

## Helix Summer Science Institute Summer 2020

### Call for Course Proposals

#### Science Engagement Programs

Science Engagement Programs offers innovative and engaging programs designed to inspire youth and discover exciting topics in science, technology, engineering, and mathematics (STEM). Based out of the Faculty of Science at York University, our programs use a discovery and inquiry-based learning approach that is focused on 'learning by doing'. Programming now includes York Science Saturdays, March Break Science Camp, Science Explorations Summer Day Camp, Helix Summer Science Institute and the Spark Lab Program. More information about Science Engagement Programs can be found at: [scix.science.yorku.ca](http://scix.science.yorku.ca).

#### Helix Summer Science Institute

Helix is a high school enrichment program designed exclusively for high-performing students who have a strong interest in science and mathematics. Helix consists of a series of week-long, non-credit courses for students in Grades 9-12 that run for the month of July. Considered one of Canada's premier high school summer science enrichment program, students study advanced topics in science, engineering, and applied mathematics that draw upon the research strengths of the Faculty of Science at York University.

Students are guided through cutting-edge interdisciplinary topics through a series of lectures, hands-on workshops, experiments, demonstrations, and field trips. Courses are developed and delivered by professors, post-doctoral fellows, visiting scholars, and graduate students. More information regarding Helix summer Science Institute can be found at [helix.science.yorku.ca](http://helix.science.yorku.ca).

#### Instructor Eligibility

Taking place in July, Helix is a high school enrichment program for students with an interest in science and mathematics. The program targets gifted and/or high performing students, with the aim of attracting top students into the Faculty's undergraduate programs. This summer program consists of a series of week-long non-credit courses for students in grades 9 to 12, designed to highlight specific research strengths within the Faculty of Science.

Past instructors have included graduate students and faculty from the Faculty of Science; however, students and faculty from other Faculties at York University are also encouraged to apply. Students in undergraduate programs with significant research experience may also apply to teach Helix. Past alumni, and individuals working in education or industry who have graduated from York University's Faculty of Science or Faculty of Engineering are also encouraged to apply.

#### Instructor Requirements

Upon course approval, successful applicants must submit the following to Science Engagement Programs:

- Current Vulnerable Sector Screen (police background check) for all Instructors
- Copy of their WHMIS and Health and Safety training, issued within the past two years
- Instructors will be required to attend a six-hour training program, to be completed in early June
- Additional qualifications may be required, depending on the course submitted

Students, high school teachers, and faculty who wish to participate and teach with the Helix Summer Science Institute will receive a stipend of \$800 per course developed and \$1000 per course taught at the end of program. This stipend does not affect graduate and research funding graduate students already receive. The stipend received is also subject to taxes and other applicable deductions unique to each individual.

Instructors are expected to:

- Assist in obtaining course materials
- Maintain lab safety procedures with their students
- Clean their labs/classrooms daily
- Report attendance to the Manager
- Submit any required paperwork to Science Engagement Programs
- Perform other duties as outlined in the Staff Manual

### **Delivery Details**

Training session | six hours | Date TBD

For each course, the weekly schedule will be:

Monday: 8:30am – 4:00pm (Opening Ceremonies run from 9:00am-9:30am)

Tuesday: 9:00am – 4:00pm

Wednesday: 9:00am – 4:00pm

Thursday: 9:00am – 4:00pm

Friday: 9:00am – 4:00pm (Closing Ceremonies run from 2:30pm-3:30pm)

### **Contact Details**

Kimberly Tran | Manager | Science Engagement Programs

York University | 416-736-2100 EXT 44552 | [helix@yorku.ca](mailto:helix@yorku.ca)

**Submission Deadline:** November 15, 2019

Meetings/Interviews will be held between December 1, 2019. Courses will be finalized by December 20, 2019.

### **Proposal Submission Details**

Section 1: Application Form

[Instructor A](#)

[Instructor B](#)

Section 2: Biography

[Instructor A](#)

[Instructor B](#)

[Section 3: Resume, and outline of relevant teaching experiences](#)

[Section 4: Substitute Instructor](#)

[Section 5: Course Proposal](#)

**Section 1: Application Form**

**Personal Information – Instructor A**

Please select your title:  Dr.  Ms.  Mr. Email Address: \_\_\_\_\_  
 First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_  
 Phone (Day): ( \_\_\_\_\_ ) \_\_\_\_\_ - \_\_\_\_\_ Phone (Evening): ( \_\_\_\_\_ ) \_\_\_\_\_ - \_\_\_\_\_  
 Home Address: \_\_\_\_\_ Country: \_\_\_\_\_  
 City: \_\_\_\_\_ Province/State: \_\_\_\_\_ Postal Code: \_\_\_\_\_

**Educational Background (please list in chronological order starting with the most recent education)**

Institution and Faculty	Program and Department	Degree / Certification	Year Completed / Expected Completion

**Eligibility for Employment**

1. Please select the following that best applies to you:  
 York University Alumni  Ontario Certified Teacher  Pursuing a PhD degree  
 Pursuing a Master’s degree  Other: \_\_\_\_\_

2. Please select the following that best applies to you:  
 Canadian Citizen  Permanent Resident  Visa Student

3. If you are a Visa Student, do you hold a permit permitting you to work in Canada throughout the dates indicated below?  Yes  No

**If you are a member of the York community, please include your information below:**

York University Employee ID: \_\_\_\_\_ York University Student Number: \_\_\_\_\_  
 Please list your current lab supervisor (if applicable): \_\_\_\_\_

**Availability for Employment**

Please check all that apply:

- July 6-10, 2020  July 13-17, 2020  July 20-24, 2020

Please note that offers of employment are conditional upon instructors attending a mandatory training session. Instructors will be required to submit a police vulnerable sector screening, WHMIS certification, and may have to show evidence of BioSafety training.

**Personal Information – Instructor B**

Will this course be taught by two or more Instructors?  Yes (Complete below)  No (Complete Section 4)

Please select your title:  Dr.  Ms.  Mr. Email Address: \_\_\_\_\_

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Phone (Day): ( \_\_\_\_\_ ) \_\_\_\_\_ - \_\_\_\_\_ Phone (Evening): ( \_\_\_\_\_ ) \_\_\_\_\_ - \_\_\_\_\_

Home Address: \_\_\_\_\_ Country: \_\_\_\_\_

City: \_\_\_\_\_ Province/State: \_\_\_\_\_ Postal Code: \_\_\_\_\_

**Educational Background (please list in chronological order starting with the most recent education)**

Institution and Faculty	Program and Department	Degree / Certification	Year Completed / Expected Completion

**Eligibility for Employment**

1. Please select the following that best applies to you:

York University Alumni       Ontario Certified Teacher       Pursuing a PhD degree

Pursuing a Master’s degree       Other: \_\_\_\_\_

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2. Please select the following that best applies to you:

Canadian Citizen       Permanent Resident       Visa Student

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3. If you are a Visa Student, do you hold a permit permitting you to work in Canada throughout the dates indicated below?  Yes       No

**If you are a member of the York community, please include your information below:**

York University Employee ID: \_\_\_\_\_ York University Student Number: \_\_\_\_\_

Please list your current lab supervisor (if applicable): \_\_\_\_\_

**Availability for Employment**

Please check all that apply:

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### Section 3: Outline of Teaching Experience and Resume

Resume of each Instructor to be attached separately.

### Section 4: Substitute Instructor

This section is required for courses with only one instructor.

In the event that you are called away on emergency or too sick to teach, please list a substitute who will be available to teach the course in your absence (preferably someone with similar education).

Please select their title:  Dr.  Ms.  Mr. Email Address: \_\_\_\_\_

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Phone (Day): ( \_\_\_\_\_ ) \_\_\_\_\_ - \_\_\_\_\_ Phone (Evening): ( \_\_\_\_\_ ) \_\_\_\_\_ - \_\_\_\_\_

Indicate that your substitute has agreed to be available to teach your course in the event you are absent:  Yes, they have agreed  No, they have not been informed

Please note that your substitute will be required to submit a Vulnerable Sector Screen prior to the course commencement. In the event that they must teach the course, full Instructor requirements will be expected (i.e. WHMIS and Health and Safety documentation).

In the event that a substitute is unavailable or cannot be provided, an external Instructor may be brought on at your expense to cover the teaching time.

**Section 5: Course Proposal**

The Helix Summer Science Institutes aims to develop and offer courses from the various departments in the Faculty of Science at York University. In the past, courses have been challenging and exciting, and offer high school students a unique university level experience. Previous years have included projects that include PCR and Gel Electrophoresis, computer mathematical modelling of the transmission of disease, game programming, and practical computations in astrophysics. Course proposals that are submitted may be taught in future years by alternate Helix Instructors if you are unable to teach the course.

This year, course proposals that involve field trips and out-of-classroom experiences will be given preference. Course proposals in the following fields of study are particularly requested: Animal Physiology; Biological Chemistry; Astronomy; Math & Technology; and Biological Physics.

Please note: Helix is not permitted to use human cells or dangerous toxic substances. Please include safe substitutes when developing your course proposal.

In the table below, please identify the materials (including quantity and cost) you require for each activity with approximately 25 students. Each course has an approximate budget of \$400.00. In past years, Instructors have purchased materials at a pro-rated cost from their York University supervisors and/or contacts. Preference will be given to courses that are within budget and have connections to the York community.

**Course Title:**

**Proposed Grade Level:**             Junior (Grade 9 & 10)             Senior (Grade 11 & 12)

**Proposed Stream:** \_\_\_\_\_ (If other, please specify)

Possible Stream Options:

- |                                       |                                      |
|---------------------------------------|--------------------------------------|
| 1. Biomedical Sciences                | 5. Applied Mathematics               |
| 2. Laboratory Medicine & Pathobiology | 6. Environmental Biology & Chemistry |
| 3. Neuroscience                       | 7. Engineering & Applied Sciences    |
| 4. Physics & Astronomy                |                                      |

**Course Description**

To be posted on the Helix website to engage student interest.

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