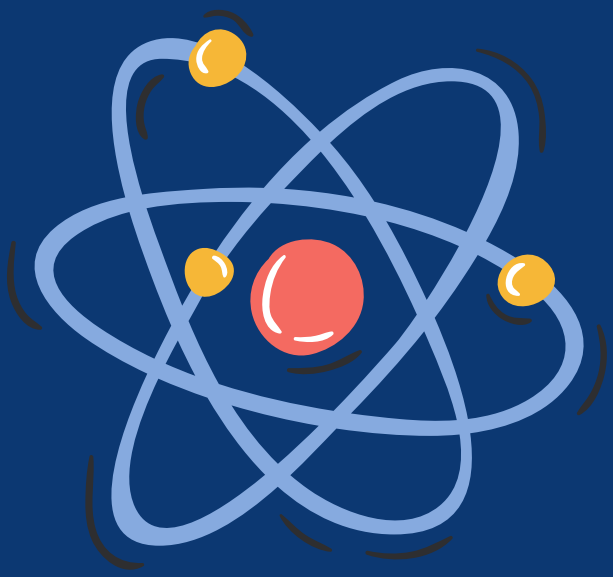
SCIENCE 101
UBC



2023

Yearbook

TABLE OF **CONTENTS**

LAND ACKNOWLEDGMENT

We would like to acknowledge that the Science 101 course was held on the UBC Point Grey (Vancouver) campus, which sits on the traditional, ancestral, unceded territory of the xʷməθkʷəy̓əm (Musqueam) First Nation.

On the first day of Science 101 we asked students:

"What does science mean to you?"

Here is what they said...

MESSAGE FROM ASSOCIATE DEAN

THE UNIVERSITY OF BRITISH COLUMBIA
Faculty of Science

Faculty of Science, Office of the Dean
2178 – 2207 Main Mall
Vancouver, BC Canada V6T 1Z4

Phone 604 822 3336
Fax 604 822 5558

August 3, 2023

Dear Graduates:

On behalf of the Faculty of Science, congratulations on your graduation from ~~Science~~ 101!

It has been our pleasure to host you at the UBC Point Grey campus this summer. We hope Science 101 has provided you with a solid introduction to many scientific topics and has ignited your passion to continue learning about science. You have gained new perspectives on the world around you and developed tools and ways of thinking that are related to other scientific topics you may encounter in the future.

I extend my deepest thanks to you for bringing your own knowledge, experience, and perspectives to this learning experience, for everyone's benefit. Science is a collaborative endeavour, and it is our relationships with others that allows science to advance and have a positive impact on the world.

I hope you have enjoyed your time in the program and that you will stay connected with UBC Science in the future. You are now a member of the Science 101 Alumni group, and we invite you to join Science 101 Alumni Programming which will take place at the UBC Learning Exchange and the Point Grey campus. Past events have included science tutorials, field trips and skill-building workshops.

Congratulations on your achievement!

Sincerely yours,

Jackie Stewart
Associate Dean, Faculty of Science

MESSAGE FROM ALANDRA

Dear Graduates,

I want to express my gratitude for the opportunity to be part of such an incredible group. One of the most rewarding parts of coordinating Science 101 has been witnessing your enthusiasm for science and your dedication to lifelong learning. I will cherish this experience for years to come, and I am thankful for the new skills and perspectives that I have gained - I know they will make me a better person and a better scientist.

Alandra

Coordinator

Science 101 would not have been possible without the support of our lovely volunteers. It is thanks to their hard work that we have been able to keep the program running smoothly.

A big thank you to our guest lecturers as well, for their commitment to the program and for sharing their knowledge and expertise. And to the Science 101 mentors, Gilles and Marvin, for their guidance and support.

Finally, I am also thankful for the support of my follow coordinators, as well as Nancy Cook, who made this opportunity possible and who helped us immensely along the way.

Congratulations graduates, I wish you all the very best of luck and I hope our paths cross again!

Sincerely,
Alandra

Alandra Moosmann Mendez

MESSAGE FROM JENNIFER

Congratulations Science 101 Graduates!

What an amazing summer of curiosity, learning, and growth! It has been such a wonderful experience meeting each and every one of you and sharing lovely conversations together. I am extremely grateful for and inspired by the enthusiasm, energy, and grit you all brought to the program.

Thank you to all of the volunteers who helped tremendously in this team effort to make the day-to-day logistics run ever so smoothly. And we couldn't forget about our superstar mentors Gilles and Marvin! Thank you both for your kindness, willingness, and initiative to be so supportive in all aspects of the program.

Thank you to Nancy and the other program coordinators for the extreme hard work put into this initiative - it has been so inspiring to work with you all!

It has truly been a pleasure to see every respective student grow and progress through the Science 101 program. I am so proud of your hard work and commitment to lifelong learning. Keep rocking on and good luck with your future endeavors!

Best wishes to everyone!

Sincerely,
Jennifer

Jennifer

Coordinator

MESSAGE FROM MONA

Congratulations Science 101 graduates!

I would like to congratulate each and every one of you for the incredible accomplishments you have made this summer. It has been my absolute pleasure working with such a diverse group of passionate students and hearing all of your stories. The qualities that you have all demonstrated throughout this program will carry you far into the future, wherever you may go. Keep being inquisitive and enthusiastic and enjoy the road ahead! Thank you for allowing me to take part in your journey to becoming Scientists!

Mona
Coordinator

As well, thank you to our mentors- Marvin and Gilles- for their expertise and knowledge regarding this program. We could not have done this without your support. Thank you to our volunteers: Asfar, Brian, Erin, Katie, Noah, Parsa, Sasha, Shayda, and Toktam! It was great to watch how your relationships with the students- and each other- developed by the end of the program. And above all, thank you to Nancy Cook and the rest of the staff in the Faculty of Science Dean's office for their continued support, communication, and assistance in all of our tasks. This program was a success thanks to your efforts.

Now go forth Science 101 graduates into the world of Science! I hope to see some of you on campus in the coming months. Please keep in touch with one another and the community that you have built, and I wish you all the best of luck!

Sincerely,
Mona

Mona Golmohammadzadeh

MESSAGE FROM NEGAR

Dear Graduates,

What an incredible 3 months we have gotten to spend together. I can't begin to express my gratitude to each and every single one of you. It has been so amazing to see your interest in science spark in so many different ways. I am so proud of the curiosity you keep bringing to the table and the questions you continue to ask. For me, curiosity has always been a core part of learning and continuing forward in life.

Negar Asli

Coordinator

I have been able to learn so much throughout the past few months from all of you. I will always cherish all the conversations we have had during this time. I feel as though I have so many new perspectives on life and appreciation through our conversations. I hope that you always continue to ask questions, figure out how things work and continue to chase your passions. This program was a reminder that you can learn at any stage in your life. Thank you for choosing to be a part of Science 101 and giving us a chance to do our job. I hope that this has been a positive experience for you and that you have gained new insight, connections and experiences.

To the volunteers, I am so grateful for your constant support throughout the program. It has been beautiful to see you build connections with students as well as your fellow volunteers. Thank you for showing up to every lecture and being so flexible in figuring things out with us. We could not have done this program without you. I know you will all excel in whatever you do next.

To my fellow coordinators and Nancy, thank you for this opportunity and for trusting me. I am so glad we got to do this together. I will be forever grateful for the time we spent together.

Wishing you all the best in the next steps of your life. I will remember your impact whenever I go.

Love,
Negar

PROGRAM SCHEDULE

May

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8 **Orientation Day** Irving Barber Learning Centre Room	9 **Lecture: Dr. David Ng "Scientific Literacy"** Michael Smith Building 6:00-8:30 p.m.	10 No Tutorial	11 **Lecture: Dr. David Ng "Genetics"** Michael Smith Building 6:00-8:30 p.m.	12	13
14	15	16 **Lecture: Dr. James Charbonneau "Physics"** IBLC Room 182 6:30-8:30 p.m.	17 **Note Taking** UBC Learning Exchange Multipurpose room 612 Main Street 3:00-4:00 p.m.	18 **Lecture: Dr. Alanna Hallas "Quantum Materials"** IBLC Room 182 6:30-8:30 p.m.	19	20
21	22	23 **Beaty Biodiversity Museum Fieldtrip** **Lecture: Dr. Chris Waltham "Musical Acoustics"** IBLC Room 182 6:30-8:30 PM -	24 **Reading Scientific Papers** UBC Learning Exchange Multipurpose room 612 Main Street 3:00-4:00 p.m.	25 **Lecture: Dr. Peter Raven "Aquaculture and Environmental Science"** IBLC Room 182 6:30-8:30 p.m.	26	27 **Aquarium Fieldtrip with Dr. Peter Raven**
28	29	30 **Lecture: Library Tutorial with Ursula Ellis** Woodward Library 2198 Health Sciences Mall 6:30-8:30 p.m.	31 **Goal Setting** UBC Learning Exchange Multipurpose room 612 Main Street 3:00-4:00 p.m.			

PROGRAM SCHEDULE

June

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3 Midterm Break	4 Midterm Break	5 Midterm Break	6 Midterm Break	7 Midterm Break	8
9	10	11 **Lecture: Luke Brown "Volcanology"** IBLC Room 182 6:00-8:30 p.m.	12 **Work on final projects** UBC Learning Exchange Multipurpose room 612 Main Street 3:00-4:00 p.m.	13 **Lecture: Dr. Evelyn Sun - Biology and Genetics** IBLC Room 182 6:00-8:30 p.m.	14	15
16	17	18 **Lecture: Dr. David Oliver "Microbiology Part 1"** IBLC Room 182 6:00-8:30 p.m.	19 **Climate Change Advocacy** UBC Learning Exchange Multipurpose room 612 Main Street 3:00-4:00 p.m.	20 **Lecture: Dr. David Oliver "Microbiology Part 2"** IBLC Room 182 6:00-8:30 p.m.	21 **Grouse Mountain Field Trip**	22
23	24	25 **UBC Farm Fieldtrip** **Lecture: Shalini Iyer, PhD "Neuroscience"** IBLC Room 182 6:00-8:30 p.m.	26 **Work on final projects** UBC Learning Exchange Multipurpose room 612 Main Street 3:00-4:00 p.m.	27 **Lecture: Avril Metcalfe-Roach, PhD "Neuroscience and Microbiology"** IBLC Room 182 6:00-8:30 p.m.	28	29

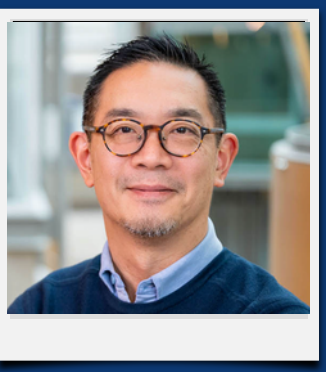
PROGRAM SCHEDULE

July & August

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3 Midterm Break	4 Midterm Break	5 Midterm Break	6 Midterm Break	7 Midterm Break	8
9	10	11 **Lecture: Luke Brown "Volcanology"** IBLC Room 182 6:00-8:30 p.m.	12 **Work on final projects** UBC Learning Exchange Multipurpose room 612 Main Street 3:00-4:00 p.m.	13 **Lecture: Dr. Evelyn Sun - Biology and Genetics** IBLC Room 182 6:00-8:30 p.m.	14	15
16	17	18 **Lecture: Dr. David Oliver "Microbiology Part 1"** IBLC Room 182 6:00-8:30 p.m.	19 **Climate Change Advocacy** UBC Learning Exchange Multipurpose room 612 Main Street 3:00-4:00 p.m.	20 **Lecture: Dr. David Oliver "Microbiology Part 2"** IBLC Room 182 6:00-8:30 p.m.	21 **Grouse Mountain Field Trip**	22
23	24	25 **UBC Farm Fieldtrip** **Lecture: Shalini Iyer, PhD "Neuroscience"** IBLC Room 182 6:00-8:30 p.m.	26 **Work on final projects** UBC Learning Exchange Multipurpose room 612 Main Street 3:00-4:00 p.m.	27 **Lecture: Avril Metcalfe-Roach, PhD "Neuroscience and Microbiology"** IBLC Room 182 6:00-8:30 p.m.	28	29

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1 **Lecture: Dr. Mike Marin Health Statistical Science** IBLC Room 182 6:00-8:30 p.m.	2 **Working on Final Projects** 2:30-5:30 p.m.	3 **Graduation Ceremony & Final Project Display**	5	6

LECTURERS

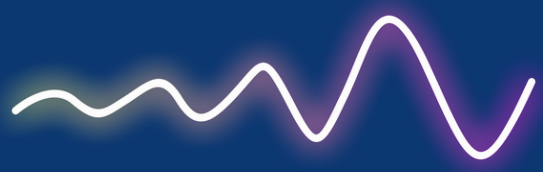


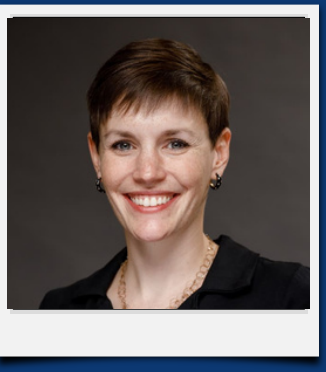
Dr. Dave Ng

Dr. David Ng research focuses on scientific outreach and education. Dave studies why certain groups of people distrust science and scientific evidence and what can be done to change how science is communicated. Dave currently runs the advanced molecular biology laboratory (AMBL) providing advanced science learning experiences for the general public. Dave led the students through identifying false news articles from a variety of different topics. The lecture focused on learning how different groups of people interact and learn science and why certain groups are more likely to distrust science. He also hosted a lab lecture where students extracted their own DNA!

Dr. James Charbonneau

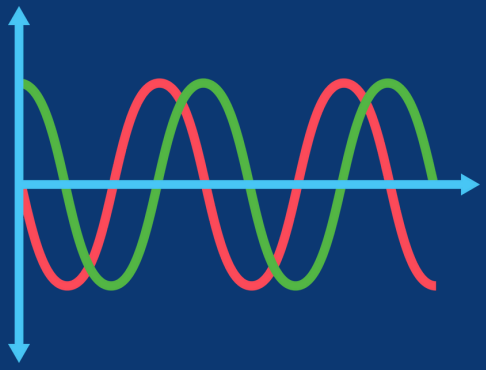
Dr. Charbonneau's lecture led the class to answer the question: what is light? James started by discussing particle wave theory and introduced different types of waves. He explained Young's experiment that showed light as a wave and x-rays to demonstrate light as a particle. During the break, the students were able to observe different element emission spectra. James explained the electromagnetic spectrum and specifically talked about heat from light. He also explained how different animals use light as camouflage or to color themselves. James briefly introduced how humans see light through our eyes.



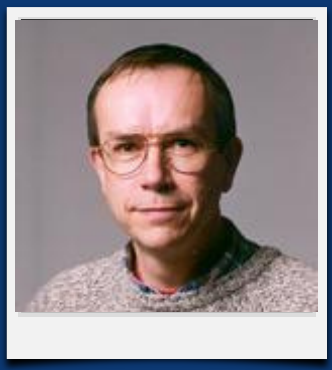


Dr. Alannah Hallas

Dr. Alannah Hallas introduced the class to common examples of crystals such as minerals, jewels and birthstones. She clarified what a crystal is: compounds whose atoms are arranged in a symmetrical and structured manner. The class was acquainted with how to grow crystals which happens both naturally and in the lab. Dr. Hallas then tied this into the topic of the lecture. Quantum materials research is the study of the interactions of many electrons in a solid. There are certain properties that maximize the quantum properties of a material. Quantum materials are important in the development of various technologies and are important in semiconductor research.

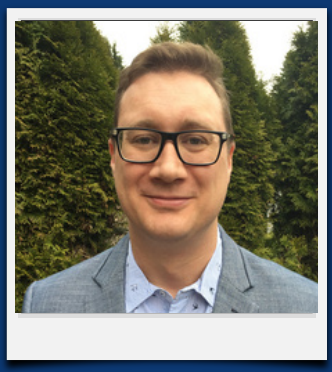


LECTURERS



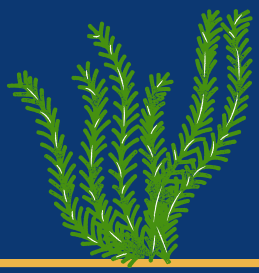
Dr. Chris Waltham

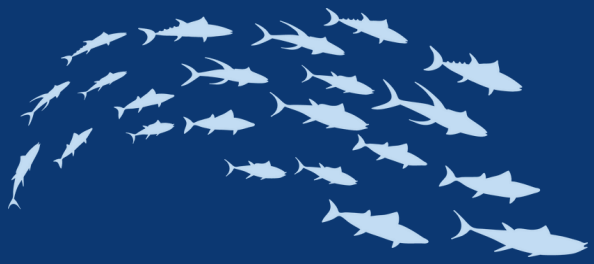
Dr. Chris Waltham is a professor of physics and astronomy and studies musical acoustics. Chris performed for the class and explained the physics of music by visualizing what music looks like with the Spectrum Lab. Using the lab, he showed the different fundamental frequencies through whistling and singing. He used the program to demonstrate the different octaves by playing instruments. Chris taught the students how instruments work and the physics behind them by observing how the instruments are built.



Dr. Peter Raven

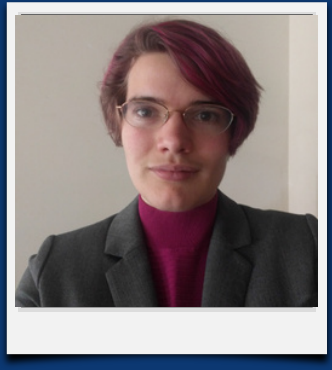
Dr. Peter Raven has completed his undergraduate degree at the University of Alberta in Biology and continued his graduate degree in Zoology at the University of British Columbia. In his lecture, he discussed how we can understand fish anatomy and life cycles, and described the characteristics of sharks, skates and rays, ancient fish, and open ocean fish. Additionally, he shared his knowledge about reef and coastal fish, deep sea fish, and freshwater fish. The lecture finished off with a hands-on activity with samples Dr. Raven brought with him to allow students to apply the knowledge they learned during lecture. His lecture was very helpful in understanding what students can expect when visiting the aquarium.





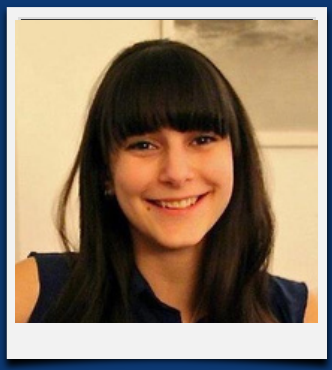
Ursula Ellis

Ursula and Aubrey toured students around the Woodward Library and introduced students how to use libraries such as what resources are available in the library and how to find them. Aubrey taught us about how to use the summon bar to find books, images and how to use databases. We then learned how to evaluate and determine what are suitable sources to use for our research. Most importantly, Ursula taught us how to properly cite sources when we use them and why we need to cite sources. Finally, Ursula taught us how to evaluate and determine what are suitable sources to use for our research and discussed some new technologies such as ChatGPT and AI.



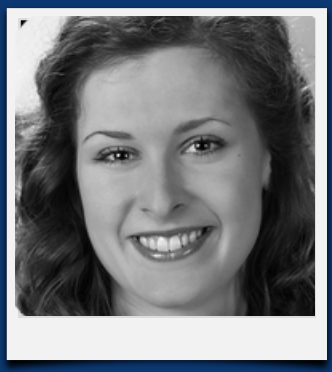
Aubrey Geyer

LECTURERS



Rachel Wilson

Rachel Wilson is an ecologist studying the effects of climate changes on ecosystems particularly plants. In this lecture, Rachel explained how studying plants is different from studying animals in an ecosystem. Later, she talked about the basis of climate change including the greenhouse effect. She talked about the factors to consider while studying climate changes. Rachel also talked about the effects of climate changes on the biosphere and with examples on how animals and particularly plants adapt to survive the rapid climate changes. She also indicated how human interventions can help mitigate these climate change related disruption to biodiversity. Her lecture was incredibly useful in understanding the flexibility and fragility of our biosphere in response to the rapid climate change

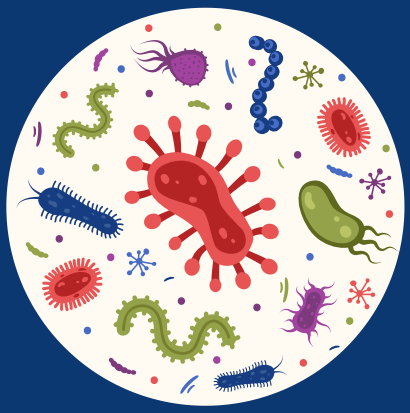


Christina Draeger

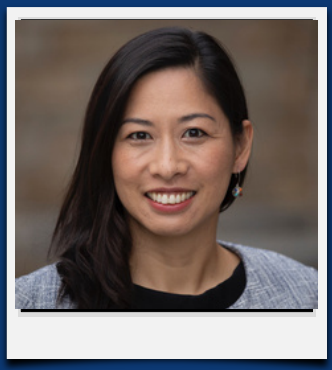
Christina Draeger is a glaciologist whose field work focuses on measuring the energy associated with glacier processes. Christina began the lecture by introducing us to glaciers by first asking why we should care and discussing some general processes of glacier formation, terminology and its measurement. Christina then delved into her field work and presented amazing photos from the glaciers she visited. Afterwards, the class explored the effect of climate change on the earth's cryosphere including glacier mass loss and sea level rise due to both melting ice caps and glaciers and thermal expansion. We then learned about how glaciers play a vital role in balancing our climate by analyzing streamflow models from the 2021 Western North America heat wave. Christina ended her lecture with discussions of the effects of glacier loss due to climate change

Brett Gilley

Brett Gilley is an associate professor with expertise in Geoscience Education, Natural Disasters, Landslides, Sedimentology, and Two-Stage Exams. Brett started the lecture off with a class-wide discussion on the meaning of hazard vs risk, in order to understand how risk is expressed as a probability. He used this notion to highlight one of the main issues we face in perceiving risk, namely that humans have difficulty interpreting the ratios used to describe risks we face. Brett then discussed different travel-related risk statistics with the class, and pointed out the disproportionate amount of fear surrounding natural disasters as compared to much more probable accidents like motor vehicle incidents. Through a series of interactive activities, the class explored factors that skew human perception of risk. Brett then discussed the kinds of disasters that are (forest fires, overpopulation, etc.) and are not (e.g. earthquakes) increasing in frequency/likelihood.



LECTURERS

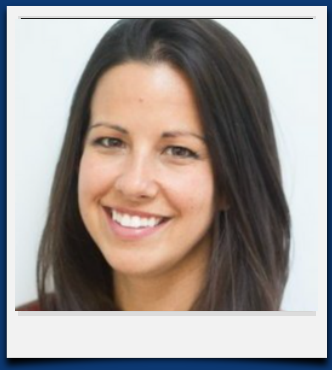


Dr. Maria Tokuyama

Maria Tokuyama is a viral microbiologist at UBC who runs a research lab that focuses on virus-immune interactions and teaches courses in microbiology and immunology. Maria began the lecture by introducing the class to what the immune system is, why it's important and how it affects our day to day life. She then depicted a typical immune response to a pathogen, outlining the role of both the innate and adaptive immune systems. Maria also explained the role of the key players in our innate and adaptive system. After the break, Maria delved into the science behind vaccines to explain what vaccines protect against and how they work. She delved into the SARS-CoV2 virus as a real world example of how this lecture helps impact our health and why learning about immunology and virology is important.

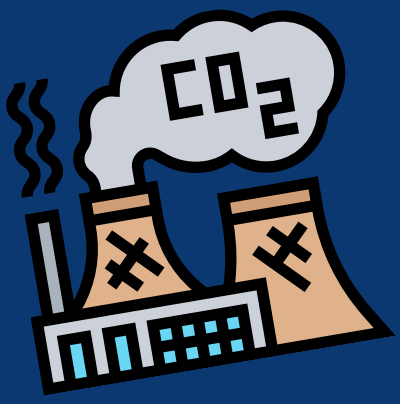
Elisabeth Proeschel-Giroud

Elisabeth Proeschel-Giroud loves the planet Mercury! She is a graduate student researching the broad area of "planetary science." We began the lecture by discussing two big questions; what is planetary science, and why is it important? Elisabeth then outlined the 4 major types of spacecraft used to study planets: flyby (like Voyager 2), orbiter (like Galileo), atmospheric, and lander (like Pathfinder). We worked in groups to design our own spacecraft to study an unknown planet, thinking about the kind of equipment it would need and other considerations necessary for traveling in space. Elizabeth showed examples of the kinds of images and data she uses for mapping interesting features. Finally, we identified some of these features (like volcanoes or rivers), discussing the similarities and differences to the ones we are familiar with on Earth.

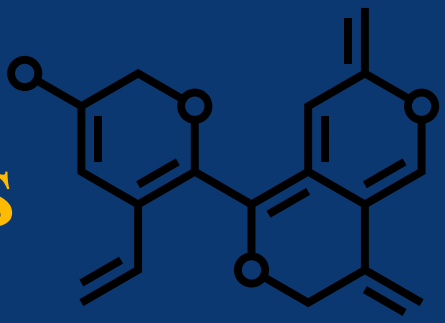


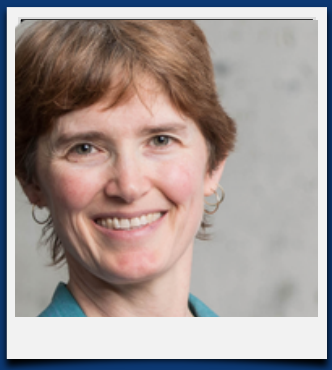
Dr. Denise Gabriel

Dr. Denise Gabriel is a biologist and anthropologist whose research examined the behaviour and health ecology of wild ring-tailed lemurs. Denise started the lecture by introducing the class to the broad idea and the basic principles of a system. Then, Denise provided the class with an example of a biological system in the context of cell biology and asked the class to think of a system relevant to themselves. After the break, Denise delved the class into more systems thinking by leading an exercise with graph interpretation that looked at the inflow and outflow of people leaving a store. Afterwards, Denise explained how systems behave by providing examples of processes that systems can undergo such as through feedback. At the end, Denise concluded the lecture by examining how systems can be applied throughout life.



LECTURERS



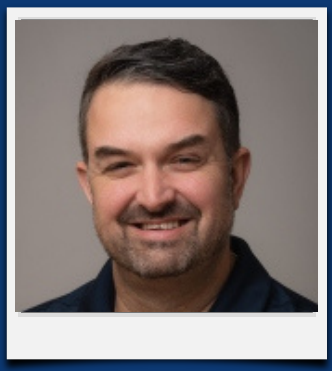


Dr. Sara Harris

Dr. Sara Harris is former Associate Dean Academic of the Faculty of Science with a background in Geological Oceanography. She is currently a professor in the Earth, Ocean, and Atmospheric Sciences department. Sara began the lecture by presenting the current state of carbon dioxide concentration in the atmosphere and how it affects the environment through the greenhouse effect. Sara then discussed how there has been significant climate change due to the carbon dioxide and how it has been impacting Vancouver. Afterwards, Sara began a discussion on potential solutions to building a better climate using the En-ROADS model. First, Sara presented the future climate based on current climate conditions and energy usage. After the break, Sara engaged the class in thinking about ways we can reduce energy consumption and greenhouse gas emissions. Sara then concluded the lecture by asking the class to reflect about the future and what can be done to reduce climate change.

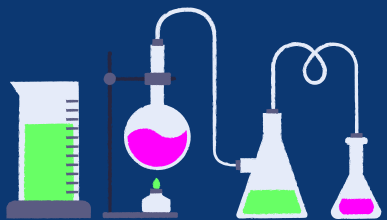
Julie McNutt

Julie McNutt is a graduate student in the chemistry department researching breast cancer treatments using analytical chemistry. Julie presented on chemistry in the human body. Julie started by introducing elements and molecules followed by introducing cells, tissues, and organs. She led an activity defining the different kinds of tissues including nervous, epithelial, muscle and connective tissues. Julie then delved into what chemical reactions are, how they happen and examples of chemical reactions in our day to day lives. The lecture ended with chemistry in our bodies by discussing energy in our four senses: sight, hearing, smell, and taste. She used activities including food colouring, different sounds, different smelling liquids and different tasting foods to explain how chemicals play a role in different sensory interpretations.

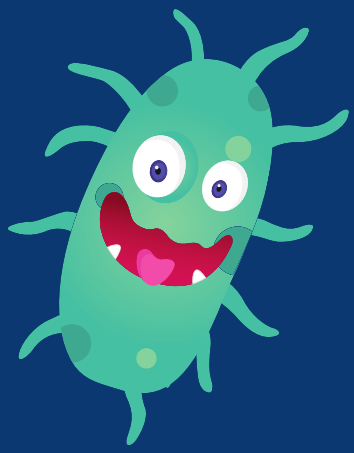


Dr. Jay Wickenden

Dr. Jay Wickenden introduced the class to some world renowned organic chemists including Justus von Liebig who came up with the modern lab-based teaching. Dr. Wickenden made the distinction between organic (derived from living organisms) and inorganic materials (derived from minerals). He highlighted the importance of organic compounds in life for example: medicine, perfumes, plastics, petrol products and food additives. He then explained the process behind developing disease fighting drugs and explained compounds used to fight Covid. The class was shown the periodic table of elements, making special note of the carbon atom which is ideal for DNA. He further explained that atoms form different types of bonds including chemical and covalent bonding. A line represents a bond and helps us to understand how organic compounds such as: ethanol, aspirin and proteins among others are drawn. The golden rule of organic chemistry is “In stable molecules, all carbon atoms have four bonds.” The class ended with understanding “The Chemistry of Spicy.”



LECTURERS



Luke Brown

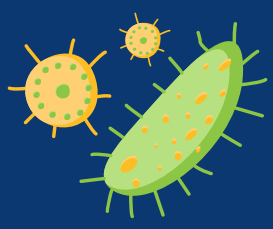
Luke Brown is a PhD candidate studying geophysics with a focus on volcanoes. He started the lecture by introducing the basic features of the earth's layers and how volcanoes form. The first volcano he talked about was the Pinatubo 1991 eruption in the Philippines with a focus on its strength and how scientists were able to forecast the eruption. Luke then dissected the eruption anatomy of volcanoes and compared the Pinatubo 91 and Hunga Tonga-Hunga Ha'apai 2022 eruptions. After the break, Luke began discussing volcanic activity, including where they form, what volcanic activity is and how we get eruption clouds. He then moved onto discussing how volcanic eruptions occur and structure and fate of eruption clouds.

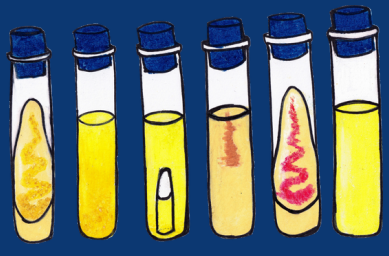
Dr. Evelyn Sun

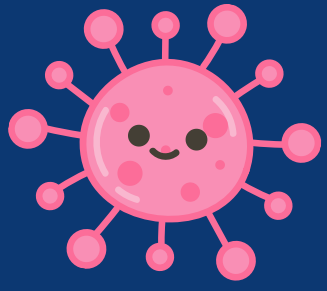
Dr. Evelyn Sun is a lecturer in the field of microbiology and immunology. She began the lecture by telling a heartwarming story on how she became interested in the field of science, genetics and microbiology. She also spoke about her diverse background in research. Evelyn introduced what biotechnology is and then delved into the differences between bacteria and viruses. She. talked about the good, bad and ugly of microbes and differences between bacteria and viruses. After the break, Evelyn raised some concerns, like antibiotic resistance, associated with our current "cures" to bacterial infections as well as the implications of this issue. She gave the example of Ebola as "the Ugly" part of microbiology due to its deadly, severe symptoms and lack of cure.

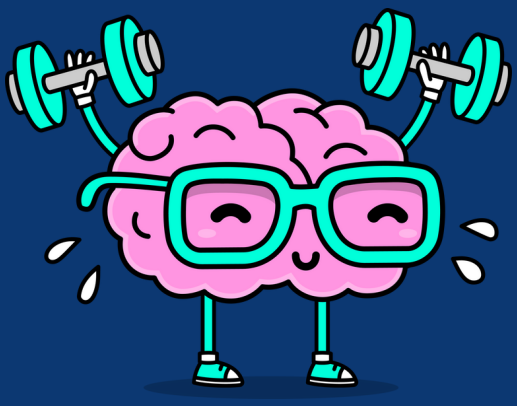
Dr. David Oliver

Dr. David Oliver is a professor of microbiology and studies how microorganisms cause diseases. David introduced different types of microbes and their importance to our survival. He taught the students the origins of microorganisms from archaea and bacteria. Students discussed the different methods microbes are used in our lives: cheese, yeast, vinegar, kimchi, and composting. David introduced the concept of the microbiome, and the connection between the microbiome and diseases using different examples from acne to malnutrition. The class ended by sampling different areas of the classroom and items for microbes and plating them for observation.









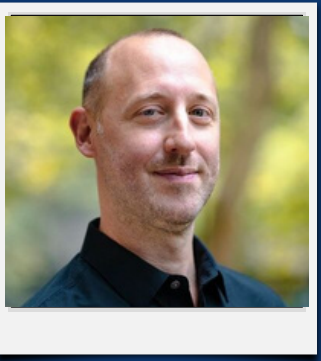
LECTURERS

Shalini Iyer

Shalini is a PhD student in neuroscience and studies how differences in neurodevelopment can contribute to disorders. She began by describing what neuroscience is and how the nervous system is organized in the body. Shalini then delved into the structure of the nervous system by describing the difference between the central nervous system (CNS) and peripheral nervous system (PNS). She gave a few scenarios where the sympathetic or parasympathetic nervous system would be activated in our day to day lives. After the break, Shalini described the general brain anatomy and did a somatosensory activity. She explained the fundamental unit of the nervous system - a neuron - as well as how neurotransmitters work and how neurons transmit information through action potentials.

Avril Metcalfe-Roach

Avril is a PhD student who studies the link between bacteria and brain health. He began by explaining what microbes are: a form of life only visible under a microscope. The human gut is enriched with microbes and most of these are bacteria. He further explained how the gut microbes benefit from us and humans benefit from them. Importantly, he revealed that microbes can help train the immune system to distinguish between harmful and harmless bacteria. Avril emphasized how important exposure to bacteria at a young age is needed for this. He then introduced the brain and how it is protected. The brain disease Avril studies is Parkinson's disease. Avril's lab is understanding the microbiome changes in the gut for those with Parkinson's disease and how that contributes to the gut problems characteristic of this disease. He ended the class with ways of fostering a healthy microbiome in terms of diet and exercise.



Dr. Mike Marin

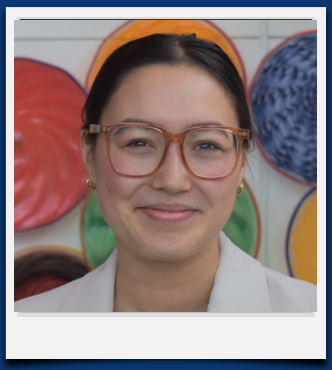
Dr. Mike Marin is as associate professor at the UBC School of Population and Public Health, teaching courses in statistics for health research and epidemiology. His lecture, titled "Statistics and Probability in The World Around Us," explored interesting problems in probability. For example, students were introduced to the *birthday problem* and the *Monty Hall problem*. He also talked about how misleading statements can be made using numbers and how to spot them in the real world. He also explored topics in experimental design like the placebo effect and the Hawthorne effect. This lecture presentation truly highlighted the ubiquity of statistics and how they are part of our everyday lives.

LECTURERS - THANK YOU!

As the Science 101 program draws to a close, we want to take a moment to express our deepest gratitude for the invaluable contribution of our lecturers. Your willingness to graciously offer your free time to present at our program has made a significant impact on all of us, and we are truly grateful for your support. Without you, Science 101 would not be able to run.

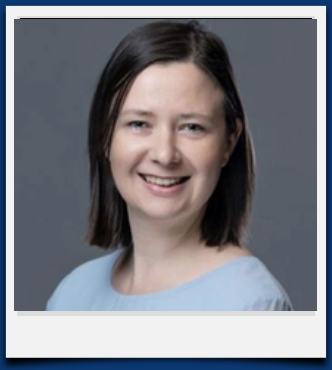
Your engaging content not only encouraged students to ask questions but also inspired them to delve into and explore new topics.Thank you for spending your evenings with us this summer! We hope to welcome you back in future years.

TUTORIAL LEADS



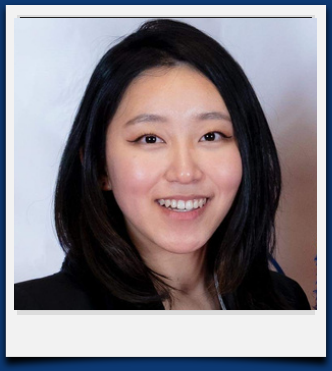
Lisa Popplewell

This tutorial focused on methods that students can use to take effective notes during class. We discussed the different forms that note-taking can take (ie. digital or handwritten) and shared anecdotes with the class! The tutorial activity focused on having a conversation with a classmate and summarizing it with notes. The students further practiced these skills by reading an excerpt from a textbook and taking notes on it. Thank you, Lisa!



Elena Zaikova

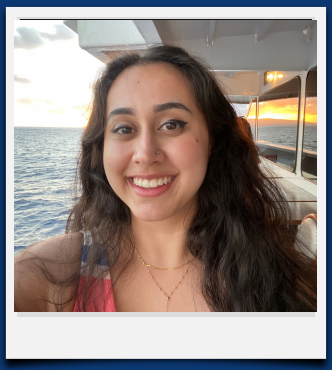
This tutorial introduced students to what scientific papers are and why they are necessary. We explored the structure of a standard scientific paper and learned several strategies for effectively working through the different sections of a paper. Thank you, Elena!



Jennifer Lim

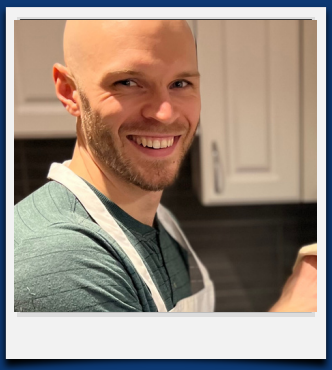
Goals vs Dreams – What's the difference? This was the main premise for this tutorial. Led by our very own Jennifer, we distinguished the differences between the two and learned how to set tangible milestones for goals. We also learned to identify potential obstacles and how to locate supportive environments. Thank you, Jennifer!

TUTORIAL LEADS



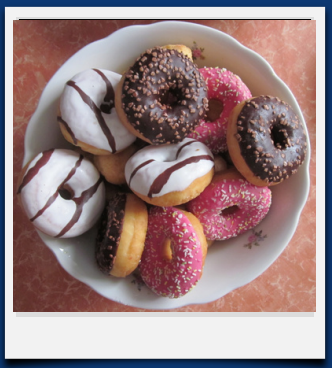
Mona Golmohammadzadeh

What is scientific writing and when do we use it? This tutorial looked at how tone and vocabulary change the style of writing. We practiced how to identify and write in the active and passive tenses, and how to use them in scientific writing. We also discussed several common conventions, including abbreviations, measurements, and figure titles. Thank you, Mona!



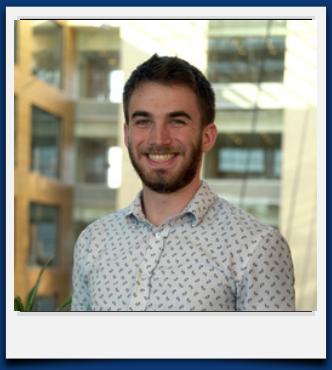
Eric Press

This tutorial focused on ways that students can reap the most benefits from class. We practiced reviewing and summarizing concepts using the topic of bread! We differentiated traditional and commercial baking, as well as the dietary benefits of sourdough bread. These activities helped students understand how to analyze a topic closely. Thank you, Eric!



Rachel Lobay

If there are two similar donut shops with similar ratings, which one do you go to? This tutorial walked students through the concept of paradoxes and data science, using the example of a donut shop. Students were able to use numbers to compare different situations and choose the likely answer. We also looked at some statistical data and tried to understand what the results really mean. Thank you, Rachel!



Andrew Sharon

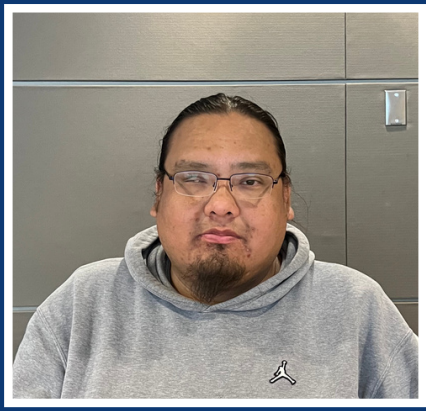
Our last structured tutorial centred around our upcoming Bursary applications. Graduates from Science 101 who are interested in taking more courses, either at UBC or another institution, can apply for a bursary to help fund their education. These courses are not restricted to purely academic ones; students can choose to take more creative courses like dance and art as well. Students were able to learn about the necessary components of their application. Thank you, Andrew!

TUTORIAL LEADS - THANK YOU!

We want to take this opportunity to express our deepest gratitude for the exceptional contributions our tutorial leads have made to Science 101. We appreciate the time and effort you have invested in preparing and delivering your tutorials.

Your knowledge and enthusiasm have inspired students to explore new subjects and ask insightful questions. On behalf of the entire Science 101 team and the students whose lives you have enriched, we extend our heartfelt thanks.

STUDENTS



Alfred Roulette

Favourite memory or lecture: Stratospheric injection of volcanic gases

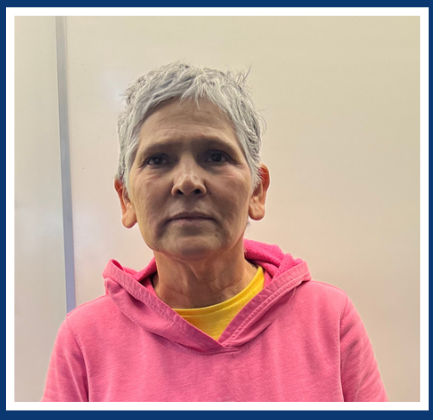
Message: Never stop learning!

"Question: What do you do when you can't do nothing but there's nothing you can do? Answer: You do what you can."

Angel Kam

Favourite memory or lecture: Nature, plants, volcanoes, glaciers, fish, crystal, DNA. The Science 101 program i so interesting and must study!

"If you study Science 101 you will be smart!"



Angelina Anthony

Favourite memory or lecture: I really enjoyed the field trip to Grouse. It was fun with a variety of activities. Bear watching, bird show, nature walk and of course the First Nations feast house!

Message: My sincere thanks to all the professors, facilitators and volunteers for all their hard work from welcoming us and waiting and the bus stop with big smiles to now. it's a good memory that I will always cherish. This was a good start and a positive vibe. Thank you for the priceless gift of education.

"Instead of focusing on what you don't have, direct your attention to your desire. If you believe fame and success are available to you, you will manifest it."

STUDENTS

Congratulations class of 2023!

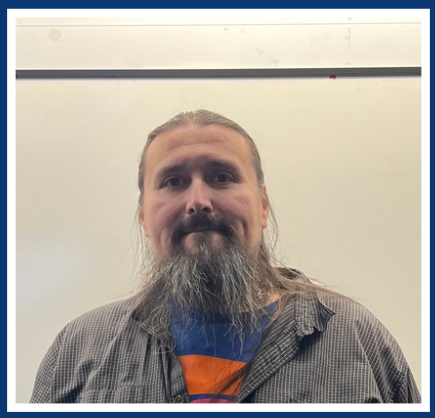
Arthur Marteinson

Favourite memory or lecture: The system's lecture with Denise Gabriel.

Message: I would like to thank all the professors and UBC student helpers who made the summer of 2023 so enjoyable and interesting.

"Science can be as easy as leaving a petri dish out overnight."

Bill Lim



Favourite memory or lecture: I really enjoyed the lecture on Biodiversity of Fish

"Like our class the ocean is full of colourful creatures!"

Chris Bragg

STUDENTS

Delia Ellarma

Congratulations class of 2023!

Favourite memory or lecture: Dr. Jay Wickenden was funny and entertaining. Talked about his daughter. He worked at what must have been a boring job before going to university.

Message: I'll never recall all this fascinating info - so much paper notes for future reference.

Diane Leclaire

Florence Hu

Favourite memory or lecture: My favourite lecture is the one on aquaculture and environmental science. I loved seeing the colorful fish. Therefore it inspires me to have the inspiration to know more about them!

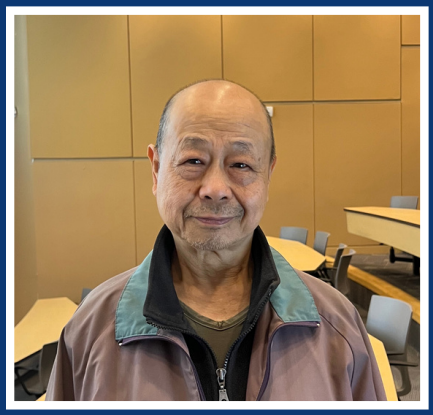
"I love how all the field trips perfectly matched with what we were learning in class. Most importantly they gave us new information and they were very fun!"

STUDENTS

Grace Shen

Favourite memory or lecture: Talking and eating together with classmates and coordinators is my favourite memory of the course.

"Learn something new every day!"



Ho Tung Ip

Favourite memory or lecture: The first lecture with Dr. David Ng the "Scientific Literacy". It opened new doors for me to see and walk through.

Hue Binh (Winnie) Lu

Favourite memory or lecture: Field trips!

Message: I really enjoyed Science 101. I want to take more UBC programs. Thank you to everybody (volunteers, lecturers, staff).

STUDENTS

Jian Liao

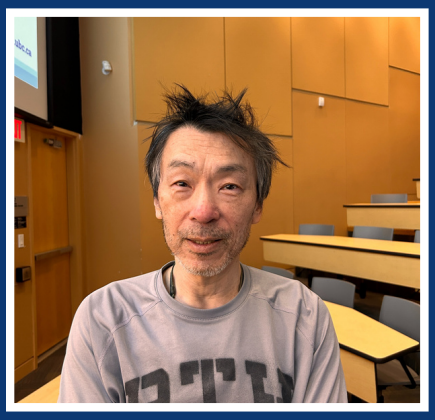
Favourite memory or lecture: I like all the lectures. Favourite: (1) Dr. David Ng “Scientific Literacy” and “Genetics” (2) Luke Brown “Volcanology” (3) Christina “Glaciers”

Message: Thank you to all the teachers, volunteers, coordinators and classmates for a wonderful semester full of learning. I really enjoyed listening to the lectures, visiting the laboratory and library. Thank you all again and best wishes.

"***Take advantage of the amazing opportunities presented to you***"

Favourite memory or lecture: Best moments are when we freely discuss ideas without reservations. I have true exchanges such as the non-butterfly effect that lead to an Ah-Ha moment!

"***Nothing is everything. No thing is every thing. Not one thing is everything. Everything is nothing. Everything is made of nothing(ness). Love/ Fear. Love over fear. Love is LOVE which is Living On Vibrant Energy. Fear is FEAR which is Fabricated Expectations Affecting Response. "***



Jim Chow

Jin Wang

Favourite memory or lecture: “Quantum Materials” and “Microbiology”

"***Learning is never late.***"

STUDENTS

Laura You

Favourite memory or lecture: Genetics

Message: Windows and doors built and opened, go through either :)

"***The sun rises tomorrow and someone is a different person.***"

Favourite memory or lecture: Volcanology. The ash, acidic gas, water vapor ejected by volcanic eruption. So dramatic.

Message: This is a knowledgeable subject that inspired me to go to school for more learning experiences.

Lily Huo

Liza Adams

Favourite memory or lecture: The very first class, in the beginning, was very fun!

Message: UBC is the best place on this planet, earth!

"When's the bus?"

STUDENTS

Nacer-eddine Kireche

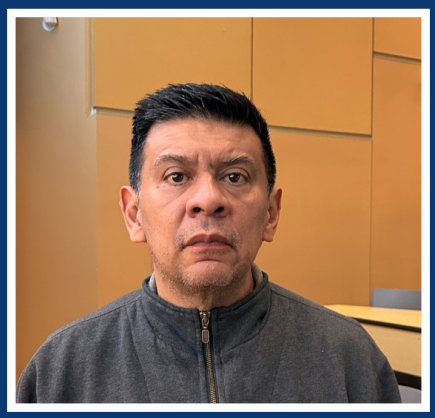
Congratulations class of 2023!

Favourite memory or lecture: All the field trips

Message: I am very happy to join this class. I learned a lot of things from this class.

"A day without sunshine is like you know. Night."

Ngar Kok (James) Wong



Oscar Aguirre

Congratulations class of 2023!

STUDENTS

Favourite memory or lecture: Aquarium visit!

Message: Keep learning!

"Today is a gift. That's why they call it the present."

Paul Gouldhawke

Favourite memory or lecture: Scientific Literacy by D. Ng. The real experiment of how we could get our genes from saliva.

Message: I am pleased that I came to attend Science 101. I got so much knowledge that's so interesting and inspiring to my daily life. I'll keep on attending more courses to increase my wisdom.

Poly Leung

STUDENTS

S.
W.

Favourite memory or lecture: When Dr. Chris Waltham asked someone to sing one note, I raised my hand and produced a note with my voice, loud and long. The screen pop up the frequency pattern immediately. It was the same pattern as the violin.

Message: Imagine there's no countries....
Why does it matter to ask "Where do you come from?" Why is it so important to find out my mother tongue, my race, even before asking my name? Thank you UBC Science 101 staff for did not ask me these questions but accept me as is.
I am grateful that I have these opportunities to hear so many passionate speakers talking about their expertise. I am inspired to find and pursue my passion in science.
The answers to the questions above:

- We are earthlings made of star dust. I come from the stars, so does everyone on Earth.
- You and I are the same race - human race.
- I speak the language which everybody in the group understands at all time. That's respect and fair to everybody.

"To infinity and beyond!"

Congratulations class of 2023!

William Weir

STUDENTS

Congratulations class of 2023!

Yiqi Yang

Yue Ru (Anna) Guan

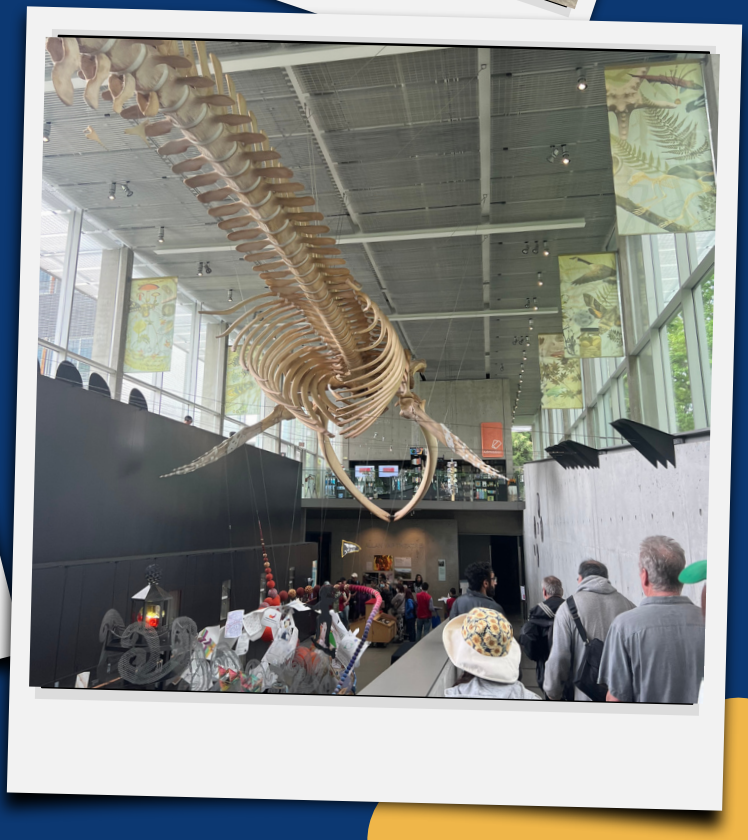
Congratulations class of 2023!

FIELD TRIPS

This year we have been so lucky to go on 7 field trips. From the UBC Farm to the Vancouver Aquarium and Grouse Mountain. Each of these excursions has been an enriching experience, allowing us to explore the world around us and learn valuable lessons beyond the confines of a traditional classroom. Let's delve into the highlights of these unforgettable adventures!

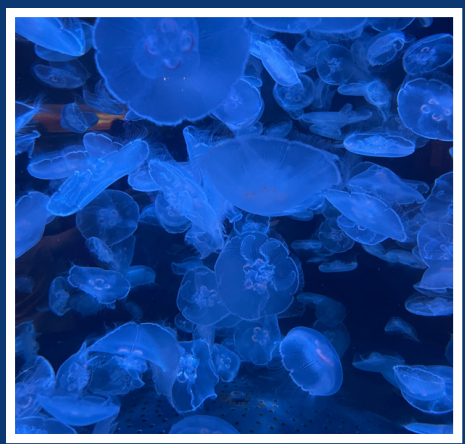
BEATY BIODIVERSITY MUSEUM

Beaty is Vancouver's natural history museum located on UBC campus. We were given a guided tour through the spectacular biological collections, with 20,000 square feet of exhibits, from insects to birds!



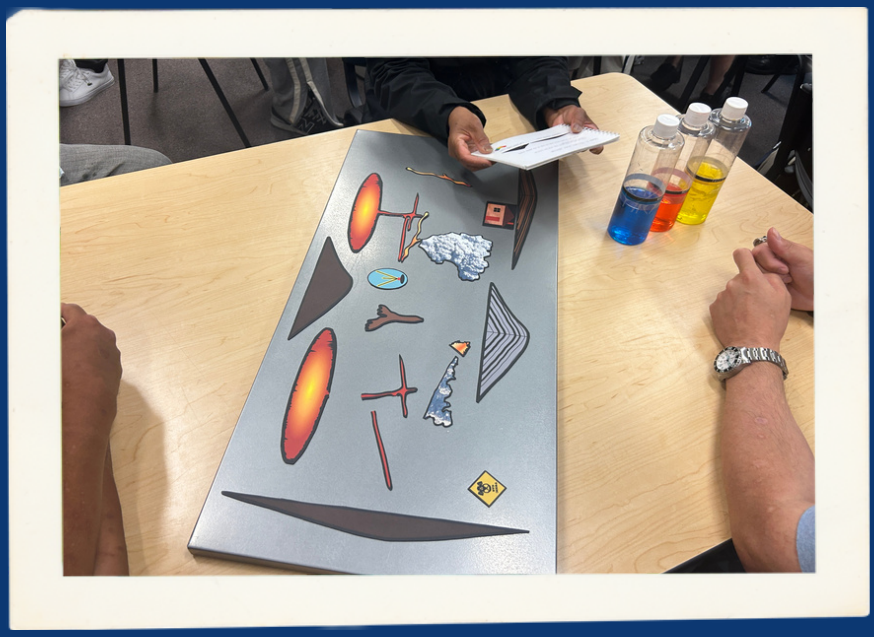
AQUARIUM FIELD TRIP

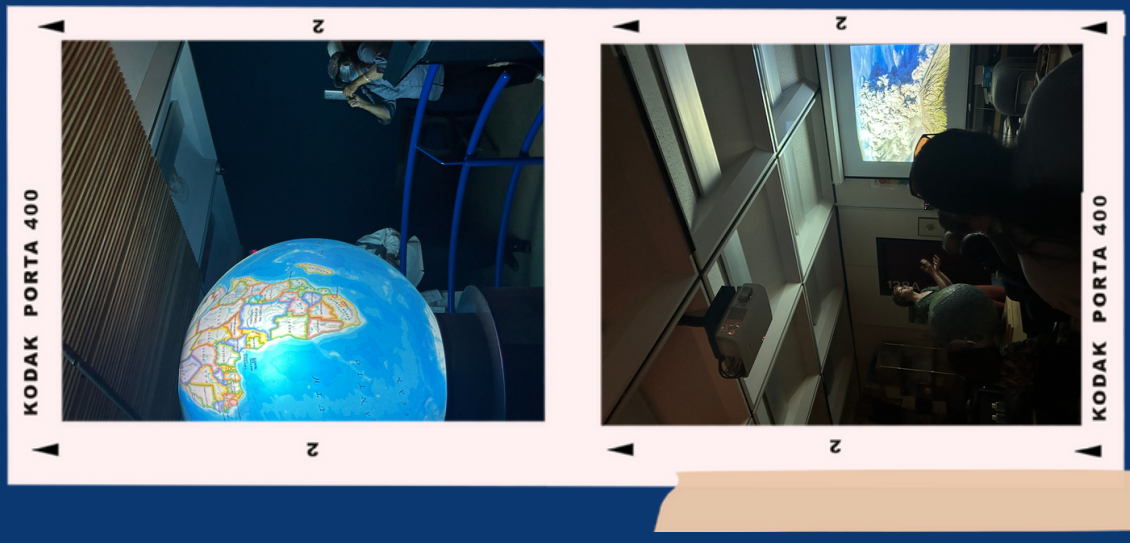
At the Vancouver Aquarium, we were captivated by the underwater world, observing otters, sea lions and many colorful tropical fish. This visit emphasized marine conservation's importance and the urgent need to protect our oceans. Thank you Dr. Peter Raven for the awesome tour!



PACIFIC MUSEUM OF THE EARTH

This year we visited the Pacific Museum of the Earth. We went on the Volcano Voyage which is a program that helps students explore the exciting world of volcanoes. It provides a basic understanding of how volcanoes work, why they erupt explosively, and how scientists use volcanic rocks to study the underground magma sources that trigger eruptions.





H.R. MACMILLAN SPACE CENTER

Here we learned about life on the International Space Station (where astronauts live and work) and discovered the Artemis Program, our next venture into the universe!

GROUSE MOUNTAIN

Every year the Science 101 group attends Grouse Mountain as one of the major field trips during the program. We got to experience the "First Nations Presentation" and "Bears of North America" tour. We enjoyed the stunning nature and awesome view of the city.

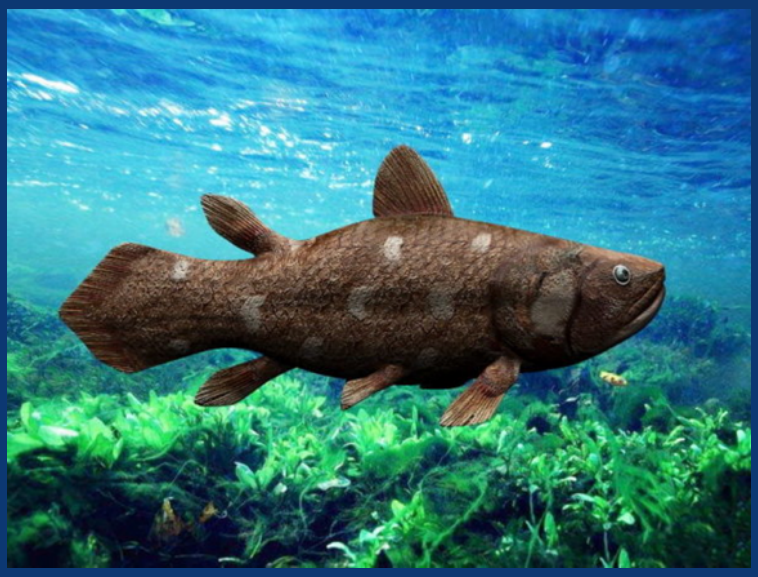
GROUSE MOUNTAIN

UBC FARM

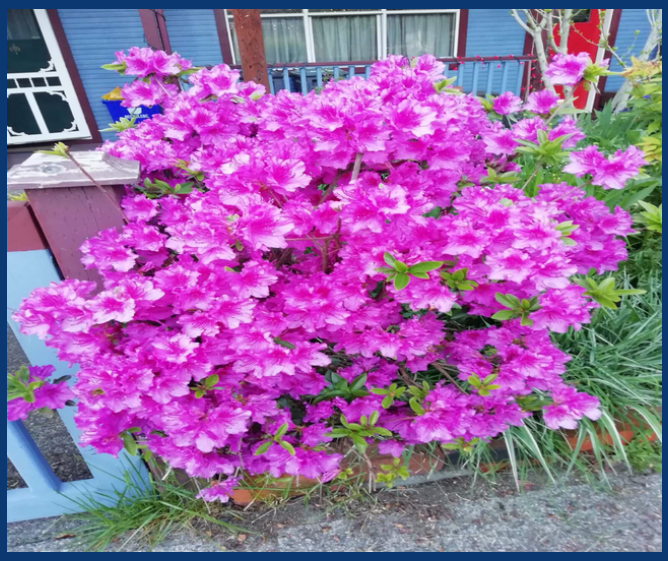
The UBC Farm gave us a guided tour of their space to learn about food sustainability, global issues in food systems, and current research in agriculture. We also visited their Farmer's Market!

FINAL PROJECTS

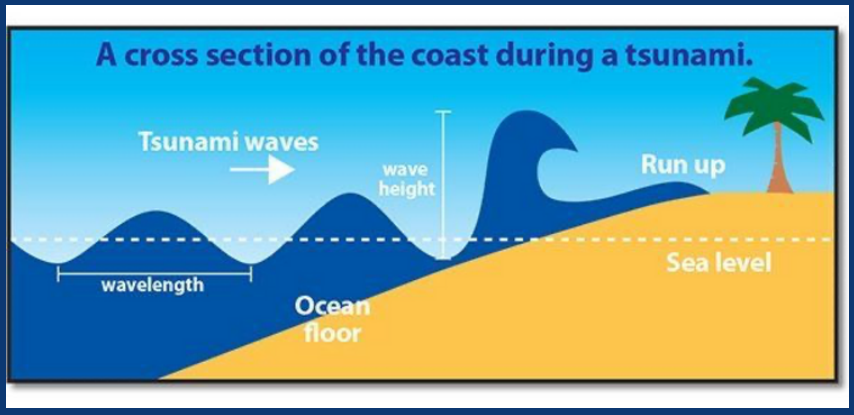
Here are just a few examples of what Science 101 students are studying!



Angel is looking at the diversity of fish in the ocean! Her project describes the characteristics of a variety of fish and compares their bheaviours and life cycles

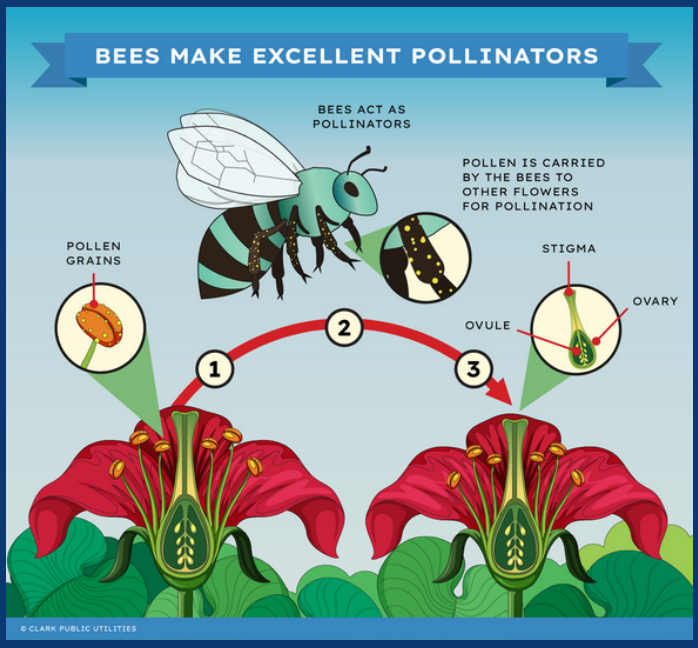


Jin and Yiqi are researching various species of evergreen shrubs that we see around our Vancouver community. They hope that they can demonstrate the importance of these plants.

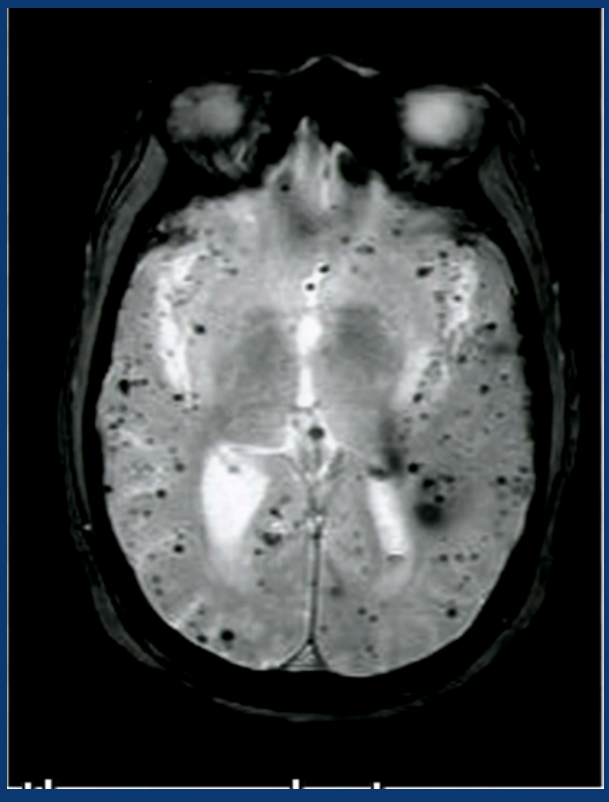


Nacer and Liza's project is about Tsunamis! They are researching how they occur and the different scales of destruction!

FINAL PROJECTS



William is researching everything surrounding Honeybees! He is exploring how they make great pollinators and the logistics behind harvesting honey.



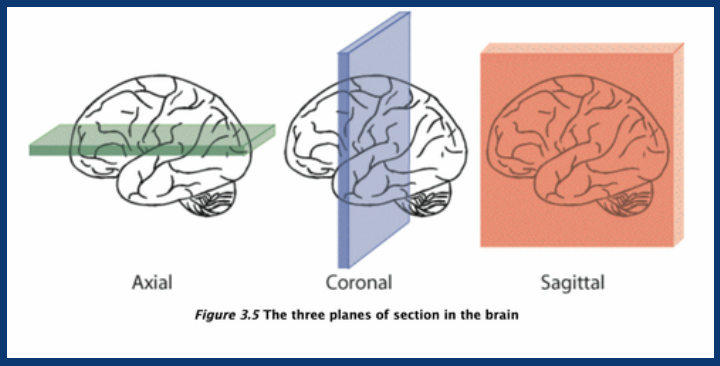


Figure 3.5 The three planes of section in the brain

Bill is studying the topic of Microbleeds! Microbleeds are accumulations of blood in the brain that occur after chronic structural abnormalities.

MESSAGE FROM MARVIN

Marvin

Mentor

So grateful to be part of Science 101 in 2023!! So happy for all the students that were accepted for this year.

One of the many highlights, having a great meal with all the students at the Nest. Everyone was really enjoying themselves with the food and great conversations with all. The food was amazing, tasteful, and very delicious. One of my favourite moments was hearing all the laughter coming from the students. Laughter is great medicine.

Another highlight is when all people are on break from lecture. More food, lots of snacks for everyone in class and of course the tea, juice, crackers, bananas, oranges.

Thank you UBC Science 101 for hiring me as an Alumni Mentor, what a great honor and blessing!

Thank you very much to all the Academic specialists, Professors, Scholars, Researchers for doing such an amazing job and sharing all the science related topics! So much knowledge for a short period of time, again Thank you!

Im forever grateful for all the program coordinators...Negar Balouchestani-Asli, Lauren Gill, Alandra Moosmann Mendez, Jennifer Lim and Mona Golmohammadzadeh. You are the best in all that you do!! You got it! Bless all of you.

Thank you very much to all the volunteers.

Thank you to Dawn Irmscher...Payroll Director, Nancy Cook, Academic Project Manager. You make UBC happen!

Living the dream, that's what life is all about!

Great Blessing to All,

Alumni Mentor
Marvin J. Delorme

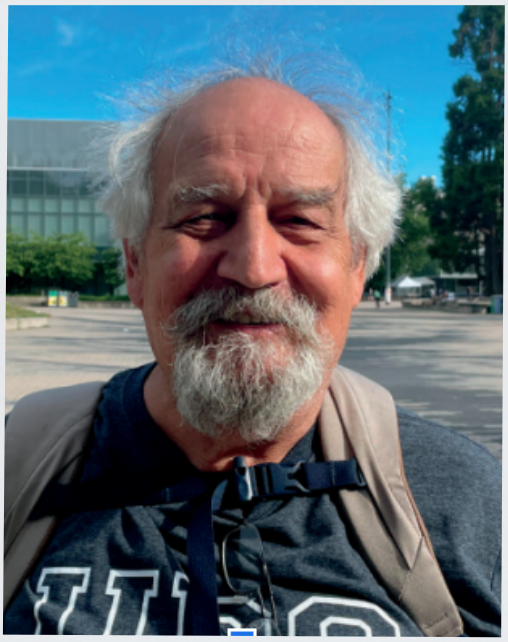
MESSAGE FROM GILLES

Once again we are halfway through summer and we move on from participating in another three months of enlightening lectures. We looked at everything from the possibility of unicorns jumping over rainbows to studying issues around population growth and risk. We were asked if it was possible for a city council in South Carolina to have passed a law forbidding the ocean to rise more than 20 centimetres. (No, but they tried.)

We learned how to isolate our DNA during our sessions about genetics, and studied how our immune system works as we were led into the chemistry of our bodies. Several lectures, including one about glaciers, dealt with climate change.

Although my favourite lectures were about thinking scientifically, about how science works, and Introduction to Systems Theory, I thoroughly enjoyed every lecture. It was a privilege to be engaged as a mentor with the Science 101 Program and I am grateful for everything I learned from everyone, professors, coordinators, volunteers, and students.

As in previous years, we had super good times in discussions with fellow travelers on this path to learning about Science during our meetings in The Nest before the lectures. Plus the food from the Deli was great. Thank you everybody.



Gilles

Mentor

VOLUNTEERS

Science 101 would not be possible without our amazing volunteers. They are an essential part of making Science 101 a positive experience for students.

Asfar

Brian

Erin

Katie

Noah

Parsa

Sasha

Shayda

Toktam

MESSAGES FROM OUR VOLUNTEERS

It's really difficult to express how much volunteering with Science 101 has meant to me. It has been a highlight this summer which I'll always cherish. I have felt so lucky to get to know the students, volunteers, coordinators and instructors of Science 101. I joined to help others learn but, in doing so, gained so much knowledge myself. Watching students become excited about science has reinvigorated my own passion for science. Thank you Science 101!

Sasha

Hello everyone and congratulations on graduating! Thank you all for being an amazing class that I had the wonderful opportunity to learn alongside with. I hope that all of you have learned something valuable from Science 101 and be able to appreciate the science around you!

Brian

Congratulations science 101 class of 2023! These past two and a half months, I have had an incredible opportunity to work with all the wonderful students, lecturers, and mentors. I always looked forward to lecture days because of the interesting conversations and questions during class. Your passion for learning is inspiring, and I hope you continue to learn and engage with science. It has been an amazing summer, and I wish you all the best. Please feel free to reach out, especially if you want to know more about cucumbers!

Katie

MESSAGE FROM OUR VOLUNTEERS

Congratulations Science 101 2023 Graduates! It has been such a privilege to share the classroom with the incredible students this year. I am very grateful to have made connections with so many incredible learners this year and I will forever cherish the experiences we have shared as a part of the Science 101 community. I hope you all continue to challenge yourselves and others to always be curious, and never stop thinking like scientists! Spending time with you all this summer has been the highlight of my week every week and I wish you all the absolute best in your futures. Well done and I hope you are all proud of your accomplishments this summer!

Toktam

Congratulations to all of the students in science 101!! I have had such an incredible time participating in this program and I hope you enjoyed it just as much as I did. Good luck with your future pursuits!

Erin

I had such a fun summer learning with you all! Not only from lectures (and all the interesting questions you asked during them), but also in the conversations we had. I hope you all stay curious and use the skills you learned here to explore things that interest you!

Noah

GRADUATION INVITE 2023

UBC Science 101 Class of 2023 Graduation

Thursday August 3rd, 2023
4:30 PM - 8:00 PM
Michael Smith Laboratories (MSL)
Rooms 101 & 102

SCHEDULE

4:30-5:30: Refreshments and Round 1 of Final Project Display
5:30-6:30: Graduation Ceremony
6:30-7:00: Round 2 of Final Project Display
7:00-8:00: Dinner & Celebration

THE UNIVERSITY OF BRITISH COLUMBIA
Faculty of Science

UBC MSL

SIGNATURES & MEMORIES

SIGNATURES & MEMORIES

FUN MOMENTS!


UBC
UBC


UBC
UBC
UBC


SCIENCE
101
DNA
RNA
STARS
PLANETS
MICROBES


UBC


UBC


STOP
UBC


THIS IS HOW BIG YOUR GENOME IS...
~3,000,000,000!

Thank you to the Faculty of Science and Michael Smith Laboratories for generously allowing us to use their spaces for Science 101. We are immensely grateful for their support and cooperation!

THE UNIVERSITY OF BRITISH COLUMBIA
Michael Smith Laboratories

THE UNIVERSITY OF BRITISH COLUMBIA
Faculty of Science