Future Science Leaders

Presented by
Acuitas Therapeutics

Information Session

2023-2024 Program Year

SCIENCE WORLD

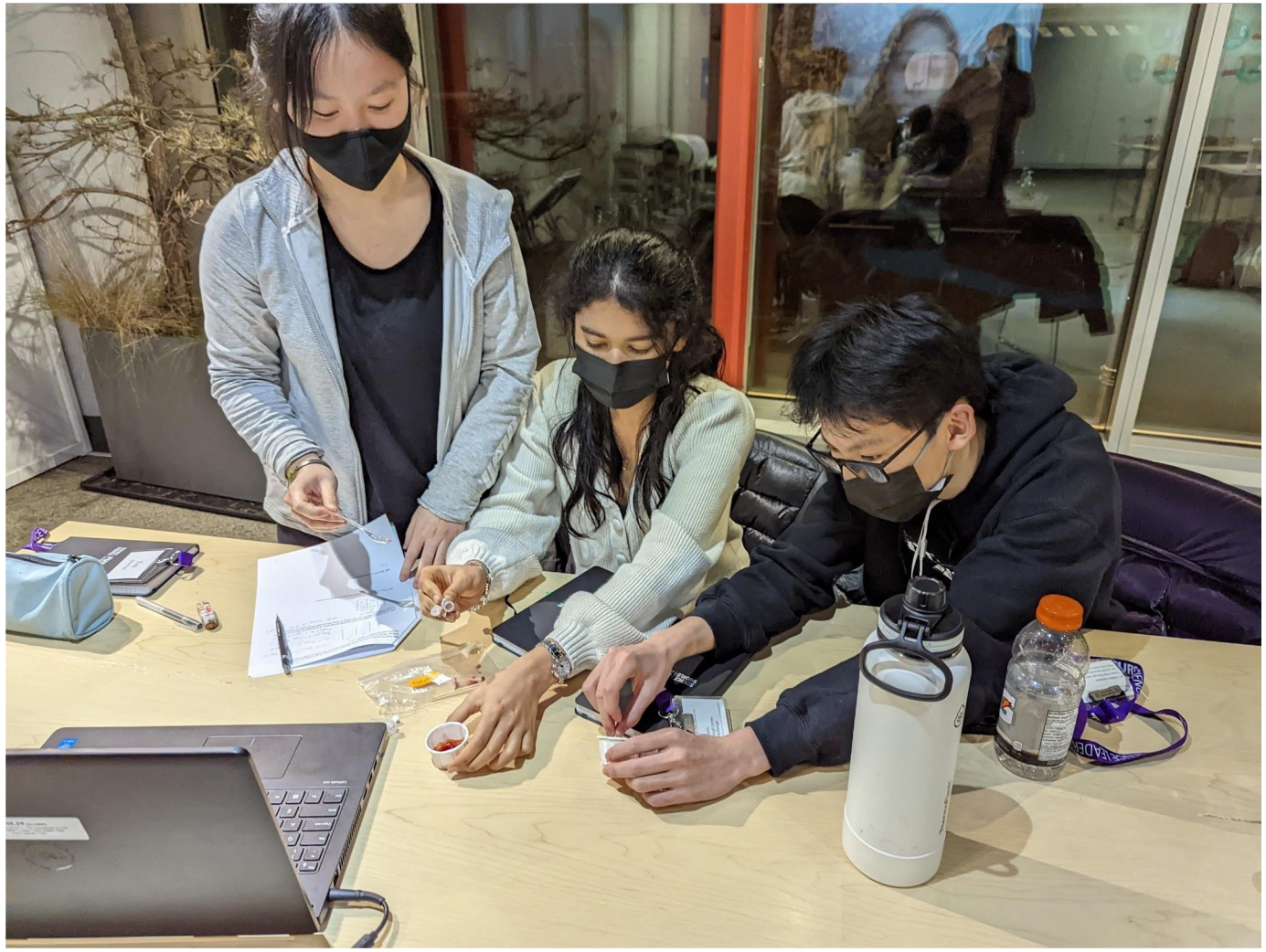
Welcome

Jenny McQueen, PhD,
jmcqueen@scienceworld.ca

- Program Manager
- BSc in Biochemistry, UBC
- Science Co-op & Exchange Program (University of Adelaide)
- PhD Genetics, UBC

Agenda

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



Program Overview

SCIENCE WORLD

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 2023/2024 program year will be our 13th year!**

The FSL mission

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

How do we accomplish this?

Meet and learn from professionals in a variety of careers

Create a lifelong network of like-minded peers

Develop the skills critical for a career in science: laboratory skills and science communication

Collaborate with others through scientific projects

Learn to think critically in a scientific context

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/First Year
- Professional development program
- 2-month internship at STEM workplace

Program Details

SCIENCE WORLD

Discover Program Details

- September - April
  - Winter and Spring breaks
- Weekly 2 hour sessions - hands-on learning
- Locations
  - Vancouver, Science World
  - Not offering Surrey location
- Session times & days
  - Tuesday 4pm-6pm
  - Tuesday 6:30pm-8:30pm
  - Thursday 4:30pm-6:30pm

Discover Course Overview

1. Scientific reasoning → *led by Science World team, 11 sessions + 2 events*

Example: 2022/2023 Schedule

1. Civil Engineering
2. Biology
3. Technology
4. Mathematics
5. Astronomy
6. Social Science
7. Bioinformatics

led by subject experts, 16 sessions
Topics depend on expertise of invited guests

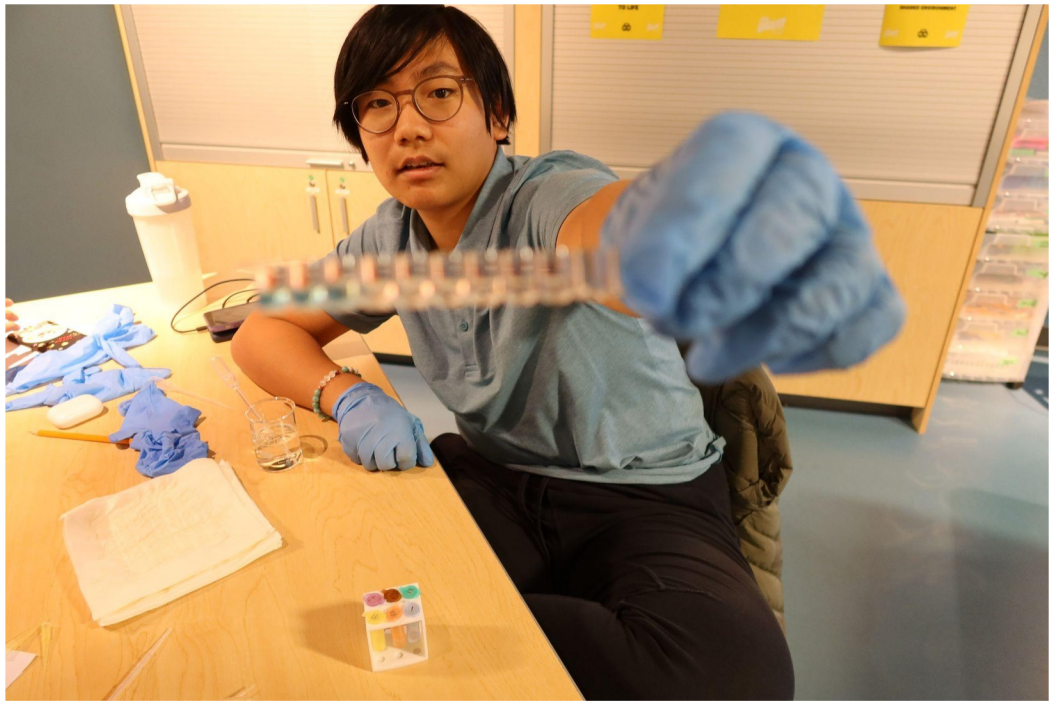
Scientific Reasoning

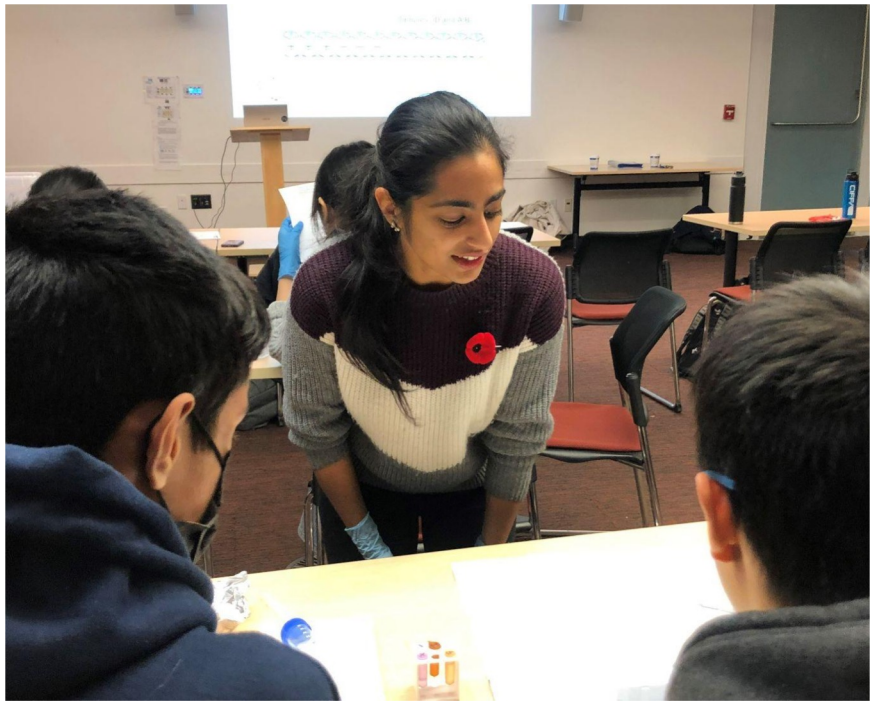
- ~10 sessions
- Scientific Inquiry Project (SIP) - original scientific study
  - Small group (2-4 students)
- Lessons provide skills used in the SIP and guide students through the process of scientific discovery
- Meet students at the skill level they are at and challenge them to go further

Scientific Inquiry Projects

- **United Nations Sustainable Development Goals (UNSDG)**
  - Finding inspiration from internationally recognized goals
  - Design questions that are new and contribute to a body of knowledge
- **Observational studies** that collect data from the natural environment.
  - e.g. what is the dissolved oxygen in False Creek at different points.
  - e.g. Water consumption habits
- **Experiments** that test a variable.
  - e.g. At home filters to remove microplastics from washing machines.
  - e.g. Varying material to generate energy from rain fall (tribeoelectiric nano-generators)

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

Subject Expert Themes - Civil Engineering

Megan Pate, Civil Engineer City of Vancouver, Year 2 Applied Science Instructor taught students the collaborative work needed for Civil Engineering.

Additional Opportunities

- Field Trips
  - 22/23 - 8 planned field trips
  - *STEMCELL, Amgen, SAP, Old Growth Conservancy, Civil and Mechanical Engineering Dr. Banthia Lab, TRIUMF, Stanley Park Ecological Society, Food Science Lab UBC*
- Virtual Field Trips - during spring break
  - *21/22 - Tree Ring Lab Arizona, Stanford Advanced Physics Lab, Marine Mammal Rescue Centre, Amazon Warehouse, NASA - Wallop Facility, Advanced Microscopy Lab UVic*

Additional Benefits

- Reference Letters
- Volunteer opportunities
- Eligibility to the Year 2 and Year 3 program

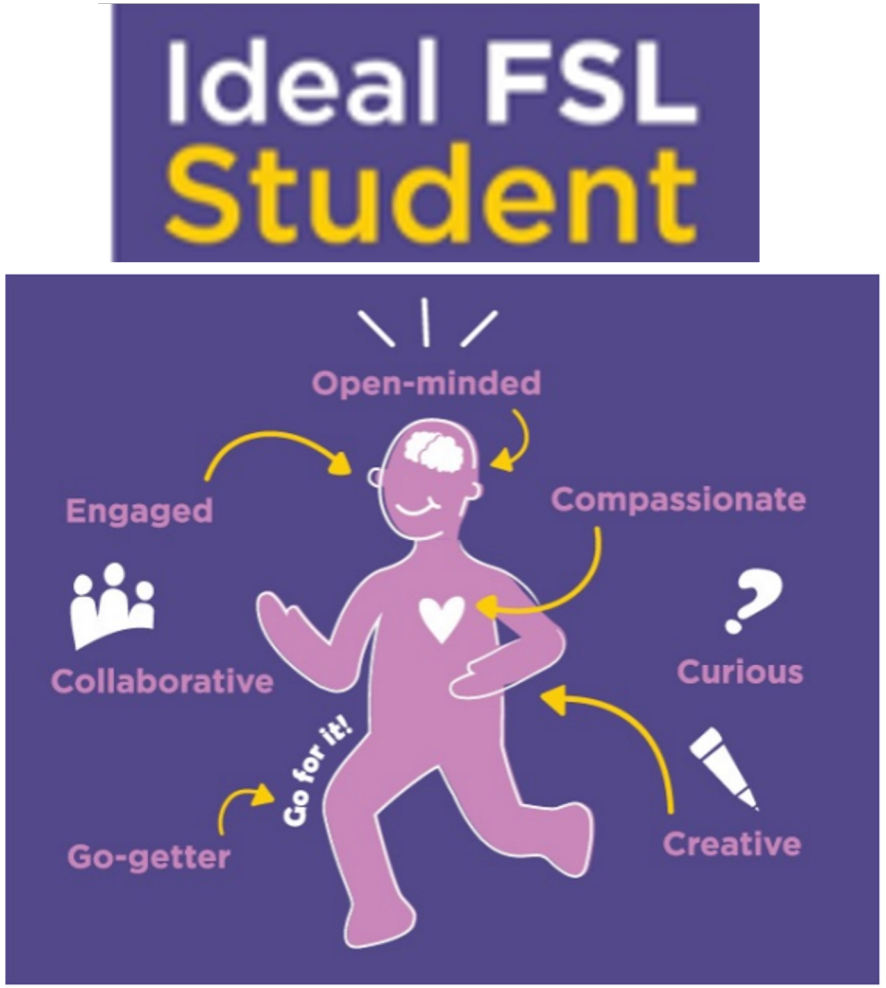
Application Process

SCIENCE WORLD

Finding a good fit: You and FSL

Eligibility

- **Grade 10 or 11 in September 2023**
- 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.

Application Process

- Applications due May 1, 2023
- 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)
- Registration and fee payment $600 + tax
- Needs based scholarships available

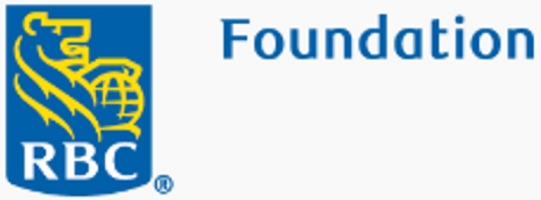
Application Workshops

- Monday, March 6
- Monday, April 17

Things we will cover:

- How to write the short response questions
- How we evaluate applications
- Application best practices

FSL would not be possible without the generous support of:



Anonymous, in Honour of Connor Twa.

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

Contacts

Questions or concerns:

- Jenny McQueen, program manager
  - jmcqueen@scienceworld.ca

Websites:

- Read stories about alumni and find out more details:
  - scienceworld.ca/futuresciencleaders/
- Examples of student work:
  - futuresciencleaders.com

SCIENCE WORLD