



The Future Science Leaders program was launched in 2011 and is now celebrating its fifth year. It was conceived of as a “talent incubator” to provide gifted students an opportunity to engage with university-level topics and activities otherwise unavailable at home or school. This competitive nine-month program attracts exceptional grade 10 and 11 students who are insatiably curious, eager for a challenge, and willing to take risks while exploring new ideas and technologies. Future Science Leaders is a multi-year program, and this magazine was created to showcase the experiences of students participating in the entry “Discover” year.

Following a competitive recruitment process, 28 students were selected from a pool of over 80 applicants across the lower mainland. These students attended 2.5-hour sessions at Science

World every Tuesday evening from September 2015 to May 2016. In addition to an introduction to foundational science skills, they explored six themes: biology, chemistry, environment, math, physics, and technology. As part of each theme, the students participated in advanced, interactive challenges and had the opportunity to interact with experts in academic research and industry. Not only did meeting working scientists help debunk the typical stereotype of the old, stuffy scientist, but it also gave students a glimpse at the wide array of career options that await them in science. This year, a specially selected fellow who is a content expert in that field and also dedicated to science education presented each theme. Fellows organized activities and guest speakers to help student engage and get excited about their field, and undergraduate mentors from local universities helped facilitate each session.



“The Future Science Leaders program will create a network of support for B.C.’s top high school students to further develop the talent, drive, and discipline needed to excel in scientific research and innovation.”

# Foundations of Science

Science is a methodical approach to problem-solving and not just a collection of facts and several sessions of Future Science Leaders are dedicated to helping students build a solid scientific foundation. Not only should this improve scientific literacy, but it should help support every student's scientific interests.

When generating scientific knowledge, scientists have several ways to communicate their findings to others, including laboratory notebooks and scientific publications. Students tried out their lab notebook skills while making pudding or silly putty after a short verbal presentation and using notes made by other students. We explored different ways to organize our data (e.g. charts) and how to best communicate the information, including how some information presentation can be misleading. Scientists share their new data and ideas in scientific publications and we deconstructed each part of a yummy scientific paper about cookies! These skills should help the students communicate science to other scientific experts.

Scientific information doesn't always stay with scientists. As an example, we followed a controversial NASA story of arsenic-based bacteria throughout its communications life cycle to learn about the characteristics and credibility of different sources of scientific information.

Solving mysteries is fun – or at least looks fun on TV – and follows a similar process to that of scientific research. In original research, there isn't a master textbook where you can look up the right answer. In order to practice looking at evidence, and drawing conclusions students played the roles of detectives in a murder mystery. In this mystery there is no "correct"

answer, rather just the answers the students have generated themselves.

It is also important for scientific information to be communicated more widely than scholarly articles. Students were also introduced to blogging as a way to communicate about their experiences and share interesting stories on science and technology. The students formed eight creatively-named blog groups. Profiles for each group and highlights from their blogging experience will be featured throughout this magazine.

## Student Blog Groups

11th Avenue

Bloggerithms

Byte-Sized Science

Eff Ess Elle

Newton's Pineapple

Purple Platypuses

TeAm OsMoSis

The Nicest Science

The Science Fields

## FSL Manager

Dr. Catherine Anderson

Science World

UBC Faculties of Medicine & Dentistry



I received my PhD in Medical Genetics and have spent the last 10+ years helping people understand the biological sciences, both the facts and their impact on their lives. Although my projects can look different, they all encourage thinking and exploring. I was born and raised in the Vancouver area and I wish we'd have something like Future Science Leaders when I was in high school!

## FSL Outreach, Valentine's Day, and SWEET



We are on a new mission! We know our students really love science and now we want them to share this love with the world. Through outreach events we give our students a chance to explain cool science and take on a leadership role in their communities. We participated in two SWEET (Science World Extravagant Evenings for Teens) events and a special Valentine's day sidewalk science table this year. Students that come back for year 2 will be asked to get involved in or create science events in their communities.