

2015 Vancouver Summer Program in Medicine

July 18-August 18, 2015



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THE UNIVERSITY OF BRITISH COLUMBIA

FACULTY OF MEDICINE

Program Overview

The **Vancouver Summer Program (VSP) in Medicine**, offered by the Faculty of Medicine at The University of British Columbia (UBC), is a 4-week academic program, consisting of 2 courses, for undergraduate students from international universities

The VSP provides the opportunity to experience Canadian health and life sciences education at its best, and learn about Canadian culture firsthand, through engaging classes, social activities, and intercultural workshops.



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Program Benefits

Study at a world-renowned medical school and university

Develop skills essential for success in your future career as a healthcare practitioner or researcher

Learn about cutting-edge health research conducted at UBC

Experience Canadian society, culture and education style

Explore beautiful Vancouver and British Columbia

Improve your English skills

Meet students from Canada and around the world



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About Vancouver

Vancouver is located in the southwest corner of British Columbia – **one of Canada's 10** provinces and 3 territories

40 minutes away from the United States border

Population 2.1 million



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About Vancouver

Host to the 2010 Winter Olympics

Consistently rated as one of the best places to live in the world in terms of quality of life, opportunities, cultural diversity, political stability, and a healthy environment

Canada is a safe country with a stable economy, an excellent health care system and social services



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About UBC

Canada's education ranks amongst the
best in the world

UBC is Canada's third largest university
and a leader in research

18 faculties and 13 schools offering a
wide range of study options



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About UBC

58,284 students (Vancouver: 49,896; Okanagan: 8,388)

10,181 international students from 149 countries

12,010 degrees granted in 2013

300,000 alumni in 120 countries

15,171 faculty and staff

\$2 billion annual operating budget

\$564 million per year in research funding for 8,442 projects

158 companies spun off from UBC research

\$12.7 billion in economic impact

7 Nobel prize winners (current or former faculty and alumni)

31st in Times Higher Education world rankings (2013)

<http://news.ubc.ca/media-resources/ubc-facts-and-figures/>



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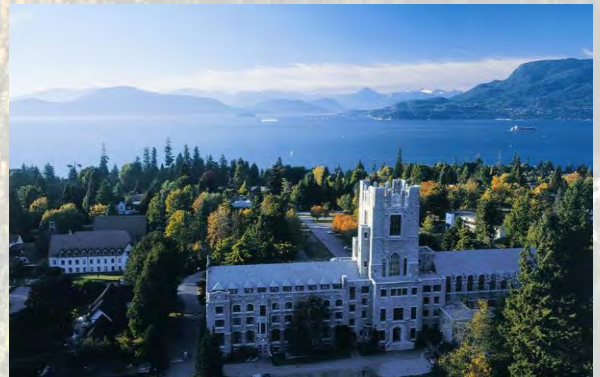
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About UBC

The UBC campus is a 30-minute
bus ride from downtown
Vancouver

The 400+ hectare campus is
surrounded by the Pacific Ocean
with snow-capped mountains in
the distance



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The Faculty of Medicine

Times Higher Education World University Rankings:

32 in Clinical, Pre-Clinical, & Health
20 (#1 in Canada) in Life Sciences

QS World University Rankings:

39 in Medicine
31 in Biological Sciences

Faculty are internationally recognized authorities in HIV/AIDS treatment, genomics, and infectious diseases, and have received prestigious national, and international awards, including the Nobel Prize and the Order of Canada.



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The Faculty of Medicine

1 Medical school in British Columbia with **4** campuses

19 Academic Departments & **2** Schools

21 Research Centres and Institutes

11 Academic Programs

4,533 Learners: 1,255 undergraduate students, 1,606 graduate students, 1,169 postgraduate medical residents, 294 postdoctoral fellows, and 209 clinical fellows

677 Full-time faculty members

6,059 Clinical faculty

13,054 Alumni

\$397 million annually in research funding

49 out of 163 UBC spin-off companies originating in FoM



Academic Overview

Package: 2 courses

Class time: ~39 hours per course
(equivalent to 6 credits)

Classes: interactive, group work,
class discussions, research
projects, laboratory experiments,
visits to research facilities



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Academic Overview

Instruction: directed and taught by UBC faculty members

Evaluation: assignments, group projects, presentations, papers, exams, and participation marks

Course credit: granted at discretion of student's home university (not UBC credit)



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Participants & Program Size

Participants - eligibility:

- Participants are undergraduate students (typically in their first 2 years of study) studying medicine or related sciences (e.g. biology, pharmacy, general sciences).
- Participants must be proficient in English (all classes will be taught in English) and have a strong academic background.



Participants & Program Size

Program size – enrollment:

- Course packages have a minimum and maximum enrollment.
- Course packages that do not meet the minimum number of students will not be offered.
- Students will be informed if their first choice package is full or has been cancelled and will be given the option to transfer to another package.
- Students are advised to register as early as possible to get their first choice of package.



Schedule

Classes are held 4-5 days a week with one day or one afternoon a week free. A typical schedule* is:

- **9:00** – 12:00 morning class
- **12:00** – 13:30 lunch break
- **13:30** – 16:30 afternoon class

Some evening activities are included in the program (e.g. movie nights, sports night).

Weekends are free, with optional sightseeing trips for an additional fee.

**Actual schedule may vary depending on course package.*



Schedule

Sample 2015 VSP Class and Social Schedule									
	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY		
						Jul-18	Jul-19		
						Airport Pickup* Check-in 15:00	Campus Tour		
	Jul-20	Jul-21	Jul-22	Jul-23	Jul-24	Jul-25	Jul-26		
9:00 - 12:00	Orientation and City Tour	Class A	Class A	Class A	Intercultural Communication Class	Whistler Day Trip (optional)	Victoria Day Trip (optional)		
13:30 - 16:30		Class B	Class B	Class B					
Evening		UBC Welcome Dinner			*Granville Island + Market				
	Jul-27	Jul-28	Jul-29	Jul-30	Jul-31	Aug-01	Aug-02		
9:00 - 12:00	Class A	Class A	Class A	Class A		Grouse Mountain (optional)			
13:30 - 16:30	Class B	Class B	Class B	Class B					
Evening		*Vancouver Art Gallery			*Richmond Night Market				
	Aug-03	Aug-04	Aug-05	Aug-06	Aug-07	Aug-08	Aug-09		
9:00 - 12:00	BC Day Statutory Holiday Study Night	Class A	Class A	Class A		Whistler Day Trip (optional)	Victoria Day Trip (optional)		
13:30 - 16:30		Class B	Class B	Class B					
Evening		*Museum of Anthropology	Mini Grad Fair (17:00-19:00)						
	Aug-10	Aug-11	Aug-12	Aug-13	Aug-14	Aug-15	Aug-16	Aug-17	Aug-18
9:00 - 12:00	Class A	Class A	Class A FINAL EXAM	Class B FINAL EXAM					
13:30 - 16:30	Class B	Class B		Farewell Luncheon (12:00-14:00)					
Evening									

Legend
Free
Under \$10
\$50+

*Activities listed are examples only. Actual activities will vary by package.

†Airport pick up and drop off is for groups of 24 or more only. Individuals arriving outside of group flights and regular hours will be expected to make their own way to UBC campus.
Note: Schedules for each of the individual packages will be finalized closer to the program dates.



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Social Activities

City Tour

Various activities such as sporting events, museum visits, bike riding
Sightseeing trips and weekends in Whistler and on Vancouver Island



Accommodation

- Accommodation on campus
- Easy access to classrooms, recreation and campus amenities
- Free Wifi in lobby; wired high-speed Internet in guest rooms
- Laundry on site



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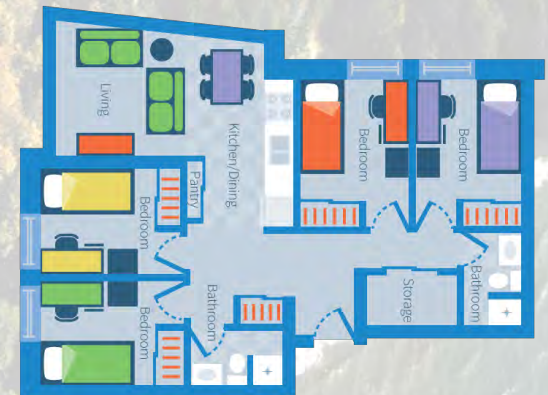
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Accommodation

Shared apartments (4 to 6 bedrooms)

- Private bedrooms with single bed, closet, desk, lamp, chair, bookshelf
- In-suite bathroom with toilet, sink, shower, cabinets
- Equipped kitchen with sink, stove, oven, fridge
- Shared living space with TV

If maximum occupancy is reached in apartment-style accommodation, students may be placed in dormitory-style accommodation.



Course Packages 2015

Package A: Clinical Research and Clinical Medicine

- Introduction to Clinical Research in the Sciences
- Introduction to Clinical Medicine at the Bedside

Package B: Pharmacology

- Pharmacology of Everyday Life
- Systems Pharmacology

Package C: Medical Imaging and Medications for Controlling Pain

- Introduction to Medical Imaging
- Medications for Controlling Pain in Everyday Life and in Surgery

Package D: Biochemistry and Molecular Biology in Human Health, Disease, and the Environment

- Molecular Basis of Disease
- Environmental Biochemistry



Course Packages 2015

Package E: Neuropsychopharmacology and Neuropsychiatry

- Introductory Neuropsychopharmacology
- Introductory Neuropsychiatry

Package F: Understanding the Recovery and Treatment from Injury and Chronic Disease

- Exercise is Medicine
- Introduction to Rehabilitation Sciences: A case-based approach to understanding the recovery from injury and disease

Package G: Population and Public Health

- The Social Determinants of Health
- Biological Concepts of Public Health Practice



Package A

Clinical Research and Clinical Medicine

1. Introduction to Clinical Research in the Sciences

This course provides a window into how clinical research is conducted in the medical sciences. Research methodologies, research process, ethical considerations and practical tips for conducting high-yield, evidence-driven research with patients will all be presented and discussed.

The course includes lectures, workshops and a hands-on mentored individual research project by students that will be presented at the end of the course.



Package A

Clinical Research and Clinical Medicine

1. continued...

A wide variety of health care providers and medical educators will participate in the course and provide examples of research conducted at UBC and other academic institutions.

Engaging speakers, visits to clinical research facilities and effective mentorship techniques will provide students with a once-in-a-lifetime opportunity to take part in the most advanced learning in basic clinical research.



Package A

Clinical Research and Clinical Medicine

2. Introduction to Clinical Medicine at the Bedside

This course will bring medical and science students close to the real life of medicine in the 21st century. Students will be able to meet up close with practicing clinicians who manage complex patients every day as part of their work in the hospital and clinic setting.

Using advanced teaching tools such as medical simulation, and together with experienced physicians from multiple disciplines of medicine, students will learn how to approach patients with medical history taking, physical examination, development of a medical differential diagnosis, and will gain knowledge in determining the need for investigations in order to reach a diagnosis and develop a treatment plan.



Package A

Clinical Research and Clinical Medicine

2. continued...

A combination of lectures, simulation labs, case-based workshops and visits to laboratory and clinical areas, will enhance the hands-on experience and understanding of the medical and other sciences.



Package B

Pharmacology

1. Pharmacology of Everyday Life

Students will gain insight into how drugs produce both desired and adverse effects through exploration of their underlying mechanisms of action on the body. Through historical and present-day analysis of selected prescription, over-the-counter, and social drugs, students will gain an understanding and appreciation of pharmacology directly applicable to their everyday lives. Course objectives will be met through a combination of lectures and small group discussion/tutorial/laboratory sessions designed to introduce students to the challenges of pharmacological research.



Package B

Pharmacology

2. Systems Pharmacology

Students will explore the basic science and clinical applications of drugs in many of the different physiological systems of the body. Lectures and small group sessions will allow students to learn drug mechanisms and effects throughout the body, from both the basic science and clinical perspectives. Among the many topics discussed in this course, students will gain a detailed appreciation of the important drugs and drug classes of the cardiovascular, respiratory, gastrointestinal, reproductive and endocrine systems, as well as the fields of neuropharmacology and autonomic pharmacology.

Please note: A basic background in biology and human anatomy/physiology is recommended but not required for this package.



Package C

Medical Imaging, and Medications for Controlling Pain

1. Introduction to Medical Imaging

This course will provide an introductory understanding of the imaging modalities (plain radiographs, ultrasound, CT and MRI, plus some limited discussion of interventional radiology) used to solve common clinical problems in all body systems. Considerable time will be spent reviewing imaging normal anatomy, using gross anatomy-cross sectional imaging correlation, and this will be followed by demonstration of the critical role that modern imaging plays in Cardiac, Pulmonary, GI, Neurologic and Musculoskeletal disorders.



Package C

Medical Imaging, and Medications for Controlling Pain

1. continued...

Students will gain an understanding of the indications and contraindications for specific imaging tests, and the advantages and disadvantages of each modality in common clinical scenarios. Case-based learning, interactive sessions, and possible hands-on ultrasound will augment didactic lectures, which will be given by subspecialty Radiologists, Fellows, and Residents. A tour of a modern tertiary care hospital imaging department will form part of the course. The course will conclude with a presentation entitled: 'Top ten not to miss cases in Radiology'.



Package C

Medical Imaging, and Medications for Controlling Pain

2. Medications for controlling pain in everyday life and in surgery

This course will explore the treatment of pain at the pharmacological level. Students will gain an appreciation of the role of analgesia and anesthesia throughout history and in present-day society. Classes will be a mix of academic and clinical instructors, providing two different but complementary perspectives on pain management, as well as regional and general anesthesia. Course objectives will be met through a combination of lectures, small group discussions and tutorial sessions, as well as utilization of high fidelity computer-simulation demonstrating how anesthesia is provided and how emergencies in the operating room are practiced.



Package D

Biochemistry and Molecular Biology in Human Health, Disease, and the Environment

1. Molecular Basis of Disease

This course will provide an introduction to key principles of biochemistry and molecular biology in the context of human health and disease. Students will gain an appreciation of basic human biochemical pathways and learn how perturbations in these pathways can lead to disease. Through studies of selected examples, students will gain an understanding of the molecular basis of common diseases such as diabetes, cardiovascular disease, vision loss and cancer. Several case-based topics will be presented featuring work from world-renowned UBC faculty.



Package D

Biochemistry and Molecular Biology in Human Health, Disease, and the Environment

1. continued...

Specific topics may include the roles of the gut microbiome, antimicrobial peptides, personalized medicine, gene therapy, protein structure-function as a guide to drug design and stem cell cures. Course objectives will be met through a combination of lectures, small group discussion and tutorial sessions, as well as student led presentations.



Package D

Biochemistry and Molecular Biology

2. Environmental Biochemistry

This course will critically examine biochemical and chemical processes in the world at large and the impact on human health. Environmental biochemistry will provide students with the scientific principles and concepts required to understand key interrelationships of the natural world and tackle the most daunting challenges of the 21st century. We will explore and debate key processes central for human and environmental sustainability. In a case-based manner, topics are structured as follows: a) a natural biochemical process is examined (system in-balance), b) a specific perturbation is introduced, c) the consequence is analysed (system out of balance), and d) predicative effects and possible corrective measures considered.



Package D

Biochemistry and Molecular Biology

2. continued...

Possible topics discussed will have a biochemical focus and include water and its dependency to life (quantity and quality), pH and ocean acidification, energy flow, cycles of carbon & nitrogen, human introduced chemicals in the environment (e.g. glyphosate, neonicotinoids, heavy metals, crude oil, SO₂, etc.), food security (synthetic fertilizers, genetically modified organisms, pesticides, herbicides,). The course material is oriented toward issues of contemporary and future relevance. Students will incorporate current issues into their work featuring small group discussions, learn to evaluate the relative risks of many present-day problems and gain the tools to further explore these topics.



Package E

Neuropsychopharmacology and Neuropsychiatry

1. Introductory Neuropsychopharmacology

This course will cover the understanding of neurochemical alterations in the major mental illnesses, and the actions of major classes of drugs on these neurochemical systems. Practical approaches to the pharmacological treatment of the major mental illnesses including psychosis, mood disorders, anxiety disorders and sleep will be included. These course objectives will be met through a combination of lectures and student participation in case-based exercises led by an experienced clinician.



Package E

Neuropsychopharmacology and Neuropsychiatry

1. continued...

The Clinical Handbook of Psychotropic Drugs (Bezchilbnyk, Jeffries and Procyshyn, Hogrefe Publishing, 2013) will be one of the texts used. Dr. Ric Procyshyn from the Department of Psychiatry will be a lecturer along with Dr. Alasdair Barr from the Department of Anesthesia, Pharmacology and Therapeutics.



Package E

Neuropsychopharmacology and Neuropsychiatry

2. Introductory Neuropsychiatry

This course will cover the anatomical and physiological basis of major mental disorders, both functional and organic. A neuropsychiatric perspective will include the key features of the history, physical examination, and mental status examination related to the diagnosis of mental disorders. The course objectives will be met through a combination of lectures and student participation in case-based exercises led by an experienced psychiatrist or neurologist. The Casebook of Neuropsychiatry (Hurwitz and Lee, American Psychiatric Publishing, 2013) will be one of the texts used. Prof. Trevor Hurwitz, a psychiatrist and neurologist, from the Department of Psychiatry will be the central lecturer.



Package F

Understanding the recovery and treatment from injury and chronic disease

1. Exercise is Medicine

This course will provide an exploration of exercise and physical activity in the treatment of chronic disease and aging. Through an exploration of chronic diseases such as stroke, arthritis and cardiopulmonary disease, students will gain an appreciation of the effects of exercise on brain function, bone health, and cardiovascular function. Topics will also include the epidemiology of physical inactivity across the world, measurement of physical activity in chronic disease, strategies to get a nation more active, role of health professionals in physical activity prevention and treatment, and mobile technology to motivate physical activity in chronic disease.



Package F

Understanding the recovery and treatment from injury and chronic disease

1. continued...

Students will use a variety of interactive methods to understand the content, including case studies, small group tutorials, and problem-based learning. Students will also complete hands-on labs in a state-of-art fitness and exercise research facility designed to enable access for people with chronic disease and disability.



Package F

Understanding the recovery and treatment from injury and chronic disease

2. Introduction to Rehabilitation Sciences: A case-based approach to understanding the recovery from injury and disease

This course will introduce students to the science of rehabilitation within the World Health Organization framework. Through this approach, students will understand how severe injuries and chronic diseases can impact the patient and family, both physically and emotionally. Conditions such as spinal cord injury, concussion, stroke, cerebral palsy, arthritis, chronic obstructive lung disease and amputation will be used to illustrate the journey through rehabilitation, the road to recovery and adjustment to disability.



Package F

Understanding the recovery and treatment from injury and chronic disease

2. continued...

Along this journey, students will be introduced to concepts about the musculoskeletal, cardiovascular, pulmonary and neurological systems, as well as coping mechanisms and quality of life. In addition, cutting-edge research on novel rehabilitation treatments will be introduced, including mirror therapy for reducing phantom pain after amputation, robotic suits to permit walking after spinal cord injury and e-Health (e.g., tele-medicine, video games, wearable sensors) to improve function. Students will use a variety of interactive methods to understand the content, including multimedia virtual patient cases, small group tutorials, and problem-based learning.



Package G

Population and Public Health

1. The Social Determinants of Health

It is now generally accepted that a variety of personal, social and economic factors influence health status. There is, however, still a great deal of debate about what the specific or most important influences are, and the mechanisms or pathways by which health is either damaged or promoted, and whether and how these factors can be influenced by public policy.

This course focuses on the meaning of health, its measurement, and examination of the factors that influence the health, well-being and quality of life of individuals, families, communities and nations. The course uses two core, interrelated notions of health promotion and population health to examine social, cultural, genetic, environmental, economic, gender and health-system influences on health.



Package G

Population and Public Health

2. Biological Concepts of Public Health Practice

This is an introductory course in human biology /physiology and pathophysiology in relation to public health. It explores biological principles of diseases in relation to public health. Topics include a variety of diseases and conditions that are most frequently discussed in current public health settings. It begins with an introduction to common medical terminology, basic cell biology and general anatomy.



Package G

Population and Public Health

2. continued...

Subsequent classes discuss common and relevant illnesses using an organ system approach, and explore how these diseases influence **individuals' lives and public health initiatives**. **Class discussions** include evolving issues of lifestyle, interventions, screening and diagnosis for these diseases, and explore biology and illness from an **individual's perspective**.

Examples of possible topics: Communicable Diseases; Mental Health & Addiction; Chronic Pain; Diabetes & Obesity; Cardiovascular Disease; Reproductive Disease; Cancer.



Dates & Deadlines

Arrive in Vancouver: **July 18**

Course Dates: **July 20-August 14**

Depart Vancouver: **August 18**

Registration Deadline: **March 28**



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Program Fee

Package per student is **\$4200 Canadian dollars**. Includes:

- Tuition
- Course materials
- Accommodation (31 nights)
- Medical insurance
- Airport transfer (for groups)
- City tour
- Orientation and farewell events
- Some social activities (additional fees for optional trips)



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Feedback from VSP 2014

"The UBC summer program is a very exciting process in my life and I will recommend more people to join."

"The course was awesome!"

"It's a wonderful experience. How amazing Canada is!"

"Don't miss the chance to enjoy one of the most beautiful cities in the world."

"The VSP is very valuable to take part in."

"The lecturers and staff are really great!"



Feedback from VSP 2014

"The course is well-organized with excellent speakers and professors."

"I enjoyed getting to know the real life of UBC students."

"It gave me the chance to study in another country and it's really enjoyable!"

"I made good friends and liked the teachers and the trips."

"Thank you for helping me so much. I'm having such a good time here! I will miss you."



Feedback from VSP 2014

97% of the students surveyed in 2014 said they would recommend the VSP in Medicine to other students



“Enjoy it, it’s really worth it!”



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