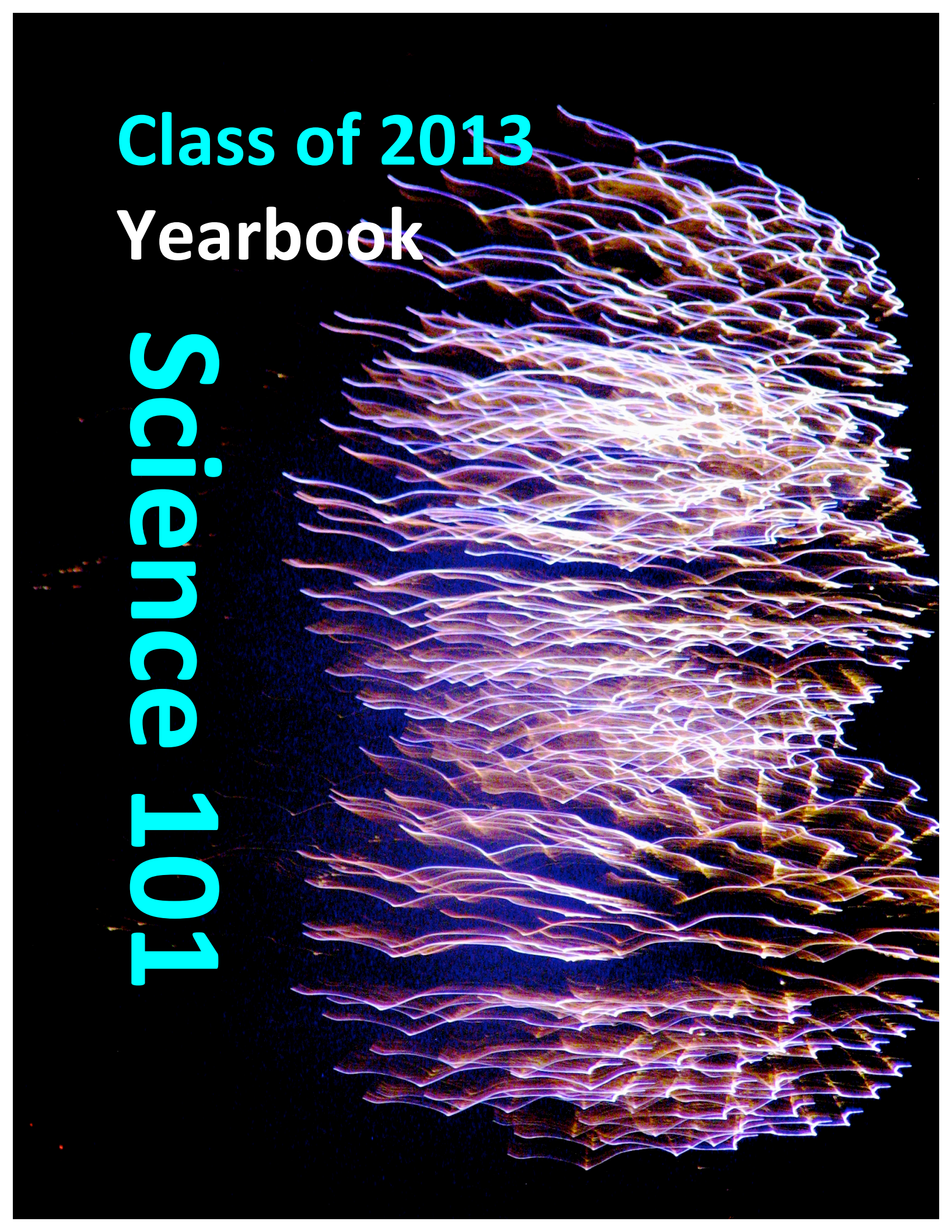
Class of 2013
Yearbook

Science 101



Science 101

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

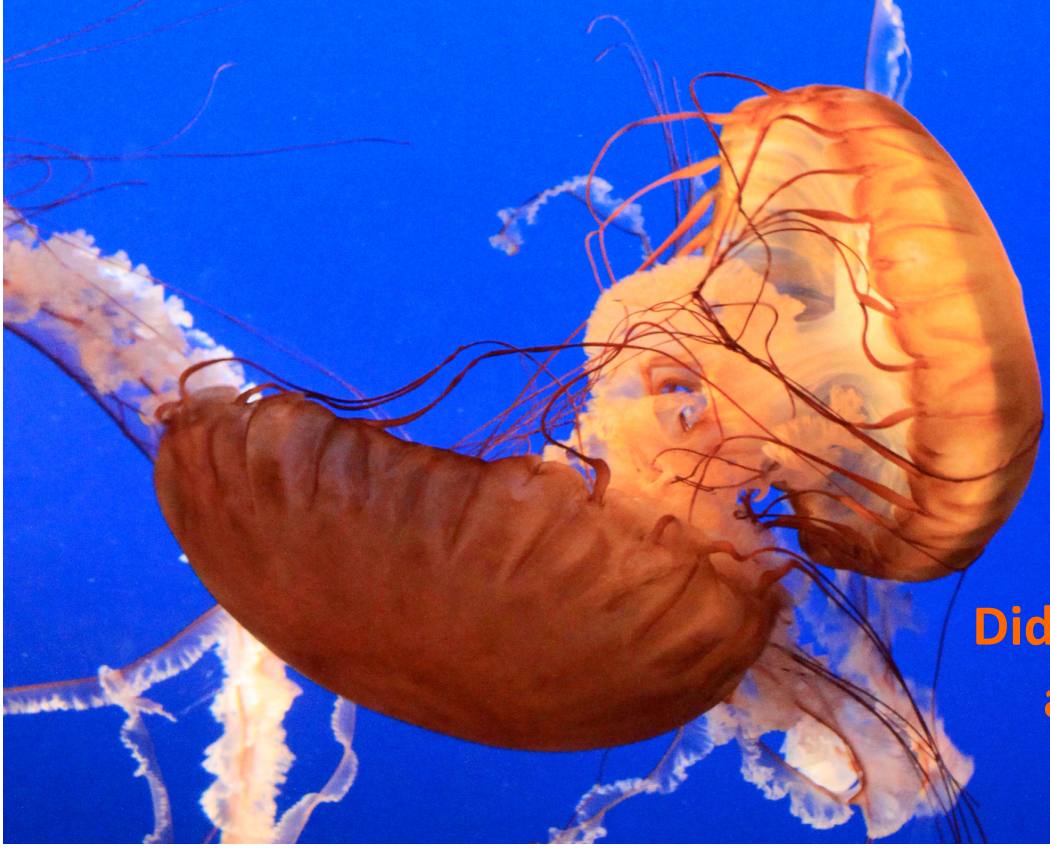
There are no fees associated with the course and no pre-requisite knowledge is required. No university credit is given upon completion. The program is sponsored by the University of British Columbia Faculty of Science Dean's Office and private donations.

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 graduate 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 competed 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 jellyfish are a low fat meal?

A message from Dr. Simon Peacock, Dean of Science

Dear graduates:

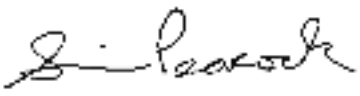
On behalf of the Faculty of Science, congratulations on your graduation from Science 101!

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 you 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 a cocoon is spun of silk?

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. Thank you to Nancy and Dr. Cavers for their support. Without you, the Science 101 program would never have got off the ground. Thank you to Elena, Kathleen, and the volunteers for your hard work and dedication.

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 fourth 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?

A message from Elena Zaikova, Program Coordinator

Dear Graduates,

Congratulations on successfully completing the Science 101 program!

I am honoured and grateful to have been part of your summer and shared in this special journey. I have learned along with you, both inside and outside the classroom, as well as from you. Your enthusiasm, curiosity and willingness to share are inspiring and have made me think, laugh, and have enriched my life. I truly hope that this program has given you the confidence and encouragement to pursue further education or other endeavors you may have considered.

Science 101 is such a fantastic and important program and is the most rewarding experience in my development as a young scientist. Not only is it amazing to see you, the students, be so inquisitive and excited about Science, it is moving to see dedicated lecturers volunteer their time and expertise to help make this program a success! The obvious passion that the lecturers have for their specific topics, as well as Science and education, is infectious and makes for some stimulating discussions in class.

Science 101 is possible only due to the continued support from Dr. Cavers and Nancy. Thank you! I would like to thank Leigh for helping me transition from volunteer to Program Coordinator. Your support, advice and experience have been invaluable. Thank you to Kathleen for your help throughout the course. I would also like to thank the wonderful group of volunteers who have, I am sure, enhanced the students' experience in the program.

I wish you the best success and hope that you keep asking questions and stay curious.

Sincerely,

Elena

Did you know the first microscope invented was optical?

A message from Kathleen Pogorzelec, Assistant Program Coordinator

Dear Graduates,

I'm delighted to congratulate you on your successful completion of the Science 101 program. For me, our time together has been very memorable. I've enjoyed the opportunity to get to know you on a personal level. I appreciate all of the jokes and the life stories you shared with me throughout the program. You never failed to put a smile on my face!

There was never a dull moment during lectures or on the field trips because of all your thoughtful comments and challenging questions. I found your eagerness to learn the various science topics admirable. It helped me put things in perspective since I can sometimes get too focused on grades. So I would like to thank each and every one of you for reminding me how rewarding learning can truly be.

I'm honoured and proud to have been involved with Science 101 for a second year in a row. Leigh and Elena, it was invaluable working with you both and I greatly appreciate all of your advice, guidance and support throughout the term.

In closing, I'd like to wish all of you the best of luck with your future endeavours. I hope to see you around campus.

Cheers,

Kathleen

Did you know an eagle's vision is 3.6 times better than a human's?

Program schedule

May

Monday	Tuesday **Lecture 6 to 8:30pm** **UBC campus**	Wednesday **Tutorial 3 to 4:45pm** **UBC Learning Exchange**	Thursday **Lecture 6 to 8:30pm** **UBC campus**	Friday
6 Orientation Day	7 Dr. Anthony Griffiths The Nature of Science	8 No tutorial	9 Dr. Chris Waltham The Acoustics of String Instruments	10
13	14 Christine Yang Introduction to Genetics	15 Teri Grant, UBC Student Development Tips on asking questions and talking to professors	16 Dr. Shona Ellis The sex life of plants	17 Field trip to Camosun bog with Dr. Shona Ellis (10 am to ~3pm)
20	21 Dr. Julie Robillard Memories are made of this: The brain and the Science of remembering	22 Field trip to Beaty Biodiversity Museum (~2 to 3pm)	23 Field trip to Anechoic chamber with Dr. Chris Waltham (4 to 5pm) Dr. Mona Kwong Introduction to Pharmaceutics: Lab I	24
27	28 Dr. Jim Rupert Evolution	29 Teri Grant, UBC Student Development Note-taking skills	30 Dr. Jane Buxton Scientific Basis for Epidemiological Thinking	31

June

Monday	Tuesday **Lecture 6 to 8:30pm** **UBC campus**	Wednesday **Tutorial 3 to 4:45pm** **UBC Learning Exchange**	Thursday **Lecture 6 to 8:30pm** **UBC campus**	Friday
3	4 Dr. Fok-Shuen Leung Infinity and Beyond	5 Erin Green, UBC Student Development Time Management skills	6 Dr. Tara Ivanochko Climate Basics	7
10	11 Dr. Peter Raven Biodiversity of Fish	12 Computer Skills Workshop	13 Dr. Chris Addison and Dr. James Charbonneau The Dual Nature of Light	14 Field trip to the Vancouver Aquarium with Dr. Peter Raven (10 am to ~12pm)
17	18 Dr. Jim Little and Dr. Junaed Sattar Robotics	19 Computer Skills Workshop	20 Field trip to TRIUMF	21
24	25 Dr. Julien Davies Antibiotic Resistance	26 Kimberly Rawes, UBC Career Services How to write a Bursary Application	27 Dr. George Homsey Newton's Laws of Motion and Fluid Mechanics	28 Field trip to Capilano Suspension Bridge (8:45am to ~12pm)

July

Monday	Tuesday **Lecture 6 to 8:30pm** **UBC campus**	Wednesday **Tutorial 3 to 4:45pm** **UBC Learning Exchange**	Thursday **Lecture 6 to 8:30pm** **UBC campus**	Friday
1 Mid-term break	2 Mid-term break	3 Mid-term break	4 Mid-term break	5 Mid-term break
8	9 Dr. Jaymie Matthews Astronomy Part I	10 Chris Oatman, UBC Science Advising Thing to consider in pursing further post-secondary education	11 Dr. Jaymie Matthews Astronomy Part II **Final project proposal due!**	12
15	16 Dr. Andrew Mosi The Chemistry of Food	17 Open House at the HR MacMillan Space Centre with Dr. Jaymie Matthews	18 Dr. Phil Austin Climate and Weather	19
22	23 Dr. Carol Ann Courneya The Heart	24 Work on final projects	25 Dr. Joanne Fox DNA Isolation **Final project outline due!**	26 Field trip to Grouse Mountain (8:45am to ~1pm)
29	30 Dr. Allan Debono The Cell	31 Work on final projects		

August

Monday	Tuesday **Lecture 6 to 8:30pm** **UBC campus**	Wednesday **Tutorial 3 to 4:45pm** **UBC Learning Exchange**	Thursday **Lecture 6 to 8:30pm** **UBC campus**	Friday
			1 Dr. Mona Kwong Introduction to Pharmaceutics: Lab II	2
5	6 Dr. Chris Ambrose How to Clone a Gene	7 Work on final projects	8 Graduation ceremony and final project display!	9

Lecture descriptions

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 convince others) that we truly do understand.

Christine Yang, "Introduction to Genetics"

Genetics is often associated with the word "fate" because it plays an important role in determining who we are. Does our DNA really dictate all? We discussed the inheritance of DNA, its molecular properties, and mutations.

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.

Dr. Julie Robillard, "Memories are made of this: The brain and the Science of remembering"

Students learned about common myths about the brain, the basics of brain anatomy and function, and the different methods researchers use to study the brain. Memory, factors that affect memory, and false memories were also discussed.

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. This class introduced Charles Darwin's theory of the evolution of species through natural selection, from Darwin's first insights while watching birds on the Galapagos Islands to the modern synthesis of evolutionary theory and molecular genetics.

Dr. Fok-Shuen Leung, "Infinity and Beyond"

The concept of infinity is one that has affected mathematics and our understanding of the world in interesting and unexpected ways. In this session, students discussed how the concept shows up in Science, as well as in snowflakes, flights of arrows, and magical hotels.

Dr. Peter Raven, "The Biodiversity of Fish"
Water covers 70.8% of the Earth's surface including trenches nearly 10 km deep and submerged mountain chains. Fish have adapted to every aspect of these environments in fantastic and elaborate ways. From fish that can live on land to others that can create electricity, and everything in between, this talk highlighted the fascinating variety of fish.

Dr. Chris Addison & Dr. James Charbonneau, "The Dual Nature of Light"
Light is commonly described as being both a particle and a wave, but in reality it's neither a particle or a wave. These two descriptions are constantly duelling each other, the winner being decided by what type of experiment we perform.

Dr. Jim Little and Dr. Junaed Sattar, "Robotics"
The science of Robotics is very much on the rise, as testified by the increasing presence of smart machines and devices across many application domains. This lecture introduced basics of how robotic systems sense the world, make intelligent decisions and act based on those decisions.

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. However, this has not happened and more and more antibiotics are becoming ineffective due to the development of antibiotic resistant strains. There is a great need for newer and more potent antibiotics but what has happened to research? What alternatives do we have to antibiotics?

Dr. Chris Ambrose, "How to Clone a Gene"
News headlines are filled with reports of scientists "finding genes". What exactly are genes? How do scientists go about actually "finding" them? In this lecture students learned not only the "how" but also the "why" of gene hunting.

Dr. Andrew Mosi, "The Chemistry of Food"
Food is an incredible complex mixture of chemical substances. We often eat to satisfy hunger or obtain certain flavor sensations, without giving too much thought to the nutritional content of the food. As consumers we are often overwhelmed with information about what is "good" or "bad". This lecture discussed some important issues related to the chemistry of food, with respect to what we need, what we should eat (what is good for us), what to avoid (what is harmful), flavor and nutrition.

Dr. Jaymie Matthews, “Astronomy: Part I”
No human being has ever been beyond the Moon, about 400,000 km from Earth. Space probes have only ventured slightly beyond the orbits of the known planets. But the Universe is incredibly vaster than that. How vast? And how do we know how vast? We also have mapped the sky in the form of constellations. Do they have real meaning? And do they have the same meaning for everyone on Earth? When we see the stars in the sky at night, we are using our eyes, which are wonderful organic cameras and sensors. But the human eye sees only a tiny slice of the full electromagnetic spectrum. What happens if we look at the Universe with "new eyes", at other wavelengths that are normally invisible to us? It turns out that we can learn a lot about other planets and other stars, including our own planet, the Earth, and our own star, the Sun.

Dr. Jaymie Matthews, “Astronomy: Part II”
Pandora, the home planet of the Na'vi in the movie Avatar, has captured the imaginations of people living all over our home planet. What is currently science fiction and fantasy on movie screens is rapidly becoming science fact, and the reality makes the fantasy seem almost routine. How do you find a planet around another star? How many have we found so far, and what have astronomers learned about these new "exoplanets". Canada's space telescope, MOST, is a pioneer in exoplanetary science and in 'listening to the music of the stars'. What has it discovered and what can we expect in the near future? Can any of these worlds support life as we know it?

Dr. Tara Ivanochko, “Climate Basics”
This class covered the basics of the Earth's radiation balance and the role greenhouse gases in the atmosphere. Students also briefly looked at natural variability in climate and the contribution of human activity to global warming.

Dr. Mona Kwong, “Introduction to Pharmaceutics: Lab”
Students gained an appreciation of some areas where pharmaceutics can be applied, learend about emulsions, identify some problems encountered in making emulsions, and made an emulsion in the form of a hand cream!

Open House at the Space Centre

H.R. MacMillan Space Centre Open House

Wednesday July 17, 2013
5:45 to 8:15pm

Did you know the Sun is 150 million km from the Earth?

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

Free of charge

See a planetarium show
Touch a Moon rock
Learn about space
Visit the Cosmic Courtyard exhibit

Free transportation to & from the Space Centre
Pick up locations and times are:
Cordova and Gore at 5:15
Commercial and Grant (Grant street at East loading bay) at 5:15

Free food and drink

Event sponsored by the H. R. MacMillian 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?

Final Projects

“Orcas” by Charlene Bozoian
The topic of Charlene’s final project was “Orcas” or “Killer whales”. She chose to describe their anatomy, life, and biology.

“The Hubble Space Telescope” by Violet Bittern
Violet was curious what telescopes were used for and what fascinating wonders are found in space. So, for her final project she decided to learn more about the Hubble Space Telescope.

“Stars” by Derek Brownbridge
For his project Derek chose to focus on stars and the scientists who discovered them.

“Robotics” by Teresa Cloud
Teresa discovered how robotics began and how robots are used today.

“The neuroscience of love” by Joshua Florence
Joshua learned bout hormones, neurobiology, and the chemistry of love.

“The Higgs-Bozon” by Roxanne Galpin
Roxanne wanted to learn about particle physics, so for her final project focused on the Higgs-Bozon field and particle discovered in 2012 with particle smashing experiments.

“The ear” by Gerald Hempler
For his project Gerald learned how our ears amplify sound and allow us to hear. He also researched how the hearing can be damaged and what can be done to protect hearing.

“The brain” by Husen (Yvonne) Huang
Yvonne chose to study the brain. She learned how a healthy diet, regular exercise, meditation, yoga, walking, and taking omega-3 supplements help this important organ.

“Reproduction of plants” by Dorothy King
Dorothy’s project described the two main ways plants can reproduction, sexual and asexual reproduction. She used the raspberry and strawberry as examples.

“Bees” by Assumpta Kwan
For her final project Assumpta learned about bees and their important roles in pollination and producing honey.

“Hemp applications” by Jerimie Marion
For his project Jerimie learned that hemp is a stronge, more renewable, and less toxic material.

“The neuroscience of stress” Lisa McTaggart
Lisa chose to learn about neuroscience for her project. She researched how stress can affects the mind and body.

“Euler’s formula” by Dmitry Mekinulov
For his project Dmity discussed the properties and significance Euler’s formula, given by the equation $e^{\pi i} + 1 = 0$.

“Plate tectonics” by Kevin Nanaquewitang
Kevin chose to learn about plate tectonics – the theory that the Earth’s crust is divided into plates. He discussed how the plates can shift and cause volcanoes and earthquakes.

“The evolution of humans” by Terri Marie Perrault
For her final project Terri researched human evolution and focused on the discovery of Lucy – one of our oldest ancestor. And guess how old she is!

“The mechanism of Tylenol” by Khady Tall
Like all medicines, acetaminophen had a history before reaching the market. Khady’s project discussed the side effects of acetaminophen, a drug used to alleviate mild pain.

“Microbes and food” by Margaret Teng
There are harmful and beneficial microbes. Margaret’s project discussed how certain microbes and can be used in milk fermentation to produce cheese of various flavours and textures.

“The universe” by Joseph Whelan
For his project Joseph wrote a sonnet about the universe.

“The basics of climate science” by Isaac White
Isaac’s project described the difference between weather and climate, explained the greenhouse effect, described the relative importance of each of the greenhouse gases, explained the difference between incoming and outgoing infrared radiation, and conceptualized the impacts of climate change

“Tick-borne diseases “ by Ni (Jenny) Zhen
For her project Jenny chose to learn more about human diseases that are spread by ticks.

The students

Violet Bittern

Enjoyed learning about Science, no matter what the topics was. “It doesn’t matter what age you are, you can still learn new things!”

The program contributed to Violet’s understanding of the world. “I learned that we are made from star dust, how we evolved as humans, how important science is in our lives and for future generations, how the environmental changes can change life as we know it, and the effects of climate change on ocean life and our health.”

To her classmates, Violet says, it was “always a delight to be with you. I really enjoyed everybody’s spirit and thirst for knowledge.”

Violet crossing the Capilano Suspension Bridge.

Derek Brownbridge

My most memorable experiences in the Science 101 program were making ice cream with Mona Kwong and learning about sea creatures with Dr. Peter Raven, string instruments with Dr. Chris Waltham, infinity with Dr. Fok-Sheun Leung, evolution with Dr. Jim Rupert, and the heart with Dr. Carol Ann Courneya.

Science 101 contibuted to Derek's understanding of the world. He recently took a course at Capilano University, which convered Math, computers, English, and job search skills. He wished that they had included more Science in the program. Science 101 helped fill this gap. Thanks to Science 101 he is starting to grasp some basic elements of how our universe works!

Derek making hand cream during the Pharmaceutics lab with Mona Kwong.

Teresa Cloud

Teresa had a wonderful experience with the Science 101 program. The topics Teresa found more engaging were “Robotics” with Dr. Jim Little and Dr. Junaed Sattar and “the Heart” with Dr. Carol Ann Courneya. “I think robotics help humans in many ways. The heart helped me understand our health.” After taking Science 101 Teresa will “encourage young children to study and enjoy Science in grade school and high school.”

To her classmates Teresa says, “I enjoyed studying with you. I had a wonderful experience and hope to meet again in near future. Good luck and keep your brains working. Bye for now!”.

Teresa and Violet having their ECGs taken during Dr. Carol Ann Courneya’s lecture on “The Heart”.

Teresa also had a joke to share.
What do you call a berry that lies all the time?
Answer: Lieberry

Joshua Florence

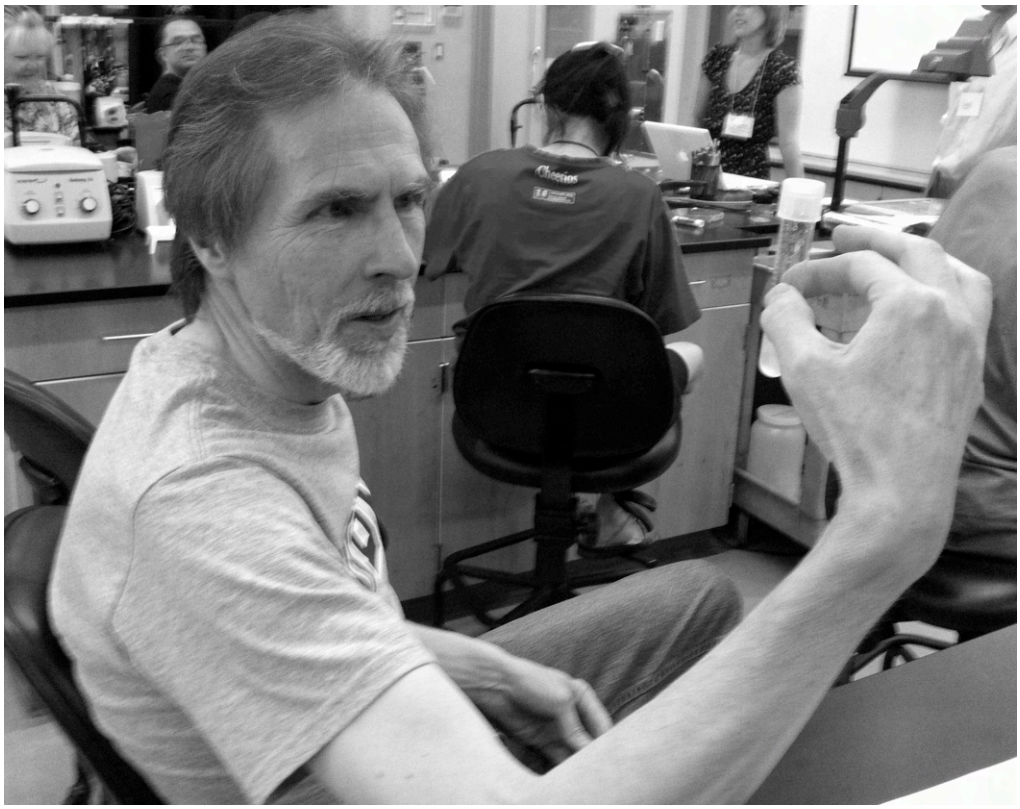
Joshua's most memorable experiences were all the field trips. He found all the lectures engaging and "learned not to under estimate anybody".

Joshua would most definitely recommend the Science 101 program to others. There is "no other program that I have been involved with where I have met so many truly fascinating people, and learned about things that are so interesting and in such a stimulating environment. Plus they take such great care of us." The program is "truly barrier free". "All that's needed is a desire to experience it."

Joshua at the Vancouver aquarium.

Gerald Hempler

Enjoyed everyone in the class.



Gerald holding the DNA he isolated from his cheek cells during Joanne Fox's lab activity.

Husen (Yvonne) Huang

Yvonne's most memorable experiences were making ice cream – out of ice and liquid nitrogen! "Mama mia, it was F-a-n-t-a-s-t-i-c!"

Science 101 contributed to Yvonne's understanding of the world. The program "opened not only my eyes, but also opens my mind, my thoughts, and my curiosity to explore this planet before it is too late at the end of my earth journey."

Yvonne crosssing the Capilano Suspension Bridge.

Dorothy King

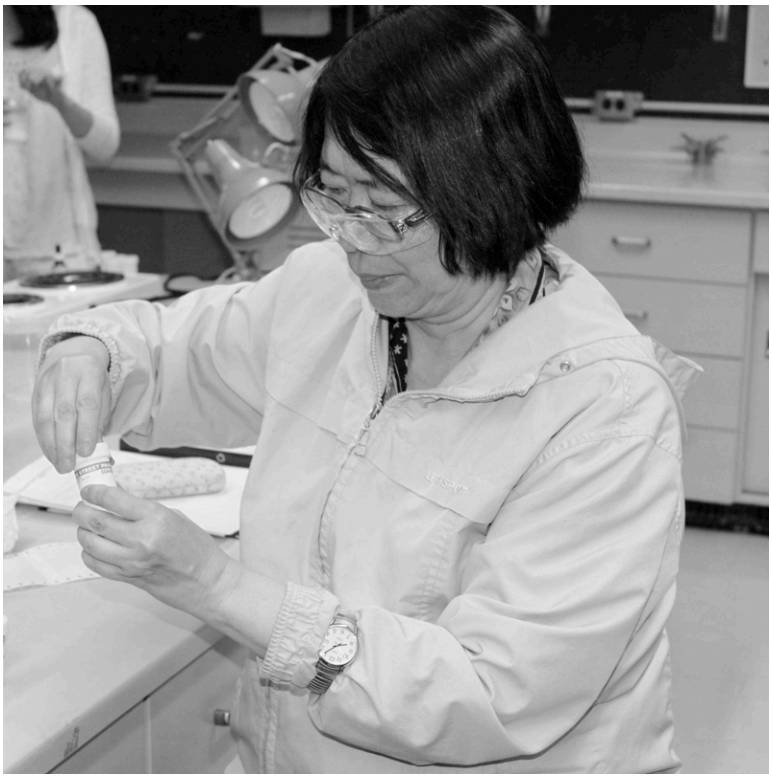
Dorothy's most memorable Science 101 experiences were the lectures on "The sex life of plants" with Dr. Shona Ellis, "The brain" with Dr. Julie Robilland, "The heart" with Dr. Carol Ann Courneya, and "The chemistry of food" with Dr. Andrew Mosi. "I really liked those topics and enjoy them the most, but the other topics in the term were very interesting too."

Dorothy crossing the Capilano Suspensio Bridge.

Science 101 has contributed to Dorothy's understanding of the world. The program has "opened my eyes to the world of the things that I don't even know. It planted a seed in my heart and I will learn more by myself about some of the topics in the future." Dorothy would recommend Science 101 since "it is just a wonderful opportunity to learn many interesting things."

Assumpta Kwan

“My gratitude is similar to a blissful breeze that revives the soul and revitalizes the body. I am a dove holding an olive branch. I followed professors on different excursions about topics such as astronomy, chemistry, physiology, botany and biology. I must admit that time flies. Even before I realized that I was enjoying the course, it finished abruptly. I am most grateful that I have known so many people. Take care and God Bless!”



Assumpta making hand cream during Mona Kowng’s Pharmaceutics lab.

Jerimie Marion

“I would like to thank my fellow classmates for their interesting and engaging questions. Your knowledge and passion for continuing education really made the experience wonderful and enjoyable. While there are still a few classes left, I found “Astronomy” the most exciting. It opened a desire deep within that had been dormant since my high school years. I have always had a love for nature and a wonder of the stars. Now as an adult that tiny spark of interest has become a flame of desire to understand more about our universe and it's complexity.

I cannot count the different ways Science 101 has touched my heart and mind. It has definitely encouraged me to explore more and expel some false ideas I had carried with me for many years. The most memorable moment, and their were plenty of them, I would have to say was when my classmate Kevin was brave enough to lick a slug while on our tour of the Capilano Suspension Bridge. We all had good times, laughter and new friendships were made.

The concept of offering barrier-free university education is a noble cause because education is key to solving almost all of the world's social, environmental, and possibly even political problems. The lectures on topics ranging from climate and weather, to astronomy, to chemistry of food, and biology, and the heart (our most important muscle) has allowed us to explore these ideas and ask questions.

I learned alot from my classmates. There are so many amazing people that are searching for meaning in this world and if they could experience Science 101 I know it could start a revolution inside their minds and hearts. I have felt this first hand and I am very grateful for the experience I would like to thank the co-ordinators, the volunteers, and professors for donating their time and energy for this cause. I look forward to the graduation ceremony and discussing the topic of my project (hemp as a sustainable material) in more detail. The future of the planet depends on us and our informed decisions. Think about how much the planet has done for us, now we owe it to her. May the force be with you.”

Jerimie making hand cream during Mona Kwong’s Pharmaceutics lab.

Lisa McTaggart

Lisa's most memorable experiences were the DNA isolation and pharmaceutics labs and the field trip to Grouse Mountain. Lisa is interested in "how the body and brain work and possibilities of curing both physical and mental illness " so found the lectures on "Neuroscience" with Dr. Julie Robillard, "DNA isolation" with Dr. Joanne Fox, and "Pharmaceutics" with Mona Kwong most engaging.

Lisa with a grizzly bear on Grouse Mountain.

As a result of taking the program Lisa feels she "definitely has a broader understanding of the world." "It's a great starter experience for someone to explore different areas of science." The program "opened my eyes. I found certain topics really interesting and this has helped me narrow down a career path I would like to explore." "I'm grateful I had the opportunity to take this class. I fell more confident now about making choices in the future relating to the topics I learned about."

She enjoyed meeting new people and to her classmates says, "Thanks for the memories ☺. It's been fun. Good luck in your future endeavours."

Dmitry Mekinulov

"The field trip to TRIUMF was definitely the most exciting and memorable experience for me. A once in a lifetime event for sure!"

He found the lectures on "Infinity and Beyond" with Dr. Fok-Sheun Leung, "The Dual nature of light" with Dr. Chris Addison and Dr. James Charbonneau, "The heart" with Dr. Carol Ann Courneya, and "Fluid mechanics" with Dr. George Homsey the most engaging. Those are topics he has always been interested in but never had the opportunity to learn about.

His experience in Science 101 has contributed to his understanding of the world. "The great variety of topics allowed me to access areas I would normally not visit." The program gave him a "unique perspective on science and on learning."

Dmitry would recommend Science 101 to other students since it is a "once in a lifetime opportunity for folks who have not had a chance to attend university."

Dmitry and Dorothy at TRIUMF.

Terri Marie Perrault

“To me Life is like a garden, I seek out ways to water and nurture my Life Garden so I can have a Garden full of wonderful plants and flowers. Science 101 has nurtured and fertilized my Life and has transformed my Garden of Life. Thanks Science 101”.

Terri with a grizzly bear on Grouse Mountain.

Kevin Nanaquewitang

Taking Science 101 contributed to Kevin's understanding of the world. "Dr. Griffith's lecture on Science really helped me get a handle and a better understanding of how science works in the real world. Without that lecture I don't think that I would have been able to sit through the following lectures simply because I would have been asking way too many questions."

Kevin with one of Dr. Peter Raven's fish specimen.
Which do you think is the scariest?

"I quit school in the 10th grade because I didn't like studying and doing homework. I went to school, but that was because all my friends were there and so was my girlfriend, I just loved her. One day the School Board told me that I could quit school and they wouldn't chase me around. I moved to Lake Louise and washed dishes for a living. Looking back, I could have regrets but I don't. I did what I had to do at the time. Quitting school when I did was the best thing for me or I would have gone nuts. Thirty-five years later, I'm ready to engage the brain and finish school. Taking this class has convinced me to pursue higher education. I want to say a big thank you to Leigh, Elena, and the volunteers who kept the wheels greased and rolling for this class to happen. I learned a lot, mostly about myself and I think that all this learning has made me more articulate and a better speller!"

"I had a blast sitting in with all my curious classmates and learning the language of science. You all made it a great time for me. I really enjoyed the lectures, the labs and the field trips. But without you it would have been no fun at all. Peace and love. "

Khady Tall

Khady's most memorable Science 101 experiences were working in the "Pharmaceutics" lab with Mona Kwong and the "DNA isolation" lab with Dr. Joanne Fox.

Science 101 contributed to Khady's understanding of the world. She found answers to her questions about "how the world runs and how things work." Taking the program has also helped Khady in her future pursuits. "It gave me the opportunity to focus on that I want to learn at college." She would recommend the program to anyone that wants to "understand and learn about the world."

To her class mates Khady says, you were friendly and I love you all!

Khady and Issac on the field trip to Camosum bog with Dr. Shona Ellis.

Margaret Teng

Margaret's most memorable experiences with the Science 101 program were the lectures on "Genetics" with Christine Yang, "The brain" with Dr. Julie Robilland, "The Chemistry of food" with Dr. Andrew Mosi, "The heart" with Dr. Carol Ann Courneya, and "Microbes" with Dr . Julien Davies.

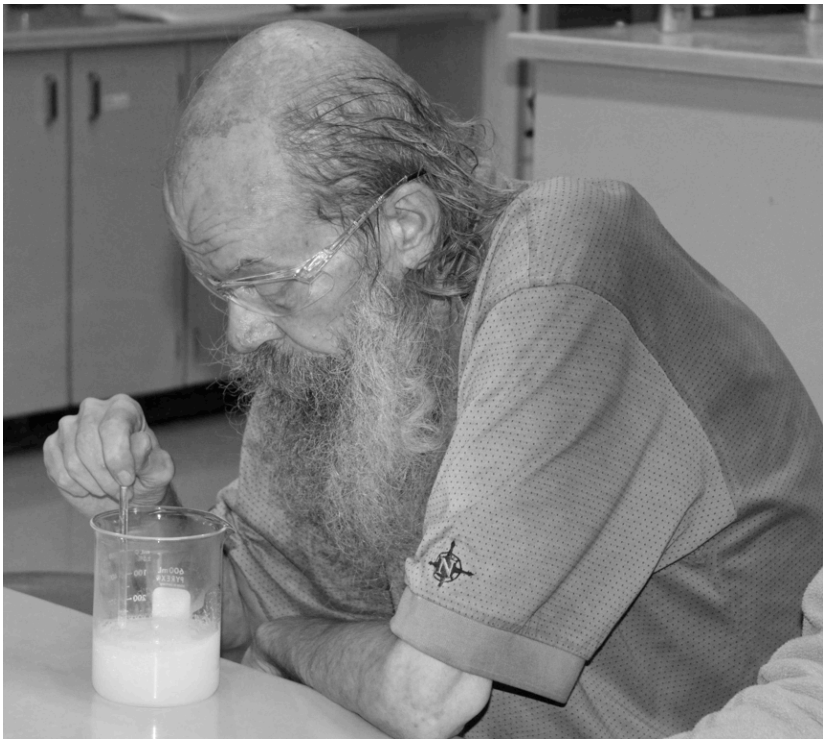
The topics Margaret found most engaing were the lectures on the heart and the brain. "I am getting on in years and so anything I can learn about the brain an heart for maintenance and prevention helps."

To her classmates Margaret says "Best wishes! Go and follow your dreams!"

Joseph Whelan

Joseph enjoyed the Science 101 program. The topics Joseph found most engaging were “Quantum Physics” and “Astronomy” with Dr. Jaymie Matthews. Joseph would recommend Science 101 to others. “You can understand where you came from and where you’re going” and that “there is more to the world” than what you see in the Downtown Eastside.

To his class mates Joseph says, “be young, have fun and drinking pepsi. We’ll meet again in a future life, somewhere over the rainbow.”



Joseph making hand cream during Mona Kwong’s Pharmaceutics lab.

Isaac White

The topics Isaac found most engaging were “Astronomy” with Dr. Jaymie Matthews, “Antibiotic resistance” with Dr. Julien Davies, “The nature of Science” with Dr. Anthony Griffiths, “Climate basics” with Dr. Tara Ivanochko, “DNA isolation” with Dr. Joanne Fox, “The heart” with Dr. Carol Ann Courneya, “The cell” with Dr. Allan Debono, and the field trips.

Isaac at TRIUMF, holding the universe in his hand.

What Isaac found most memorable about Science 101 was that “everyone was **so** willing to share their knowledge.” “In my life as a worker in the logging industry, I had many university students from North America and Europe give me lectures on various topics. Taking Science 101 helped me realize how much these students shared their knowledge. Thank you.” Taking Science 101 also contributed to Isaac’s understanding of the world. Science 101 “confirmed my guess that many aspects of science are being rewritten.”

To his classmates Isaac says, “thank you to for becoming my teachers, with all your insightful and far reaching questions. These questions helped in my understanding of these scientific topics.”

Alumni mentor

Charlene Bozoian

“I would like to thanks Leigh for asking me to mentor. I enjoyed helping with coffee, snacks, etc. The best part was meeting all the other students and the field trips were fun. I hope that Leigh, Elena and Kathleen enjoyed my help. Most of all, to all the other students, I hope you will continue your quest for knowledge and have enjoyed Science 101. Thank you all.”

Charlene on the gondola at Grouse Mountain.

The volunteers

A message from Chad Atkins

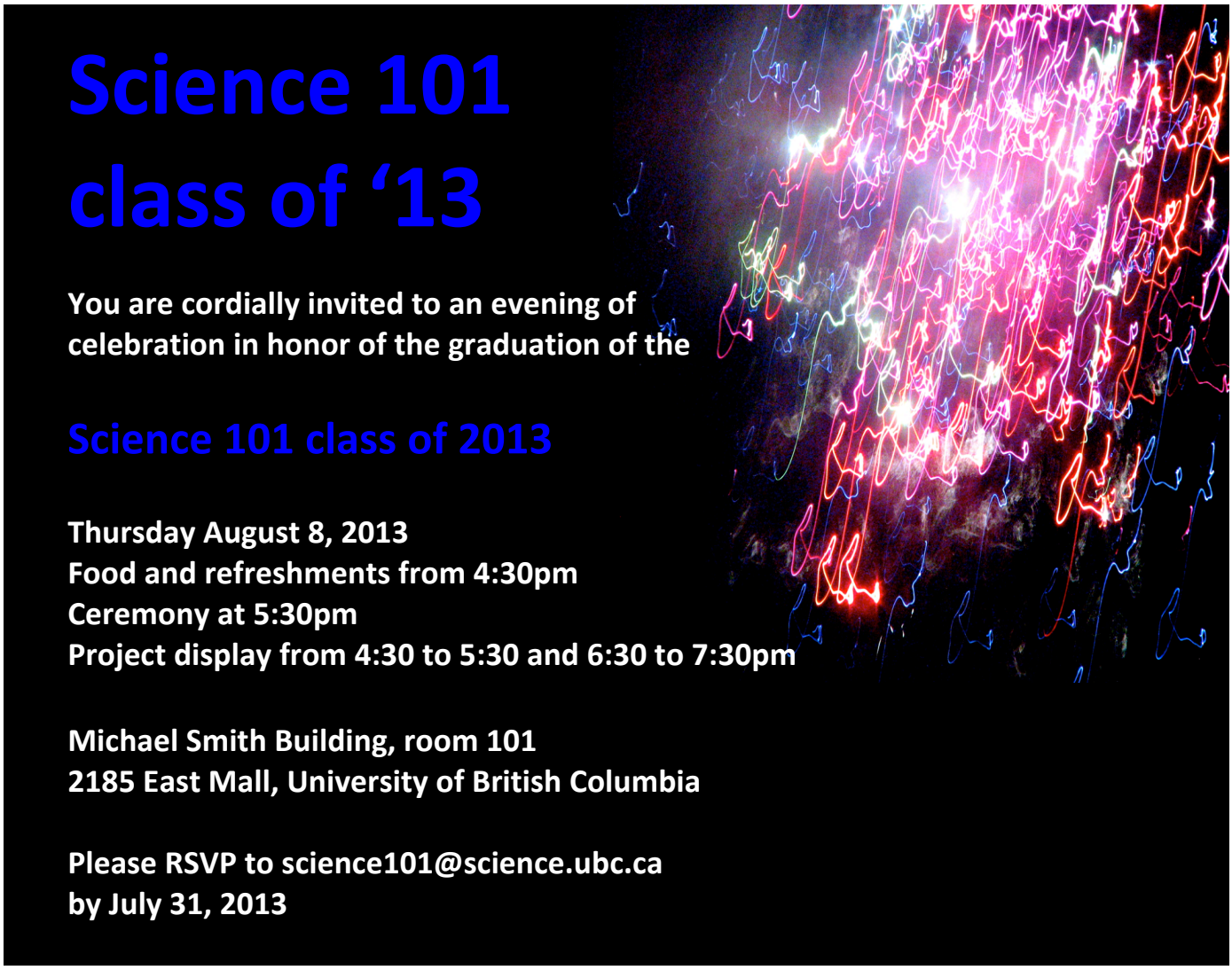
Being a graduate student in science requires dedicating a significant portion of time to furthering knowledge of a very specific topic. Spending time as a volunteer in science 101, however, removes me from the constraints of my own lab and constantly reminds me of the amazing events that happen daily in the real world we share. This process wouldn't be the same without each and every one of you; your personalities and creative questions drive in-class discussions and your persistent curiosity is infectious. With the completion of science 101, I now challenge you to maintain these behaviors outside of class. Thanks for the great summer.

A message from Anthony Nixon

Congratulations this years Science 101 graduates! It was a pleasure getting to know you all over the course of the program and I was inspired by your commitment, enthusiasm, and achievements. You are all great students and amazing individuals. I wish you all the best in the future.

Signatures

Graduation invitation



Graduation program

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Teri Grant, Erin Green, Chris Oatman, Sarah Belanger

Volunteers
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Science 101 Alumni Mentors
Charlene Bozoian

Field trips
The H.R. MacMillan Space Centre, The Vancouver Trolley Company, the Beaty Biodiversity Museum, TRIUMF, the Vancouver Aquarium, Capilano Suspension Bridge, Grouse Mountain

Tutorials & workshops
The UBC Learning Exchange

Humanities & Writing programs
Margot Leigh Butler & Paul Woodhouse

Faculty of Science
University of British Columbia
www.science.ubc.ca/101