

# **Future Science Leaders**

Presented by  
Acuitas Therapeutics

## **Information Session**

**2024-2025 Program Year**



# Welcome

Jake Mawer

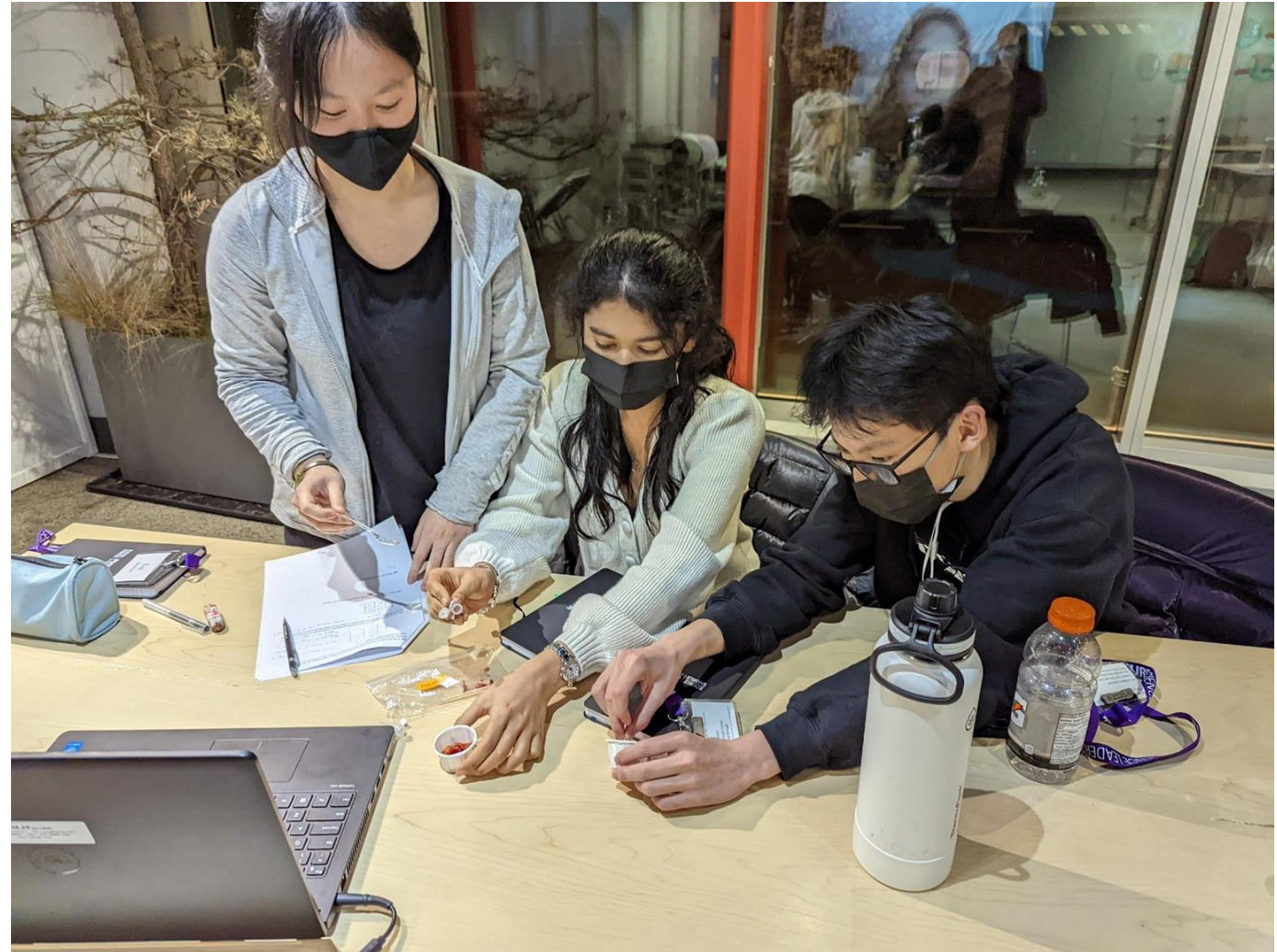
- Program Manager
- [jmawer@scienceworld.ca](mailto:jmawer@scienceworld.ca)
- BSc in Marine Biology, University of Portsmouth
- Post Graduate Certificate of Education, University of London





# Agenda

- FSL Programs
- Discover (Year 1) Program details
- Application Process



# Program Overview





# Program Inspiration

- How can we help create the best scientists and innovators in Canada?
- Give them more support and mentorship when young!
- Science World created Future Science Leaders in 2011
- **The 2024/2025 program year will be our 14th year!**



# The FSL mission

is to empower BC's most inquisitive youth to pursue, achieve, and excel in their STEM aspirations.



# Program Aims

**Build enthusiasm for STEM careers and fields**

**Deepen an understanding of the nature of science**

**Gain skills that are needed to do science**

**Strengthen scientific communication skills**

# Discover

## Year 1

- Grade 10/11
- Survey of many STEM fields
- e.g. flood assessments, cancer genetics
- Single experiment group project
- Write a scientific poster

# Innovate

## Year 2

- Grade 11/12
- Streams;
  - Applied Science
  - Life Science
- Learn advanced technical skills
- 10-week individual project
- Write a scientific paper

# Implement

## Year 3

- Grade 12
- Professional development program
- 2-month internship at STEM workplace



# Program Details







# Year 1 - Program Overview



# Year 1 Program Detail

**When:** Weekly, September to April

4 different session times

- Tuesday 4pm-6pm
- Tuesday 6:30pm-8:30pm
- Thursday 4pm-6pm
- Thursday 6:30pm-8:30pm

**Where:** Science World, Vancouver





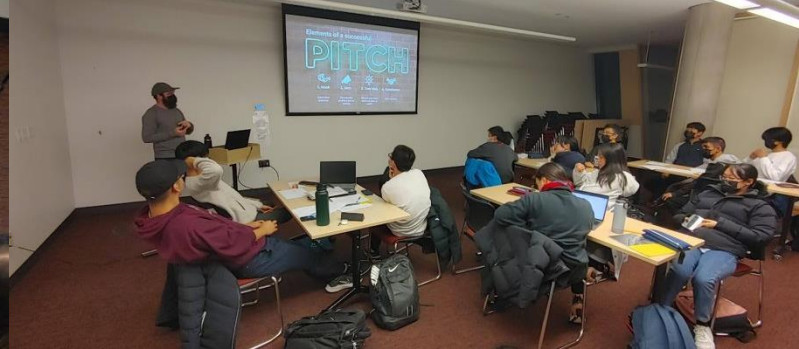
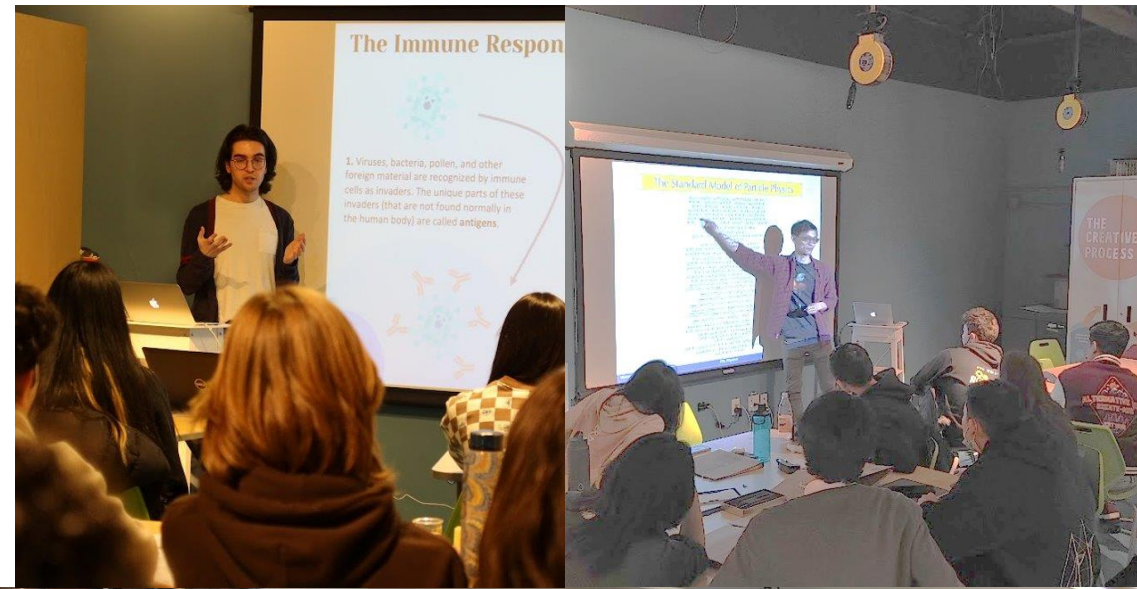
# Discover Course Overview

1. Expert-Lead Sessions
2. Scientific Inquiry Project (SIP)
3. Knowledge Translation



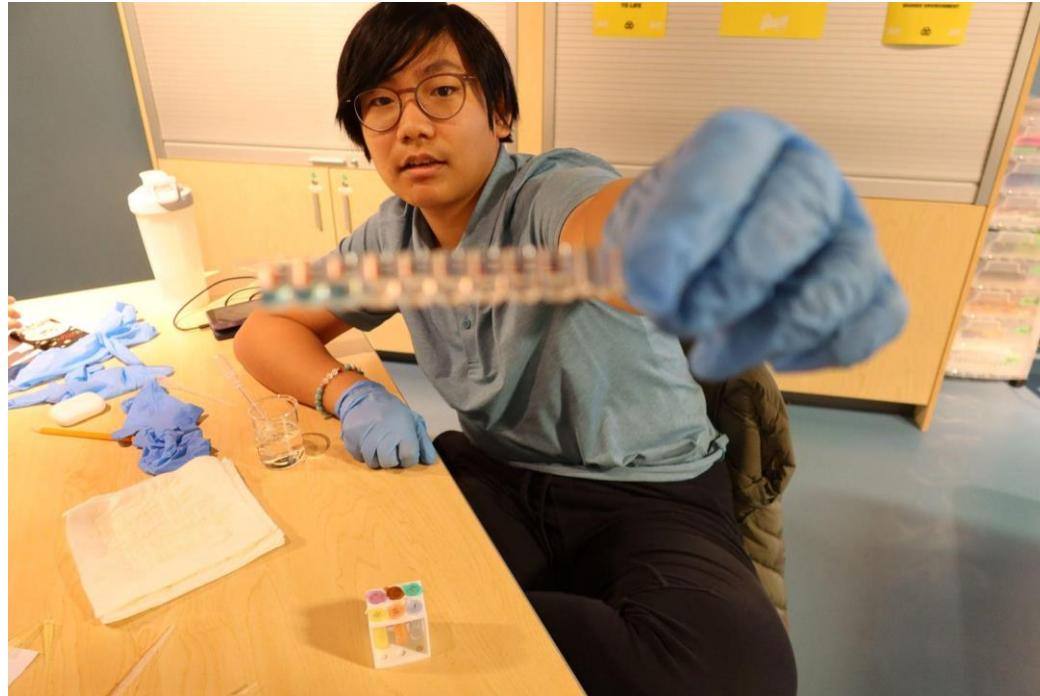
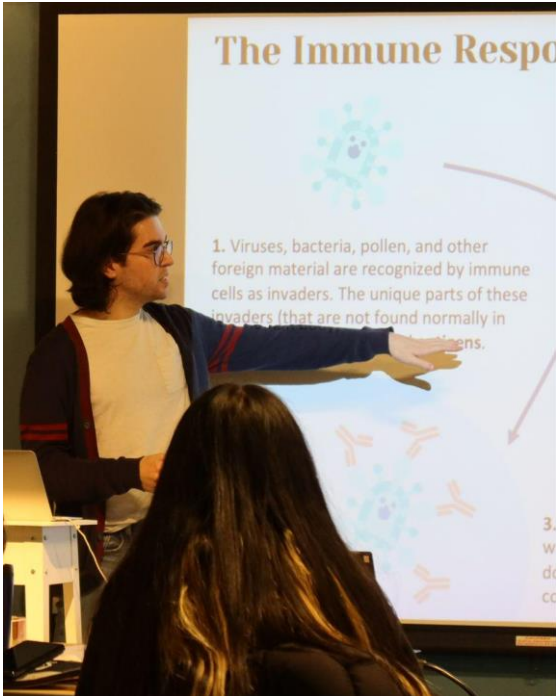
# 1. Expert-Lead sessions

- 16 sessions taught by invited experts
  - Ex. math, environment, technology, biology, data science, engineering, astrophysics, social science
- STEM career (expert instructor or guest speaker)
- Activity (content 10 mins, hands-on learning 60 mins)
- Reflections and Wrap up





# Ex. Subject Expert Themes - Biology



Scientists from the Blood Research Centre and UBC molecular biology labs explored the use of antibodies as detection agents in Enzyme-Linked Immunosorbent Assays



# Ex. Subject Expert Themes - Civil Engineering



Megan Pate (Civil Engineer, City of Vancouver & Year 2 Applied Science Instructor) leads a session on the CO2 costs of construction buildings such as bridges.



## 2. Scientific Inquiry Project

- 12 sessions from wondering to presentation:

Wondering --> Questioning-->  
Experiment Design-->  
Experimentation --> Analysis -->  
Write-up --> Presentation.

- Peer and instructor feedback throughout
- Meet students where they are to provide scaled challenges



## 2. Scientific Inquiry Project

**Goal:** Create questions inspired to address global problems that are new and contribute to a body of knowledge

- **Designing observational studies** that collect data from the natural environment and human behaviour.
  - e.g. Water testing (Dissolved oxygen, E. coli) to evaluate the safety of drinking water sources
  - e.g. Surveys to identify relationships between mental health and music
- **Designing experiments** that test a variable.
  - e.g. Testing home cleaners on their ability to reduce algae
  - e.g. Varying materials used to generate energy from rain fall (triboelectric nano-generators)





### 3. Knowledge Translation

Students use their SLP to practice their ability to communicate complicated scientific ideas in an engaging way to non-scientists.

- Elevator pitches
- Science Communication Games
- Scientific Writing
- Presentations



# Additional Opportunities

- Field Trips
  - 23/24 - 7 planned field trips
  - *Amgen, Acuitas Therapeutics, Stewart Blusson Quantum Matter Institute, TRIUMF, ICORD, False Creek Neighbourhood Energy Utility, STEMCELL Technologies*
- Virtual Field Trips
  - *Past field trips: Tree Ring Lab Arizona, Stanford Advanced Physics Lab, Marine Mammal Rescue Centre, Amazon Warehouse, NASA - Wallop Facility, Advanced Microscopy Lab UVic, Marna labs,*
  - Planned March 2024: Canadarm Mission Control*



# Additional Benefits

- Meet other high school students interested in STEM
- Reference Letters
- Volunteer opportunities
- Eligibility to the Year 2 program





# Year 2 Program



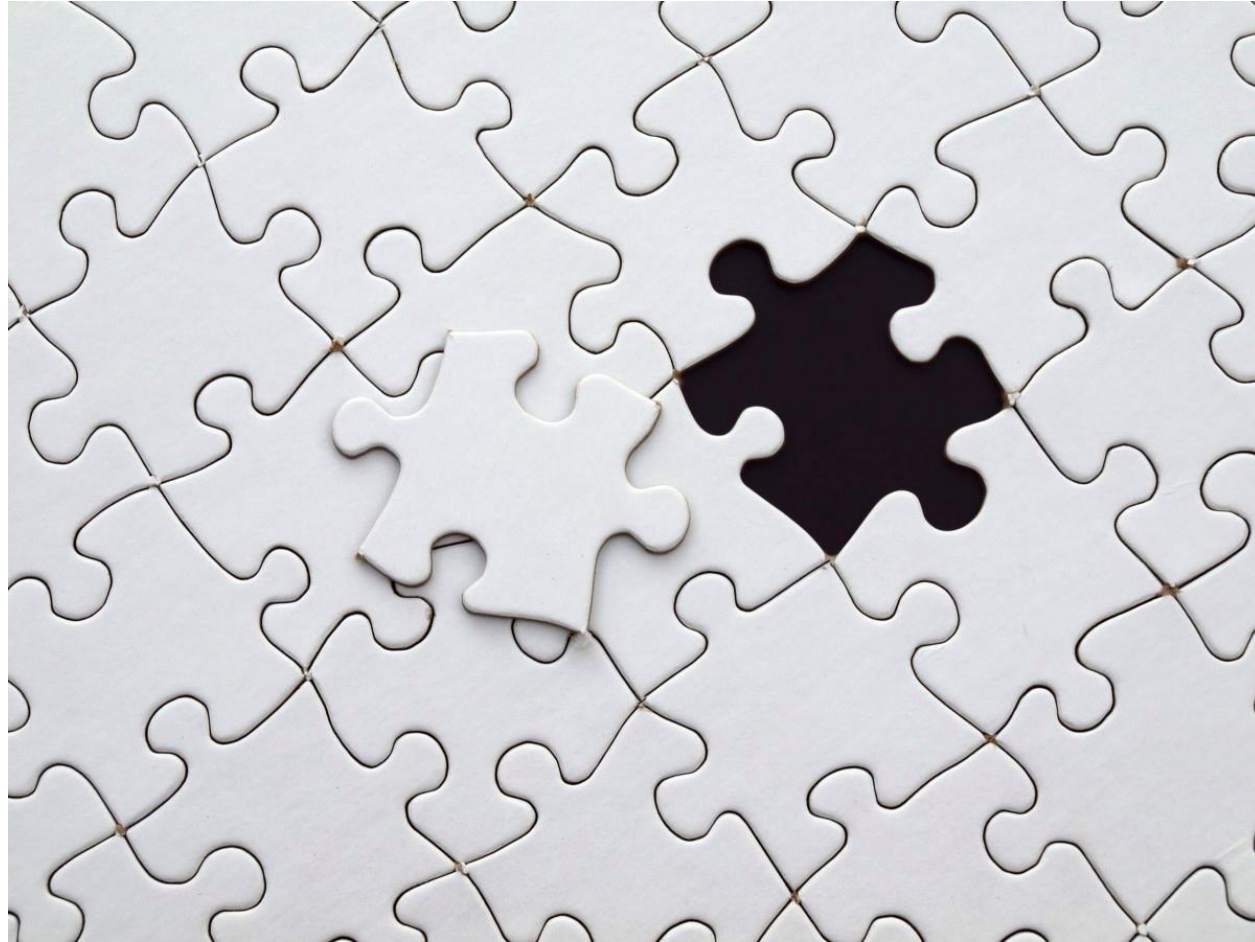


# Application Process





## Finding a good fit: You and FSL

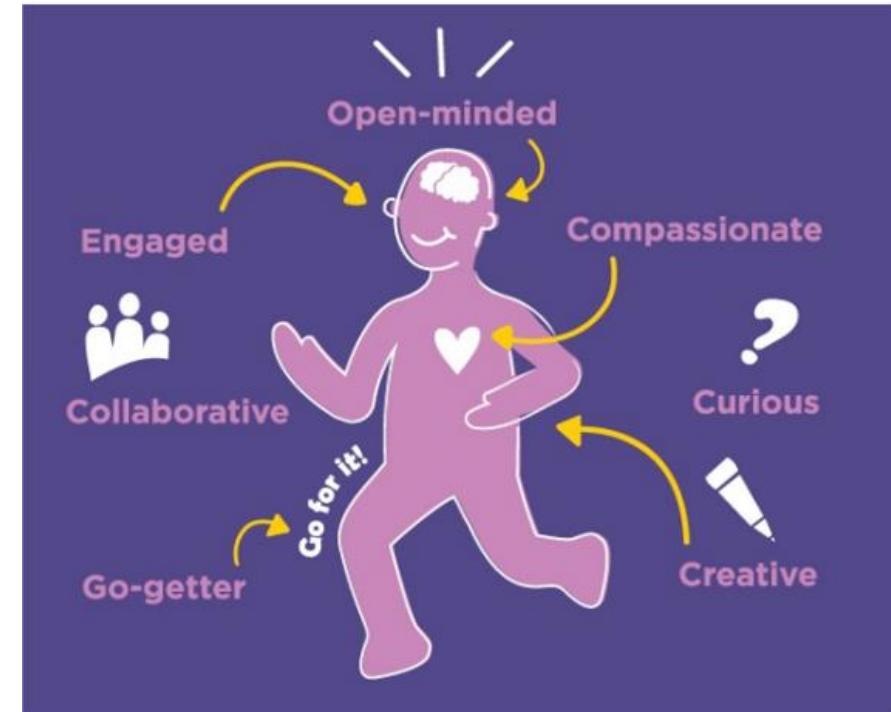


# Eligibility

- **Grade 10 or 11 in September 2024**
- Can demonstrate that they are:
  - curious and excited about STEM topics
  - appreciate learning about diverse areas of science
  - experienced at working successfully as a team member
  - able to work independently
- Can commit to the time (2hrs session + <2hrs homework + travel)

*HINT: In your application directly talk about each of these areas.*

## Ideal FSL Student





# Application Process

- Applications due May 1, 2024
- Attend an information and/or application workshop- *Register on our website*
- Complete application online
- Applications contain:
  - Academic and personal reference contact information
  - Short answer questions - Demonstrate an excitement for learning about STEM (inside and outside of school)
  - Your contact information
- Interview (virtual)
- 2023/2024 Registration and fee payment \$600 + tax, bursaries available



# COVID-19

- In-person
  - as long as there are no public health order or location specific policy against it
- There will be no reimbursements if move programs online





# FSL would not be possible without the generous support of:



Foundation



Anonymous, in Honour of Connor Twa.

We also acknowledge the financial assistance of the Province of British Columbia.

# Contacts

Questions or concerns:

- Jake Mawer, program manager
  - [jmawer@scienceworld.ca](mailto:jmawer@scienceworld.ca)

Websites:

- Read stories about alumni and find out more details:
  - [scienceworld.ca/futurescienceleaders/](https://scienceworld.ca/futurescienceleaders/)
- Examples of student work:
  - [futurescienceleaders.com](https://futurescienceleaders.com)





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