lzanette@uwo.ca
Website: http://www.uwo.ca/biology/Faculty/zanette/index.htm
Project: Predator-Prey Interactions: fear effects on wildlife prey

Dr. T. Drysdale, tadrysda@uwo.ca, 519-685-8500 x. 55072
Website: http://www.uwo.ca/physpharm/faculty/drysdale_thomas.html
Project Area: The goal of my lab is to understand the molecular events that govern the development of specific org.ans. In particular, we are interested in the early development of the cardiovascular system, the lung and thyroid. We have found that retinoic acid is a critical signaling molecule in controlling the differentiation of these organ systems. We are also trying to understand the cellular events that govern the morphogenesis of the organ. We utilize a combination of classical embryology, molecular biology and genome manipulation to look at these challenging questions.
Opportunities at Agriculture and Agri-Food Canada:

Dr. Frederic Marsolais, Agriculture and Agri-Food Canada, 519-953-6718
Frederic.Marsolais@agr.gc.ca
Projects:
"Transcriptional regulation of gene expression by asparagine in Arabidopsis thaliana"
   We have identified several marker genes responding to exogenous asparagine in Arabidopsis root. The project consists in characterizing potential regulatory elements in their promoter. To this end we have generated transgenic lines expressing fusions of the promoter with the reporter gene luciferase. This project is suitable for a student interested in transcriptional regulation.

"Sulphur amino acid metabolism in seed of common bean"
   Common bean is special because it accumulates an abundant non-protein amino acid, S-methylcysteine, in seeds. The project examines the fate and biosynthesis of this compound in seed. One hypothesis is that they accumulate in the form of phytochelatins. The project involves testing recombinant phytochelatin synthases with the relevant substrates, and performing biochemical analyses of seeds to measure the compounds.