

The background of the entire page is a photograph of two jellyfish swimming in clear blue water. The jellyfish are translucent with a yellowish-orange bell and long, thin, reddish-brown tentacles. They are positioned in the lower half of the frame, swimming upwards.

Class of 2012
Yearbook

Science 101

**Did you know jellyfish
are a low fat meal?**

Science 101

is a 4-month summer program offered to individuals who have had difficulty accessing post-secondary education.

There are no fees associated with the course and no pre-requisite knowledge is required. No university credit is given upon completion. The program is sponsored by the University of British Columbia Faculty of Science Dean's Office and private donations.

The objective of the program is to give students an introduction to topics in science, to help them better understand the world around them, to broaden their perspectives, and to have fun with science.

Students enrolled receive lectures from University of British Columbia professors and students about fascinating topics in Science. Students are also given the opportunity to attend tutorial sessions as well as field trips in the Vancouver area. One of which, an evening at the H. R. MacMillan Space Centre, is an event open to the public and students are encouraged to bring family and friends.

A graduation ceremony is held at the end of the program to honor the students who have completed the program.

Volunteers are an important part of the program and are available to provide assistance to students inside and outside of class.



Did you know a cocoon is spun of silk?

A message from Dr. Simon Peacock, Dean of Science

Dear graduates,

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

When looking back on what you have learnt through the Science 101 program, I hope you'll find you now have a better understanding of science and have gained new perspectives on the world around you. The knowledge and insight you have acquired provides you with a foundation to more fully understand and approach scientific topics you may encounter in the future, either in your everyday life or academically.

Science 101 has provided you with an excellent introduction to many scientific topics and has hopefully ignited your passion to continue learning about science.

Congratulations on your achievement!

Sincerely yours,

Simon Peacock
Dean
Faculty of Science

**Did you know the first
microscope invented was**

A message from Lisa Wong, Program coordinator

Dear Graduates,

Congratulations on your graduation from Science 101!

When you reflect on your time in Science 101, I hope you see your successful completion of the program as proof of your continued ability to learn and grow. No matter what you have had to overcome in life, your abilities to question the world around you and seek to discover that which you do not (yet) understand are untouched.

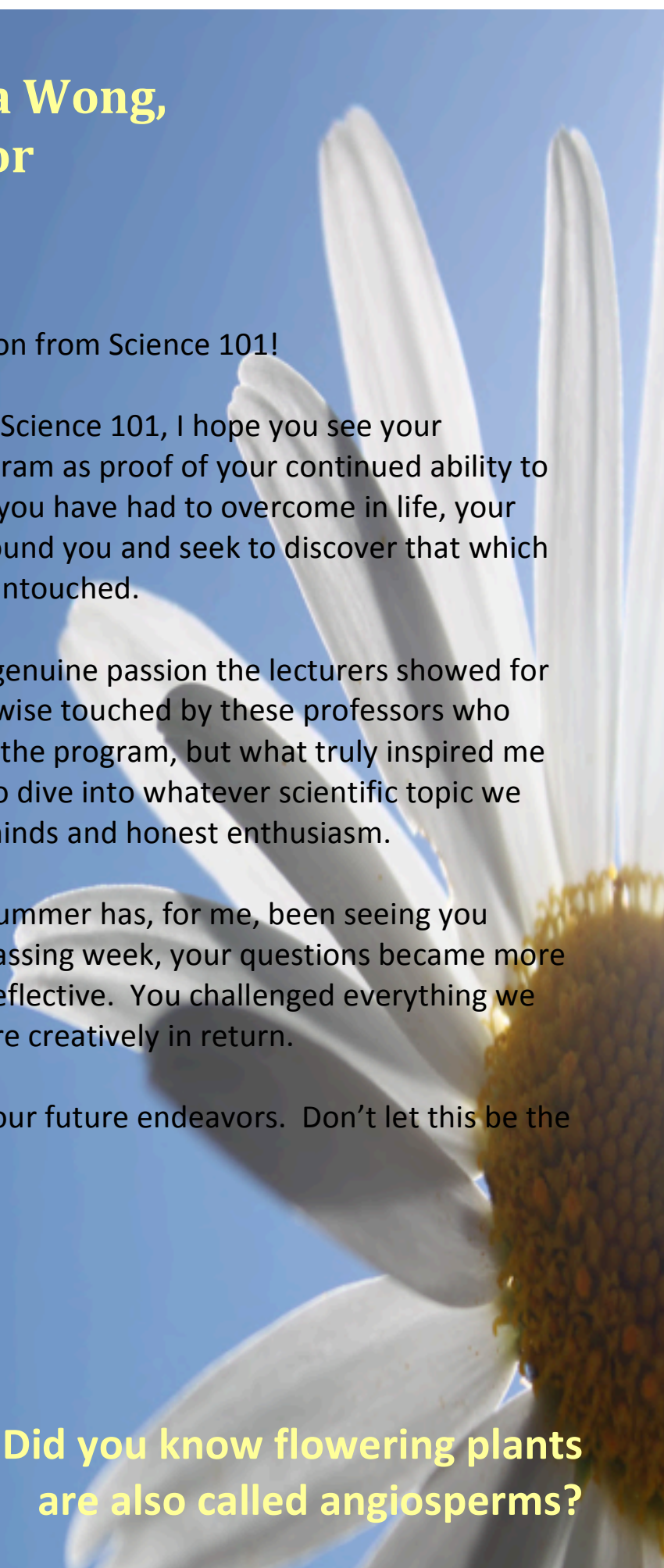
Many of you commented on the genuine passion the lecturers showed for their respective topics. I was likewise touched by these professors who generously donated their time to the program, but what truly inspired me each week was your willingness to dive into whatever scientific topic we threw at you, always with open minds and honest enthusiasm.

The most rewarding part of this summer has, for me, been seeing you mature as students. With each passing week, your questions became more intelligent, more focused, more reflective. You challenged everything we told you. We thought harder, more creatively in return.

I wish you the best of luck in all your future endeavors. Don't let this be the last time we see you on campus.

Sincerely,
Lisa

**Did you know flowering plants
are also called angiosperms?**



A message from Leigh Hobbs, Program coordinator

Dear Graduates,

Once again, the final days of Science 101 have left me with mixed emotions. As pleased as I am to see you successfully complete the program, I feel that I am just getting to know many of you. You've definitely made life interesting. Your perspectives and comments were insightful and you always made me laugh. You were so inquisitive and eager to learn about whatever topics were being presented; areas as diverse as astronomy, physiology and botany were met with the same degree of interest and speculation. Doubtless, this was in no small part due to the lecturers who so generously donated their time to the program. The passion they have for their fields, and learning in general, made it easy to share in the enthusiasm they generated in the classroom.

While the quality of the students and the lecturers are critical to the success of the program, there are many others whose work behind the scenes is just as invaluable. Lisa, it was great to work with you. Thank you to Nancy and Dr. Cavers for their support. Without you, the Science 101 program would never have got off the ground.

Science 101 is such an amazing program. It truly gives students the opportunity to make positive changes in their lives, which is something that is so wonderful to see and to, hopefully, be a small part of. I am so glad I was able to be involved with the program a third year and once again have learned a lot from the experience, both inside and outside the classroom.

I wish you the best of luck in your future pursuits. Congratulations to this year's graduates!

Sincerely,

Leigh

Did you know fireworks need oxygen to burn?

Program schedule

May				
Monday	Tuesday	Wednesday	Thursday	Friday
	Lecture 6 to 8:30pm UBC campus	Tutorial 3 to 5pm UBC Learning Exchange	Lecture 6 to 8:30pm UBC campus	
	1	2	3	4
7 Orientation	8 Dr. Julie Robillard "An introduction to neuroscience and brain disease"	9 No tutorial	10 Dr. Shona Ellis "The sex life of plants"	11 Trip to Camosun bog and Botany lab
14	15 Dr. Peter Raven "The biodiversity of fish"	16 Leigh Hobbs "Respiratory physiology"	17 Dr. Eugene Barsky Library session	18 Trip to the Vancouver Aquarium
21	22 Dr. Jaymie Matthews "Mapping the universe including the invisible parts"	23 Leigh Hobbs "Cardiac physiology"	24 Dr. Jaymie Matthews "Mapping the universe including the invisible parts"	25
28	29 Dr. Peter Newbury "Fixing the universe"	30 Leah Lim "Genetics"	31 Trip to the Nitobe gardens Mona Kwong "Pharmaceutics: Lab I"	

June				
Monday	Tuesday	Wednesday	Thursday	Friday
	Lecture 6 to 8:30pm UBC campus	Tutorial 3 to 5pm UBC Learning Exchange	Lecture 6 to 8:30pm UBC campus	
				1
4	5 Dr. Julian Davies "Antibiotic resistance"	6 Lisa Wong "Cells"	7 Botany lab Dr. Hugh Brock "Genetics"	8 Trip to Capilano suspension bridge
11	12 Dr. Jim Rupert "Evolution"	13 Jenn Burt "Pacific salmon ecology"	14 Trip to the Beaty Biodiversity museum Dr. Anthony Griffith "The nature of Science"	15
18	19 Jacquelyn Cragg "Neuroscience 101"	20 Leigh Hobbs "Viruses"	21 Dr. Kurt Grimm "Planet water, people planet?"	22 Trip to VanDusen Botanical Gardens
25	26 Dr. Andrew Mosi "The chemistry of food"	27 Kimberly Rawes "How to write a bursary application"	28 Trip to the Museum of Anthropology Dr. Chris Ambrose "What does it mean to clone a gene?"	29

Program schedule

July				
Monday	Tuesday	Wednesday	Thursday	Friday
	Lecture 6 to 8:30pm UBC campus	Tutorial 3 to 5pm UBC Learning Exchange	Lecture 6 to 8:30pm UBC campus	
2 Mid-term break	3 Mid-term break	4 Mid-term break	5 Mid-term break	6 Mid-term break
9	10 Dr. Chris Waltham "Nuclear energy: It's dangers and possibilities"	11 Open House and the HR MacMillan Space Centre	12 Dr. Tara Ivanochko "Climate basics"	13
16	17 Dr. Chris Addison & Dr. James Charbonneau "Interesting properties of light"	18 TRIUMF tour	19 Dr. George Homsy "Fluid flows: Their importance in everyday life and human existence"	20
23	24 Dr. Fok-Shuen Leung "Infinity in the palm of your hand"	25 Lisa Wong "Vaccines and the flu"	26 Mona Kwong "Pharmaceutics: Lab II"	27 Trip to Grouse Mountain
30	31 Dr. Allan Debono "The world of the cell"			

August				
Monday	Tuesday	Wednesday	Thursday	Friday
	Lecture 6 to 8:30pm UBC campus	Tutorial 3 to 5pm Learning Exchange	Lecture 6 to 8:30pm UBC campus	
		1 After Science 101 & work on final projects	2 Baillie Redfern "Genetic engineering: Food, perfume, and drugs"	3
6	7 Dr. Kimberly Voll "Introduction to computer science"	8 Work on final projects	9 Graduation ceremony	10

Lecture descriptions

Dr. Julie Robillard, “An introduction to neuroscience and brain disease”

In her lecture Julie discussed the basics of brain anatomy, neurotransmission, as well as various brain diseases.

Dr. Shona Ellis, “The sex life of plants”

Students explored a variety of plants and learned how they reproduce. From mosses to lilies the mystery of plant sex were revealed. The next day Shona took the class on a **field trip to Camosun bog** then to her **Botany lab** for hands on learning.

Dr. Peter Raven, “The biodiversity of fish”

From fish that can live on land to others that can create electricity, and everything in between, Peter’s talk highlighted the fascinating varieties of fish. Peter took the students to the **Vancouver Aquarium** where they saw the fish they learned about.

Leigh Hobbs, “Respiratory physiology”

Students learned about the respiratory system, including ventilation, gas exchange, oxygen transport, and diseases such as asthma.

Dr. Eugene Barsky, Library session

In this hands on library session students learned how to locate books in the catalogue by keyword, author or topic and how to evaluate print resources.

Dr. Jaymie Matthews, “Mapping the universe including the invisible parts”

No human being has ever been beyond the Moon, about 400,000 km from Earth. And our space probes have only ventured slightly beyond the orbits of the known planets. But the Universe is incredibly vast. How vast? How do we know how vast? Jaymie explored these and other questions in a fascinating lecture.

Leigh Hobbs, “Cardiac physiology”

Students were introduced to the cardiovascular system. Topics covered included the mechanics of the heart, the electrical activity that causes contraction, and heart disease.

Dr. Jaymie Matthews, “Astromony”

Science 101 students are an inquisitive bunch and Jaymie’s lecture prompted numerous questions so he dedictaed a second lecture to answering those questions.

Dr. Peter Newbury, “Fixing the universe”

The history of astronomy is the history of science. The people who helped build today's theory of the Universe were all great scientists who answered astronomical questions. In his presentation Peter followed in their footsteps to figure out how the Universe works by watching the sky, making up a theories, and then fixing them.

Leah Lim, “Genetics”

Unique you: with 99.9% of our DNA identical with every other human, what exactly makes you YOU?

Nitobe Gardens

Student went on a field trip to the UBC Nitobe Gardens. Student received a guided tour and learned about the symbolism of the Japanese garden.

Mona Kwong, “Pharmaceutics: Lab I”

In the first part of the lecture Mona taught the students about emulsions. The remainder of the lecture was hands on Science where students applied what they learned to make ice cream (and got to eat it too!)

Dr. Julian Davies, “Antibiotic resistance”

The discovery of antibiotics in the 1950s led to the prediction that bacterial infections would soon be under control, if not eliminated. This has not happened and more and more antibiotics are becoming ineffective due to the development of antibiotic resistant strains. In his lecture Julian presented these and other topics.

Lisa Wong, “Cells”

In her tutorial Lisa explored human cells and bacterial cells, and the important role bacteria play in the human body's function.

Botany lab with Dr. Shona Ellis

Due to popular demand Shona opened her lab to students a second time!

Dr. Hugh Brock, “Genetics”

Students were introduced to genetic variation in animals, plants and humans as well as the chromosomal basis for the way in which genetic variants are inherited from one generation to the next.

Capilano Suspension Bridge

Students went on a field trip to Capilano suspension bridge. They had a tour of the history of the suspension bridge, went on a nature walk where they learned about nurse logs and slugs, and had lunch at the Logger's Grill.

Dr. Jim Rupert, "Evolution"

Evolution is probably the most studied and the most misunderstood, the most respected and the most criticized, the most quoted and the most misrepresented, and the most loved and the most hated of all contemporary scientific theories. In his lecture Jim introduced the basics of Charles Darwin's theory of the evolution of species through natural selection.

Jenn Burt, "Pacific salmon ecology"

Right now is a good time to learn about salmon! 2009 marked one of the worst sockeye returns to the Fraser River in history, while 2010 has been the biggest return since 1914! In a presentation packed with live video-footage and student interaction Jen provided a close-up and unique perspective on salmon and salmon scientists.

Beaty Biodiversity Museum

Student went on a guided tour of the UBC Beaty Biodiversity Museum where they saw a variety of biological specimens up close.

Dr. Anthony Griffith, "The Nature of Science"

Life-long learning should be a goal for everyone. It is the key to understanding the world around us. Deep understanding is best achieved by active engagement with the information at hand. Only when we can "perform" in a way that reflects our understanding can we be convinced (and can we convince others) that we truly do understand.

Dr. Leanne Ramer and Dr. Matt Ramer, "Neuroscience 101"

Students learned about the basics of the nervous system and their application to spinal cord injury.

Leigh Hobbs, "Viruses"

An introduction to viruses: what they are, how they replicate and infect cells.

Dr. Kurt Grimm, "Planet water, people planet"

In his lecture Kurt introduced students to the threats industrialized humanity poses to sustainability.

VanDusen Botanical Gardens

Students braved the rain to go on a guided walking tour of the gardens.

Dr. Andrew Mosi, “The chemistry of food”

In his lecture Andrew discussed issues related to the chemistry of food, with respect to: what we need; what we should eat; what to avoid; flavor and nutrition. At the end of his lecture Andrew used liquid nitrogen to make ice cream!

Museum of Anthropology

Student went on a guided tour of the UBC Museum of Anthropology.

Dr. Chris Ambrose, “What does it mean to clone a gene?”

News headlines are filled with reports of scientists "finding genes". But what are genes? And how do scientists "find" them? In his lecture Chirs explained the "how" and "why" of gene hunting.

Dr. Chris Waltham, “Nuclear energy”

In his lecture Chris discussed the dangers and possibilities of nuclear energy.

Open House at the H.R. MacMillan Space Centre

Students brought their family and friends to explore the Space Centre! Students visited the cosmic courtyard, Jaymie Matthews gave yet another fascinating lecture on outer space, and the evening ended with a planatarium show.

Dr. Tara Ivanochko, “Climate basics”

Tara covered the basics of the Earth's radiation balance, the role of greenhouse gases in the atmosphere, the natural variability in climate, and the contribution of human activity to global warming.

Dr. Chris Addison and Dr. James Charbonneau, “Interesting properties of light”

In their lecture Chris and James talked about the properties of light. To illustrate ideas presented the lecturers used a number of demonstrations. They even brought spectrometers so students could see the electromagnetic spectirum of elements!

Tour of TRIUMF: Laboratory for particle and nuclear physics

Dr. George (Bud) Homsy, “Fluid flows: Their importance in everyday life and human existence”

In his lecture Bud explained the mathematics of fluid flows from water in a spray bottle to how a plane flies. He ended his lecture with some mind-boggling videos.

Dr. Fok-Shuen Leung, “Infinity in the palm of your hand”

The concept of infinity is one that has affected mathematics and our understanding of the world in interesting and unexpected ways. In this lecture students looked at the concept in science - as well as in snowflakes, flights of arrows, and magical hotels.

Lisa Wong, “Vaccines and the flu”

In her tutorial Lisa discussed the history of the flu (from the 1918 Spanish flu to the recent H1N1 and H5N1 epidemics), what causes the flu and why it can be severe, and how the vaccine protects you.

Dr. Mona Kwong, “Pharmaceutics: Lab II”

In her second lecture Mona described pharmaceutics and emulsions in greater detail. Once again students were able to apply what they learned by making an emulsion in the form of a hand cream!

Grouse Mountain

Students went on a guided tour of Grouse Mountain where they visited the timber wolves, grizzly bears, and saw the lumberjack and birds in motion shows.

Dr. Allan Debono, “The world of the cell”

In this lecture students found out what their trillions of cells do each and every day!

Baillie Redfern, “Genetic engineering: Food, perfume, and drugs”

In her lecture Baillie investigated a variety of household products, foods and pharmaceuticals that have been genetically altered to benefit human beings - for better or worse.

Dr. Kimberly Voll, “Computer Science”

In a fascinating lecture Kim introduced the students to topics in computer science.

Open House @ the Space Centre

Did you know there are more than 2,500 satellites orbiting the Earth?

Wednesday July 11, 2012

5:45 to 8:15pm

The H. R. MacMillan Space Centre invites Downtown Eastside residents to a fascinating open house.

Free of charge

See the planetarium show **Constellation Markers**

Touch a Moon rock

Learn about space

Visit the Cosmic Courtyard exhibit

Free transportation to and from the Space Centre

Pick up locations and times are:

Cordova and Gore at 5:15 & 5:45pm

Commercial and Grant (Grant street at East loading bay) at 5:15 & 5:45pm

Free food and drink

Event sponsored by the

H. R. MacMillan Space Centre,

the Vancouver Trolley Company,

and the University of British Columbia

H. R. MacMillan Space Centre
1100 Chestnut street, Vancouver

www.spacecentre.ca

Academics

At the end of the Science 101 program students are required to complete a final project. The purpose of the final project is to give students the opportunity to further explore a scientific topic of their choice and to share with others what they have learned. The topic may be something previously covered in class or only briefly touched upon. The only requirement is that the topic is scientific and relevant to the course.

Students are given the opportunity to display their projects at the graduation ceremony.

The projects involve a wide range of topics and are often presented in a variety of formats, including posters.

Did you know butterflies undergo a complete metamorphosis?



The final projects

“What is Dyslexia?” by Jacky Boyle

How do you define dyslexia? There are many definitions. How does dyslexia affect the brain? Does the brain of someone with dyslexia look different from the brain of someone without dyslexia? My project explored these and other questions.

“Adam’s River Sockeye Salmon” by Charlene Bozoian

For her project Charlene explored a topic in Science that was close to home, the sockeye salmon found in Adam’s River, BC. She learned about their migration pattern and life cycle among other things.

“Does the brain sleep?” by Grace Chen

For my project “I was interested in what the brain is doing while we sleep and the health benefits of good rest”.

“Cerebral Palsy” by Debbie Finlay

For her project Debbie explored how the 3 main types cerebral palsy affects the brain. “Many people have a combination of all or some of the symptoms such as controlling and coordinating muscles used for walking, speech, and hearing.

“The Burgess Shale” by Stephen Jiggins

“My final project is the Burgess Shale, a deposit of fossils 530 million years old from a sea that nurtured more varieties of life than can be found in all our modern day oceans. It is located in BC and can be seen first hand by anyone wishing to do so”.

“Transgenic mice in medical research” by Lorna Jean Johnson

Transgenic mice are “mice that have their genes altered to develop human diseases such as lung cancer so that scientists can study how the disease develops”.

“Near Earth Objects” by Mike Kirk

For his final project Mike explored Near Earth Objects or NEOs. These are asteroids and comets that approach Earth during their orbit around the sun.

“Lonely Planet” by Wilson Liang

For my project “I illustrated the current debate on whether or not there is life outside of Earth. Are UFOs only imaginary phenomenon from Science fiction?” Some scientists believe suggest there is life beyond Earth while others do not.

“Carbohydrates and the Food Chain” by Robert Makela

For his project Robert explored whether bacon and eggs are a better supper or breakfast!

“The Solar system” by Darryl Manuel

For my final project I described “each planet, what it is comprised of, how many moons it has and their respective orbits around the sun”.

“The make up of our solar system” by Richard McDonald

For my final project I made a 2-dimension model of our solar system.

“The Nurse Log” by Lorraine Nepitabo

Lorraine chose to learn about nurse logs for her project. A nurse log is usually found on the floor of a forest and decays over time. The log provides nutrients to saplings that grow on it, as well as insects.

“The Importance of the honey bee” by Mari Numminen

For her project, Mari explored how the honey bee is an integral part of ecology. She learned about the life cycle of the honey bee, threats to the honey bee population, and the importance of the honey bee in agriculture.

“Harm Reduction” by David Richards

David chose to do his final project on harm reduction. He explored how harm reduction strategies have saved lives and reduced the transmission of HIV. “As a resident of Vancouver’s DTES I feel that everyone should be exposed to the options available to people marginalized by poverty, addiction, and homelessness”.

“Osteoporosis” by Kathleen Still

For her final project Kathleen researched osteoporosis. She learned about causes, such as genetics, diet, and lifestyle, as well as treatments such as weight-bearing exercise and vitamin and mineral supplements.

“Understanding high blood pressure” by Christina Tsang

For my final project I wanted to understand high blood pressure. “I have had high blood pressure for more than 10 years. Knowing what it is is important to me since it can cause health problems”.

“Forest trees and fungi” by Anne Young

For her final project Anne explored the mutualistic relationship between forest trees and fungi.

The students

Jacky Boyle

My most memorable Science 101 experiences were “the field trip to Camosun Bog and Botany lab with Dr. Shona Ellis, looking at dead insects under a microscope, and the “warm scarf” of a snake curling its way around my neck!”

The topics Jacky found most engaging were the Biodiversity of Fish and Evolution. “It was fascinating to learn of the species of the fish living on the coldest part of the ocean [and that] 80% of the ocean is not discovered.



Jacky at the Capilano Suspension Bridge.



Jacky with Dr. Shona Ellis' snake!

“Science 101 gives alternate perceptions and challenges us to wonder and discover and wonder some more. You get to see things up close that you wouldn't normally get the chance to see”. “Thank you Science 101 lecturers for your time and knowledge and skilled observations”.

To her Science 101 classmates Jacky says, “we are all teachers, teachers by learning”.

Charlene Bozoian

The topics Charlene found most engaging were the lectures on the universe. These and other lectures contributed to her understanding of the world from a scientific perspective. The lectures “opened new doors of knowledge and I experienced many interesting subjects that I never had experienced before”. Science 101 “gave me a more complete view of life and the importance that plants, animals, and climate play every day”.



Charlene and Lorna with the giant whale at the Beaty Biodiversity Museum.

Charlene at TRIUMF.



To her Science 101 classmates Charlene says, “enjoy this wonderful course and all the interesting subjects and outings that explore our planet, life, and its secrets that are unlocked for you”.

Grace Oi Lee Chen

Science 101 contributed to Grace's understanding of the world. She "learnt why people sometimes look more like their mom or dad depending on genetics. It was also interesting [for her] to learn that crown fish can switch from male to female".

"Being a part of this program has made me want to continue to understand the Science of the human body, the mind, and universe. There is so much to learn".

Marcus, Grace, and Christina
on the skywalk at Capilano.



Grace at TRIUMF.



Grace believes Science 101 will help her in her future pursuits. "Science 101 has helped me realize that knowledge can be fun and practical. [I believe that] so many people can benefit from this program". I am very grateful to be accepted and participate in Science 101. It has helped me realize that even though I only have a grade 6 education I can continue to learn and grow".

Debbie Finlay

“My most memorable experiences were working in the lab and learning about emulsions and making ice cream. I enjoyed all the different speakers, very unique teaching skills”.

Science 101 “is a great way to learn about different topics in all types of Sciences. It helps people that have not been in school for a long time feel confident and happy about going to the University of British Columbia”.



Debbie and Kathleen at the Nitobe Gardens.



Debbie and Tyto the owl at Grouse Mountain.

I want to thank Leigh and Lisa, Science 101 program coordinators for all their help and support. To her classmates Debbie says, “you are never to young or old to learn new things!”

Stephen Jiggins

“Among many memorable experiences two will stay with me; Dr. Kurt Grimm’s suggestion that we view objects we see every day through binoculars and the entire “Infinity and beyond” lecture with Dr. Fok-Shuen Leung”. “The instructors were full of enthusiasm about their subjects and that enthusiasm was contagious and captivating. I also learned something new or had misconceptions corrected in each of these lectures”.

Stephen making in the
Pharmaceutics lab & at TRIUMF.



“Science 101 has enriched my understanding of the world by providing new information or correcting misconceptions”. For example, “I thought embryonic stem cells were a panacea and would eventually be used to cure a multitude of injuries and diseases. I was not aware that this positive potential was offset by an equal negative potential”.

“Science 101 has helped me to establish study habits, it has bolstered my confidence and self esteem and has invigorated a desire to continuously educate myself”. “I have recommended Science 101 to other people. I have not encountered anything that offered so much and asked so little in return. The efforts of the coordinators, lecturers, and volunteers have created a program that cannot fail to have a positive effect on anyone who participates in it”.

Albert Einstein said “Imagination is more complicated than knowledge. Knowledge is limited, imagination encircles the world”. To his classmates Stephen says, “May we all continue to fuel the fires of our imaginations with knowledge.

Lorna Jean Johnson

Lorna enjoyed “learning about fish and how they fit in the theory of evolution, the phylogenetic tree with lungfish (the closest species to land animals), and Dr. Rupert’s explanation of evolution was fascinating”.

Science 101 “is taught by scientists who are passionate about their fields and ignite enthusiasm in all of us for learning and understanding the world”.



Charlene and Lorna at the Botany lab.



Lorna on the Capilano suspension bridge.

To her classmates Lorna says, “follow Marie Curie’s advice, life is not easy for any of us, but what of that? We must have perseverance and above all confidence in ourselves. We must believe that we are gifted in something and that this thing, at whatever cost, must be attained”.

Mike Kirk

Mike found all the topics interesting. “The first [lecture] on Neuroscience got me thinking. I like Astronomy so Jaymie’s lectures were also interesting. Andrew Mosi’s talk on the “Chemistry of food” was informative”.

Mike on the “Tree top adventures” at Capilano.



Mike and a grizzly bear on Grouse Mountain.



“I first got interested in Science from watching Carl Sagan’s “Cosmos” series on PBC was back in 1980. With Science 101 I got to hear scientists talk about evolution, biology, etc. and learned where to find out more”. Science 101 “is an opportunity to add a new learning experience to your regular routine. It costs nothing but a little of your time”.

“I had been wondering about doing Writing 101 and Humanities 101. Just having access to facilities at UBC and learning things has made me decide to apply for Writing 101 in August”.

To his classmates Mike says, “Good bye and good luck. See you in Humanities 101 or Writing 101”.

Wilson Liang

Wilson had lots to say about Science 101. “The lectures are interesting and inspiring. I liked all the field trips. [I thought] TRIUMF and the Space Centre were the best among the trips. Interactive study is a great experience”.

“I have had broad interests in Science since childhood”. Since taking Science 101 Neuroscience became the topic I found most interesting and engaging. “I would like to learn more about brain damage and the regaining of function” after injury.

Wilson at the Space Centre.



Wilson eating the ice cream he made in the Pharmaceuticals lab.

“Science 101 covers a variety of topics in Science, from tiny microbes to the infinite universe from abstract Mathematics to applied Science in our daily lives. By putting all these topics and knowledge together I’m inspired to gain a better understanding of our world. For example, I gained a better understanding of the human body by learning about Genetics, Microbiology, and Evolution”.

“Science 101 has helped me refresh and update my knowledge in lots of topics. I found the learning process uplifting in spirit. Science 101 trained my skills in critical thinking, interactive learning, and communication”. “I would recommend Science 101 to everyone that I know because this program has the potential to changes lives!”

Robert Makela

The topic Robert found most engaging was Mathematics. “I have always loved Math”. So, not surprisingly, his favorite lecture was “Infinity and beyond”.

The program was “a very good refresher of information I learned 20 years ago”. It helped build my “thirst for knowledge and learning”. It was “fun, empowering, and freeing”.



Robert making hand cream in the Pharmaceuticals lab.



Dr. Andrew Mosi making ice cream with liquid nitrogen.

Roberts wishes he “could do [the program] again and not miss a single class or field trip – especially [the trips] to Capilano and the Space Centre”.

Darryl Manuel

One of Darryl's most memorable experiences was seeing the particle accelerator at TRIUMF. "I really liked Biology, Astronomy, and Chemistry. Looking at microbes under a microscope was fascinating. Seeing the solar system at the Planetarium was fun. So was making hand cream".



Darryl at the Space Centre.



Darryl at the Vancouver Aquarium.

Science 101 "made me re-question the world and what is on the world. Also, it made me think about where our world is". "Science 101 made think about things I had not thought about in a long time".

"I really appreciated the staff and volunteers for making Science 101 enjoyable".

To his classmates Darryl says, "Thanks for making my Science 101 experience enjoyable. I made some new friends and found everyone respectful".

Richard McDonald

Richard found all the lectures great and the field trips were “awesome”. “I really thought all the lectures were engaging. Whether the lecture was in a lab or in a classroom the professors did an excellent job answering questions”.

“Science 101 has helped me become more familiar with UBC campus and all its Science programs giving me more focus for what type of degree I would like”. “Science 101 is a great tool to discover if you are interested in a branch of Science or all Sciences”. “Science 101 ended too quickly. When does Science 201 start?”



Richard on the skywalk at Capilano.



Marcus and Richard on the skywalk at Capilano.

To his classmates Richard says, “Good luck to all my fellow Science 101 graduates. I hope your future is bright!”

Lorraine Nepitabo

“My most memorable experience in Science 101 was when we went on the field trip to Capilano Suspension Bridge. I learned about the Douglas Fir, Western Hemlock, and Red Cedar trees. I learnt about slugs and the nurse log” – a topic she further explored in her final project. Through her research Lorraine learned “nurse logs are fallen trees that lay on the floor of a forest. [Nurse logs] offer nutrients to seedlings that take root on the surface of the log. The seedlings grow to mature trees with their roots spreading out over the decaying log”.

Lorraine at VanDusen Botanical Gardens.



Lorraine touching a moon rock at the Space Centre.

Lorraine found Botany to be the most engaging topic. “I liked looking at various bugs, plants, and seeds under the microscope. I want to continue taking Biology in the fall. I realized I liked being in a lab”.

“Science 101 is so amazing. I learned to think outside the box. I never thought the galaxy would be so huge. It’s beyond the scope of my imagination”.

Mari Numminen

Science 101 contributed to Mari's understanding of the world. As a result of the program Mari says "I am very much more in tune with my own curiosity". The topics she found most engaging were the Solar System and Viscosity and Mathematics.



Mari at TRIUMF.

"Thank you! [Science 101] is a most rewarding program, also, the most fun. I would like to take Science 101 again in 4 to 5 years. I will have my academic grade 12 by then. Meanwhile I will continue to learn and glean more about the topic Science".

To her classmates, Mari says, "be happy and observe".



Mari and the grizzly bears at Grouse Mountain.

David Richards

David's most memorable Science 101 experiences were learning about the biodiversity of fish and the Ocean Super Earths in Astrophysics.

"Science 101 is a wonderful collection of speakers with, at times, mind boggling information".

"I would like to thanks the coordinators, Leigh and Lisa, they embody academic excellence, leadership, and professionalism".



Mari, Stephen, and David in lecture.



The class at the Museum of Anthropology.

Christina Lai May Tsang

My most memorable experience with Science 101 was “being on Grouse Mountain surrounded by clouds”. I learned something from every activity in the program. The lectures and tutorials increased my knowledge. The field trips “created a positive impact on my life”.

Christina and Grace in the gondola going up Grouse Mountain.



Christina at Capilano.

“The program gave me the opportunity to learn. It has been one of the most rewarding experiences of my life. This class has revived my scientific understanding”. “I have learned that no one is ever too old to learn”.

To her classmates Christina says, “It’s been wonderful to have had the chance to get to know each and every one of you. Keep learning”.

Anne Young

“Because my family was very poor I never had the chance to go to university. So taking part in Science 101, I feel I’m the luckiest person in the world! I’ve always loved learning. This has been a wonderful opportunity for me, though at times I couldn’t imagine, nor wrap my head around, some Science. For example, when I look at and pinch myself – skin, bones, flesh, “DNA”, these whirly stringy things make up me?! This entire experience has me awed and humbled. I’m sorry it’s ending.

My favorite field trip was Grouse Mountain with so many events teaching us how to survive. The most engaging topics, although they all were, was of course Astrophysics since my brother is a high energy Physicist, it gives me personal interest in this. For me it’s been great fun to enter unknown worlds that I scarcely know much about. Certainly learning every subject has been fascinating since everything is connected in symbiotic relationships.

Thank you everyone! Leigh and Lisa; all the amazing professors guiding us through proofs and truths; Phyllis and Kathleen for supplying us with “stay-awake coffee” and goodies; and Chad, Vinita, Kathleen, Elena, and Alex. It’s been a knowledgeable and fascinating journey into our planet, stars, and the dynamics that’s us. The world is so full of a number of things, learning I’m wide eyed and happy as a king – er – I mean queen”.



Anne eating ice cream in the Pharmaceuticals lab.



Wilson, Anne, and Christine at TRIUMF.

Alumni mentors

Kathleen Still

“I graduated from Science 101 in August 2011. I felt privileged to return to the program in 2012. I was invited to assist Leigh and Lisa, the program coordinators. I truly enjoyed the experience. I really learned what commitment means. The course curriculum was a new dimension in meaning for me this year.

The classes that really stood out for me are as follows: Dr. Julian Davies lecture on "Antibiotic resistance", Dr. Shona Ellis' lecture on the "The sex life of plants", and Mona Kwong's "Pharmaceuticals: Labs 1 & 2". Their classes were completely engaging and focused on awareness of our everyday lives and the environment around us. Dr. Julian Davies is truly remarkable for his knowledge and life experience. I have yet to meet an instructor who could match his wit or be able to take command of a class with the tone of their voice”.



Kathleen and Debbie with the giant whale at the Beaty Biodiversity Museum.

Alumni mentors

Phyllis Lester

Phyllis was a Science 101 student in 2011 and returned this year as an Alumni mentor. We were very grateful for the help from both our Alumni mentors.



Phyllis, Grace, and Christina
and the Nitobe Gardens.

Phyllis' most memorable Science 101 experiences were the walk through Camosun Bog with Shona Ellis, the walk through the VanDusen gardens, and the trip to the Capilano Suspension bridge.

To her classmates Phyllis says, "good luck with your next endeavours".

The volunteers

A message from Elena

“Somewhere, something incredible is waiting to be known”.

Dr. Carl Sagan

I am very grateful to have shared this experience with you. It has been a pleasure getting to know you over the summer. Your stories and astute comments have made me think, laugh and have enriched my life. Thank you! Your in-depth questions, as well as interest and enthusiasm for the many different scientific areas covered during the course are impressive and inspiring. I truly hope you have enjoyed the program as much as I have. I wish you the best success and hope that you keep asking questions and stay curious. Congratulations!

A message from Alex

"Every great advance in science has issued from a new audacity of imagination."

John Dewey

Indeed, the amount of imagination, enthusiasm and desire to learn shown by everyone astounds me. Your insightful questions and conversations are among my most memorable moments of Science 101, and I sincerely hope you carry that drive to learn wherever you go from here.

A message from Vinita

Congratulations on all your accomplishments throughout the summer and for successfully completing the program! You should all be proud of the amount of knowledge you have acquired over the past four months. I hope that you continue to question your surroundings and explore science in your everyday lives. I've had a lovely time getting to know each one of you and hope to see you around.

A message from Chad

Science is often described as the pursuit to understand our natural world. I hope that Science 101 has given you the insight to better understand your own environment, and that you continue to challenge yourselves to investigate the things you don't.

Graduation invitation



Class of '12

You are cordially invited to an evening of celebration in honor of the graduation of the

Science 101 class of 2012

Thursday August 9, 2012

Food and refreshments from 4:30pm

Ceremony at 5:30pm

Project display from 4:30 to 5:30 and 6:30 to 7:30pm

Michael Smith Building, room 101

2185 East Mall

University of British Columbia

Please RSVP to science101@science.ubc.ca

by Tuesday July 31, 2012

Graduation program

Science 101 class of 2012 Graduation ceremony

Thursday August 9, 2012 at 5:30pm
Michael Smith Building, UBC campus

Opening remarks by Leigh Hobbs, Program coordinator

Guest speaker Mona Kwong

Certificate presentation to the graduating class:

Jacky Boyle, Charlene Bozoian, Grace Chen,
Debra Finlay, Stephen Jiggins, Lorna Johnson,
Mike Kirk, Wilson Liang, Robert Makela,
Darryl Manuel, Richard McDonald, Lorraine Nepitabo,
Mari Numminen, Marcus Ogilvie, David Richards,
Vasilea Timis, Christina Tsang, Anne Young

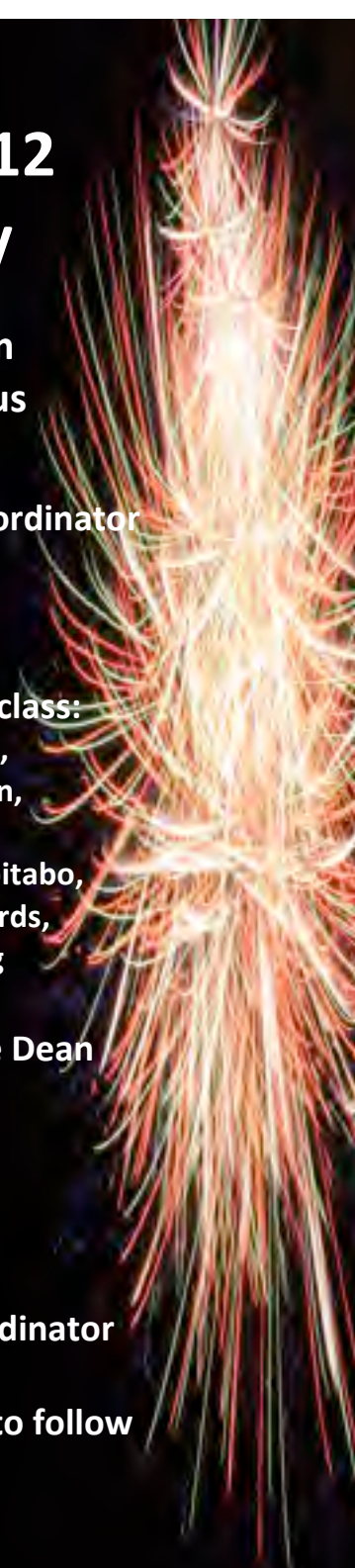
Address from Dr. Rob DeWreede, Associate Dean

Open mic for graduating students

Guest speaker Dr. Jaymie Matthews

Closing remarks by Lisa Wong, Program coordinator

Project presentation, food and refreshments to follow



Congratulations to the class of **2012!**



Acknowledgments

We are thankful to those that helped make the Science 101 Program possible.

Dean's Office, Faculty of Science, University of British Columbia

Dr. Simon Peacock, Dean of Science

Dr. Ian Cavers, Associate Dean of Curriculum and Learning

Dr. Dr. Rob DeWreede, Associate Dean

Nancy Cook, Teaching and Curriculum Coordinator

Program coordinators

Leigh Hobbs & Lisa Wong

Lecturers

Dr. Anthony Griffiths, Dr. Chris Waltham, Dr. Eugene Barsky, Dr. Jaymie Matthews, Dr. Chris Addison, Dr. James Charbonneau, Dr. Jim Rupert, Dr. Andrew Mosi, Dr. Shona Ellis, Dr. Chris Ambrose, Dr. Peter Raven, Dr. Julie Robillard, Dr. Peter Newbury, Dr. Alan DeBono, Dr. Julian Davis, Mona Kwong, Baillie Redfern, Dr. Kimberly Voll, Dr. Hugh Brock, Dr. Matt Ramer, Dr. Leanne Ramer, Dr. Kurt Grimm, Dr. Tara Ivanochoko, Dr. George Homsy, Dr. Fok-Sheung Leung

Tutorial presenters

Jenn Burt, Leah Lim, Kimberly Rawes, Lisa Wong, Leigh Hobbs

Volunteers

Elena Zaikova, Chad Atkins, Vinita Banthia, Alex Dotto, Kathleen Pogorzelec

Science 101 Alumni Mentors

Kathleen Still & Phyllis Lester

Field trips

H.R. MacMillan Space Centre, The Vancouver Trolley Company, Beaty Biodiversity Museum, TRIUMF, Nitobe Memorial Gardens, Vancouver Aquarium, VanDusen Botanical Gardens, Capilano Suspension Bridge, Museum of Anthropology, Grouse Mountain

Thank you to Dr. Rob DeWreede, Mona Kwong, and Dr. Jaymie Matthews for speaking at the graduation ceremony

The UBC Learning Exchange

Margot Leigh Butler & Paul Woodhouse from Humanities 101

**Faculty of Science
University of British Columbia
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