2015

REPORT

INNOVATION AND TECHNOLOGY SCHOLARSHIP AWARD SCHEME

創新科技獎學金計劃

Supported by 支持機構

創新科技署 Innovation and Technology Commission

Sponsored by 贊助機構

HSBC 滙豐

Organised by 主辦機構

香港青年協會 the hongkong federation of youth groups

INNOVATION AND TECHNOLOGY SCHOLARSHIP AWARD SCHEME 2015 REPORT

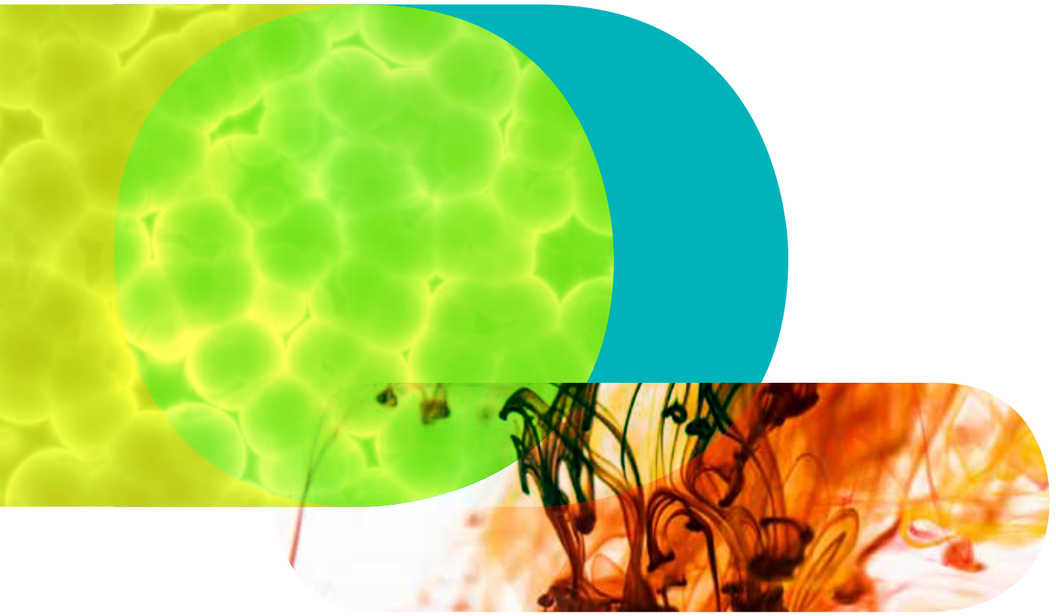


Table of Contents

Scheme Introduction

Innovation and Technology Scholarship Award Scheme

Under the joint sponsorship and support of the Innovation and Technology Commission (ITC) and The Hongkong and Shanghai Banking Corporation Limited (HSBC), the Innovation and Technology Scholarship Award Scheme ("the Scheme") was organised since 2011 by The Hong Kong Federation of Youth Groups (HKFYG) with remarkable results. Thanks to the continual support of ITC and HSBC, the Scheme was organised for the fifth year in 2015.

The Scheme aims to provide recognition to outstanding undergraduates from local universities as well as opportunities of widening their exposure and encouraging them to pursue science and technology as a lifelong career.

Twenty-five undergraduates, who are nominated by the Presidents / Vice-Chancellors of universities, have been selected by the Awardee Selection Committee. They will each be awarded with a scholarship of HK$150,000 to participate in a series of programmes comprising the following components:

I. Overseas / Mainland Attachment Programme

Awardees had opportunity to visit an overseas / Mainland university for a short-term attachment in their related field of study.

II. Mentorship Programme

Awardees were assigned to a mentor for advice and guidance not only throughout the Scheme period but hopefully thereafter. Mentors are all reputable academics / entrepreneurs in the world of innovation and technology.

III. Local Internship Programme [Optional]

Awardee could opt to work as an intern in a technology company, a university or a government department related to his / her field of study.

IV. Service Project Programme

Awardees participated in community service, e.g. delivering educational activities to local primary and secondary students to arouse their interest in science and technology.

In this report, 25 awardees will share their thoughts and feelings about the Scheme's programmes. It also serves as a recap of their learning process in science and technology. It is hoped that they will stretch their wings and pursue innovation and technology industries in the future.

LIST OF 2015 AWARDEES

Miss CHAK Nga Ting 翟雅婷
The Hong Kong Polytechnic University
Bachelor of Science (Honours) in Physiotherapy

Mr CHAN Chun Ki 陳俊麒
The University of Hong Kong
Bachelor of Medicine and Bachelor of Surgery

Mr CHAN Long 陳瓏
The Chinese University of Hong Kong
Bachelor of Medicine and Bachelor of Surgery

Mr CHAN Tsz Chung 陳子聰
City University of Hong Kong
Bachelor of Engineering (Honours) in Energy Science and Engineering

Mr CHEN Jia Xi Kelvin 陳嘉熙
City University of Hong Kong
Bachelor of Engineering (Honours) in Building Services Engineering

Mr CHING King Him 程景謙
The University of Hong Kong
Bachelor of Business Administration (Information System)

Miss HAN Diana Siao Cheng 韓小澄
The Chinese University of Hong Kong
Bachelor of Medicine and Bachelor of Surgery

Miss KAN Lok Ting Catherine 簡樂婷
The University of Hong Kong
Bachelor of Science

Mr KUO Wai Yip 郭偉業
The Chinese University of Hong Kong
Bachelor of Engineering in Systems Engineering and Engineering Management

Mr KWOK Hiu Fung 郭曉鋒
The Hong Kong University of Science and Technology
Bachelor of Engineering in Computer Science

Mr LAI Hei Ming 黎曦明
The University of Hong Kong
Bachelor of Medicine and Bachelor of Surgery

Miss LAM Phoebe Cheuklam 林倬琳
The Hong Kong University of Science and Technology
Bachelor of Science in Biochemistry and Cell Biology

Miss LAM Ping Hei 林苹禧
The Chinese University of Hong Kong
Bachelor of Medicine and Bachelor of Surgery

Mr LAU Chun Ho 劉駿灝
The Hong Kong Polytechnic University
Bachelor of Science (Honours) in Physiotherapy

Miss LAU Wing Man 劉穎文
The Hong Kong Polytechnic University
Bachelor of Science (Honours) in Physiotherapy

Miss LEE Oi Yan Sera 李藹欣
The University of Hong Kong
Bachelor of Dental Surgery

Mr LI Ka Yau 李嘉祐
The Hong Kong Polytechnic University
Bachelor of Science (Honours) in Physiotherapy

Miss LI Sze Wai 李詩慧
The Chinese University of Hong Kong
Bachelor of Medicine and Bachelor of Surgery (Global Physician – Leadership Stream)

Miss LUK Sui Man 陸萃雯
The Chinese University of Hong Kong
Bachelor of Science in Physics

Mr NGAI Ying Tim 倪英添
The Hong Kong University of Science and Technology
Bachelor of Science in Mathematics and Economics

Mr TANTIVANGPHAISAL Pishun 陳忭恂
The Hong Kong University of Science and Technology
Dual Degree: Bachelor of Engineering in Civil Engineering and BBA

Mr WONG Cheuk Fung Raphael 黃卓峯
The Hong Kong University of Science and Technology
Bachelor of Engineering in Electronic Engineering

Miss WONG Lok Tung 黃樂彤
Hong Kong Baptist University
Bachelor of Chinese Medicine and Bachelor of Science in Biomedical Science

Mr XIE Phil Fei 謝非
The Chinese University of Hong Kong
Bachelor of Medicine and Bachelor of Surgery

Mr YIP Chi Yiu 葉志堯
The Chinese University of Hong Kong
Bachelor of Engineering in Mechanical and Automation Engineering

Membership of Awardee Selection Committee 2015

Chairman

The Hon Bernard CHAN, GBS, JP

Member

Executive Council, HKSAR

Members

Dr Hubert CHAN, JP

Council Member

The Hong Kong Federation of Youth Groups

Mr Raymond CHENG

Group General Manager, Chief Operating Officer, Asia Pacific

The Hongkong and Shanghai Banking Corporation Limited

Dr Lee George LAM

Co-Head of Banking and Finance Practice

P.C. Woo & Co.

Dr Brian LI

Managing Director

GP Industries Limited

Mr Brian LO, JP

Deputy Secretary for Education

HKSAR Government

Mr Douglas SO

Vice-President and Pro-Vice-Chancellor (Institutional Advancement)

The University of Hong Kong

Ms Malini THADANI

Head of Corporate Sustainability, Asia Pacific

The Hongkong and Shanghai Banking Corporation Limited

Mr WAI Chi-sing, GBS, JP

Former Permanent Secretary for Development (Works)
(retired in April 2015)

HKSAR Government

Mr WAN Man-yee, BBS, JP

Vice-President

The Hong Kong Federation of Youth Groups

Miss Janet WONG, SBS, JP

Former Commissioner for Innovation and Technology
(retired in July 2015)

HKSAR Government

Professor Rosie YOUNG, GBS, JP

Emeritus Professor in Department of Medicine

The University of Hong Kong

Membership of Award Scheme Administration Committee 2015

Chairman

Professor Roland CHIN, BBS, JP

President and Vice-Chancellor

Hong Kong Baptist University

Members

Mr Anthony AU, BBS

Managing Director

Futuresuccess Consultants Ltd

Ms Yolanda CHIU

Former Deputy Executive Director

The Hong Kong Federation of Youth Groups

Mr Herman LAM

Chief Executive Officer

Hong Kong Cyberport Management Company Limited

Ms Dora LI

Senior Vice President, Corporate Sustainability, Asia Pacific

The Hongkong and Shanghai Banking Corporation Limited

Mr Allen MA

Former Chief Executive Officer

Hong Kong Science and Technology Parks Corporation

Mrs Agnes MAK, MH, JP

Executive Director

The Hong Kong Productivity Council

Miss Janet WONG, SBS, JP

Former Commissioner for Innovation and Technology
(retired in July 2015)

HKSAR Government

Overseas / Mainland Attachment Programme

AUSTRALIA

CHAN Chun Ki 陳俊麒	The University of Hong Kong	Murdoch Childrens Research Institute
KAN Lok Ting Catherine 簡樂婷	The University of Hong Kong	The University of Sydney
LAM Ping Hei 林苹禧	The Chinese University of Hong Kong	The University of Sydney

CANADA

CHAK Nga Ting 翟雅婷	The Hong Kong Polytechnic University	University of Alberta
HAN Diana Siao Cheng 韓小澄	The Chinese University of Hong Kong	University of Toronto
LAM Phoebe Cheuklam 林倬琳	The Hong Kong University of Science and Technology	University of British Columbia
LAM Ping Hei 林苹禧	The Chinese University of Hong Kong	University of Toronto
LAU Chun Ho 劉駿灝	The Hong Kong Polytechnic University	University of Toronto

TAIWAN

CHAN Long 陳瓏	The Chinese University of Hong Kong	National Taiwan University

UNITED KINGDOM

CHAN Tsz Chung 陳子聰	City University of Hong Kong	University College London
KAN Lok Ting Catherine 簡樂婷	The University of Hong Kong	University of Glasgow
KUO Wai Yip 郭偉業	The Chinese University of Hong Kong	University College London
KWOK Hiu Fung 郭曉鋒	The Hong Kong University of Science and Technology	University College London
LAI Hei Ming 黎曦明	The University of Hong Kong	Imperial College London
LAU Chun Ho 劉駿灝	The Hong Kong Polytechnic University	King's College London
LEE Oi Yan Sera 李藹欣	The University of Hong Kong	King's College London
LI Sze Wai 李詩慧	The Chinese University of Hong Kong	University College London
TANTIVANGPHAISAL Pishun 陳忭恂	The Hong Kong University of Science and Technology	University College London
WONG Lok Tung 黃樂彤	Hong Kong Baptist University	University of Glasgow
XIE Phil Fei 謝非	The Chinese University of Hong Kong	University of Oxford
YIP Chi Yiu 葉志堯	The Chinese University of Hong Kong	University College London

USA

CHAK Nga Ting 翟雅婷	The Hong Kong Polytechnic University	Massachusetts Institute of Technology
CHAN Long 陳瓏	The Chinese University of Hong Kong	Yale University
CHEN Jia Xi Kelvin 陳嘉熙	City University of Hong Kong	University of Illinois at Urbana-Champaign
CHING King Him 程景謙	The University of Hong Kong	University of California, Santa Barbara
LAU Wing Man 劉穎文	The Hong Kong Polytechnic University	Yale University
LI Ka Yau 李嘉祐	The Hong Kong Polytechnic University	Yale University
LI Sze Wai 李詩慧	The Chinese University of Hong Kong	Yale University
LUK Sui Man 陸萃雯	The Chinese University of Hong Kong	The University of Chicago & University of California, Berkeley
NGAI Ying Tim 倪英添	The Hong Kong University of Science and Technology	Northwestern University
WONG Cheuk Fung Raphael 黃卓峯	The Hong Kong University of Science and Technology	University of California, Davis
XIE Phil Fei 謝非	The Chinese University of Hong Kong	The University of Chicago

Mentorship Programme

Mentors 2015

Mr Nicholas BROOKE, SBS, JP
Chairman
Professional Property Services Ltd

Professor Tony F CHAN, JP
President
The Hong Kong University of Science and Technology

Professor Vincent CHAN
Joan and Irwin Jacobs Professor
Department of Electrical Engineering & Computer Science
Massachusetts Institute of Technology

Mr Raymond CHENG
Group General Manager, Chief Operating Officer, Asia Pacific
The Hongkong and Shanghai Banking Corporation Limited

Dr Eric CHIEN
Specialist in Orthopaedics and Traumatology

Mr George N CHUNG, BBS, JP
Chairman
Standard Telecommunications Limited

Dr Roy CHUNG, BBS, JP
Co-founder and Non-Executive Director
Techtronic Industries Company Limited

Mr HON Chi Keung, JP
Permanent Secretary for Development (Works)
HKSAR Government

Professor Nancy IP, MH, JP
Vice-President for Research & Graduate Studies
The Morningside Professor of Life Science
The Hong Kong University of Science and Technology

Professor Timothy KWOK
Professor
Department of Medicine & Therapeutics
The Chinese University of Hong Kong

Dr Brian LI
Managing Director
GP Industries Ltd

Professor Dennis LO Yuk-ming, SBS
Associate Dean (Research) of the Faculty of Medicine and Chairman of the Department of Chemical Pathology
The Chinese University of Hong Kong

Mr Tommy LUI Sui-keung
Executive Director
Head of Global Freight Management
LF Logistics (Hong Kong) Limited

Dr Douglas W MUZYKA
Senior Vice President and Chief Science & Technology Officer
DuPont Company

Dr Stephen TAI, GBS, SBS, JP
Chairman
Four Seas Mercantile Holdings Ltd

Professor Paul TAM
Provost and Deputy Vice-Chancellor
The University of Hong Kong

Professor Timothy TONG, JP
President
The Hong Kong Polytechnic University

Dr Paul TSE
Specialist in Orthopaedics and Traumatology

Miss Janet WONG, SBS, JP
Former Commissioner for Innovation and Technology (retired in July 2015)
HKSAR Government

Professor Vivian YAM, BBS
Chair Professor, Philip Wong Wilson Wong Professor in Chemistry and Energy
The University of Hong Kong

Ms Marjorie YANG, GBS, JP
Chairman
Esquel Group

Dr YEUNG Man-chan
Ophthalmologist

Dr Edwin YU Chau-leung
President
Hong Kong Association for Integration of Chinese-Western Medicine

Professor Paul YU
Associate Vice Chancellor for Research Initiatives
Professor of Electrical and Computer Engineering
University of California, San Diego

Professor YUEN Kwok-yung, SBS, JP
Henry Fok Professor in Infectious Diseases
Chair of Infectious Diseases
Department of Microbiology
The University of Hong Kong

Local Internship Programme

Supporting Organisations 2015

Computer and Technologies Holdings Limited

Development Bureau, HKSAR Government

Dunwell Industrial (Holdings) Limited

Eu Yan Sang (Hong Kong) Limited

General Electric

Gold Peak Industries (Holdings) Limited

Hai Kang Life Corporation Limited

Hong Kong Aero Engine Services Limited

Lee's Pharmaceutical (HK) Limited

Li Ka Shing Faculty of Medicine
The University of Hong Kong

Sanwa BioTech Limited

The Hong Kong Productivity Council

The TeleEye Group

Service Project Programme

One of the Scheme components, Service Project Programme, requires awardees to provide service to the community by designing different science workshops for the youths. In the Scheme 2015, awardees participated in different community services, e.g. delivering educational activities at local primary and secondary schools to arouse students' interest in science and technology. Over 1,000 primary and secondary students and the public had benefited from the service projects provided by awardees.

Reports of 2015 Awardees

CHAK Nga Ting Natalie

The Hong Kong Polytechnic University
Bachelor of Science (Honours) in Physiotherapy

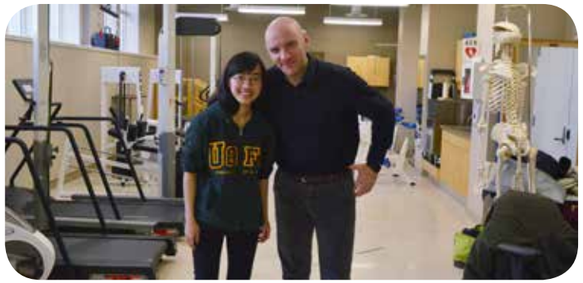
Overseas Attachment Programme

Thanks to the support of this Scheme, I was granted the opportunity to gain fruitful overseas experience with six-week placement in Canada and three-week attachment in USA.

Six-week placement at the Corbett Hall Student Physical Therapy Clinic, University of Alberta, Canada

Working as a student physiotherapist at the Corbett Hall Student Physical Therapy Clinic for six weeks was a wonderful experience. Canada is a country with a comprehensive health-care system and well-known as a leader in the domain of orthopedic manual and manipulative physiotherapy using an integrated approach. Corbett Hall Student Physical Therapy Clinic is a university-led outpatient clinic which provides a great variety of services, including musculoskeletal and neurological rehabilitation. Most interestingly, third-party referrals are not required here.

During my placement, I gained precious chance to meet patients with various conditions. Generally, each student physiotherapist would treat around ten patients per day with the guidance of four experienced registered physiotherapists. In total, I encountered forty-four musculoskeletal patients and eleven neurological patients. Meanwhile, I led group exercise classes every Tuesday and Thursday, namely the Young Hip Exercise Program and Parkinson's Rehabilitation in Movement Enhancement respectively. Each session lasted for forty-five minutes and successfully attracted tons of patients to apply because of its notable effectiveness.



In the beginning of every week, I worked with three student physiotherapists coming from Hong Kong, Canada and Greece as well as one Canadian student physiotherapist assistant. Our job duty was to design a series of circuit training for the patients with total hip replacement and Parkinson's disease. In order to make progress, we modified the trainings from time to time and had lots of fun in inventing new sets of exercises. Sometimes, they might be too difficult to the patients, thus we had to rely on our wittiness to make changes at the last minute.

Moreover, there are "Clinic for Ambulatory Rehabilitation Research and Education" and "Common Spinal Disorders Research Group" at this university. I also had valuable chance to take a look of how the registered physiotherapist used a robotic exoskeleton named "ReWalk" to train a patient with spinal cord injury to walk. Through this six-week comprehensive placement experience, I undoubtedly believe there is plenty of room for innovation and technology to take place in rehabilitation sciences. Interdisciplinary collaborations such as the collaboration of bioengineers and physiotherapists are urged to explore innovative tools to facilitate rehabilitation.

Three-week attachment at the Massachusetts Institute of Technology, USA

Three months after the trip to Canada, I embarked on a trip to USA and studied at the cradle of numerous Nobel Prize Winners, the Massachusetts Institute of Technology. Within the three-week attachment, I took three courses, namely (1) Discrete Choice Analysis: Predicting Demand and Market Shares; (2) Formulation and Stabilization of Biotherapeutics; (3) Technology, Organizations, and Innovation: Putting Ideas to Work.

In the beginning of each course, everyone took turn for self-introduction. Considering all of them own master's degrees, doctoral degrees or even postdoctoral fellowships, they were surprised why an undergraduate student would travel abroad to study advanced courses which are "seemingly irrelevant" to my major but more related to the engineers, pharmaceutical industries or other professionals. Yet that is exactly my intention to study something new and try to find the linkage. Frankly, it was not easy to attend courses surrounded by a group of experts in other fields and learn something out of my profession. Fortunately, the lecturers and my classmates were very helpful. With their encouragement and generous help, I gained lots of inspirations from the courses.

Taking the "Discrete Choice Analysis" as an example, it is a powerful tool to analyze human choice behavior. It can then be utilised in a wide range of purposes ranging from predicting changes in demand to allocation of resources in healthcare system. In certain chronic pain conditions, home rehabilitation exercises programme plays a vital role in pain management. Still, patients' compliance is not guaranteed. In this case, it can possibly be applied. By identifying the attributes and formulating the utility functions, therapists may be able to use the software to calculate the dominant factor influencing the extent of patients' compliance. Hence, the programme can be modified accordingly to maximise their compliance.

Most importantly, I learnt from the third course that in order to be a successful innovator, presenting "great ideas" is not enough. You have to present "testable hypotheses" and do small experiments to prove them. Otherwise, ideas are just some random thoughts and your wildest imaginations.

Mentorship Programme

My mentor is Professor Tony F Chan, JP, the President of The Hong Kong University of Science and Technology. Despites having busy schedule and could only see me on the Award Presentation Ceremony, Professor Chan squeezed time to chat online with me via email. He is really nice and willing to give advice and help. It is my great honour to be his mentee and I hope to gain chance to learn more from him in the future.

Service Project Programme

In the InnoTech Month, I launched two parent-child workshops entitled "Mysteries of Our Feet" at the Science Park. The goal of my workshop was to let participants appreciate the beauty and complexity of the human foot through a series of interactive games and activities. Specifically, the workshop covered topics like "basic anatomy & physiology", "normal foot development", "common foot problems" and "interesting facts of our feet". Participants had chances to stand in physiotherapists' shoes to make simple physical diagnosis on other's feet, conducting a screening test for flat feet, as well as having a taste of the integration of games and exercise therapy to strengthen their foot arch. After this project, I am more confident in holding similar events. In the future, I am going to do more community service and hold more health-care workshops for the public to raise their awareness towards health and physiotherapy.

Overall Evaluation

A dream drives people forward; passion keeps you on track; and a daring heart helps you to overcome every challenge that you may encounter along the way with uncertainties and unpredictable changes. Under the Innovation and Technology Scholarship Award Scheme, I dreamed, I took risks and I benefited from all the experiences. Although the Scheme 2015 has come to an end, I believe what I have gained from the Scheme will continue to help me to be a better contributor to the society.

CHAN Chun Ki Joshua

The University of Hong Kong
Bachelor of Medicine and Bachelor of Surgery

Unlike a lot of world famous universities, doing research is not a compulsory requirement of medical schools in Hong Kong. Nonetheless, I had long been interested in it. I have completed a research project during my studies in universities, but overseas working experience is also an essential part to an innovative and fruitful career.

Overseas Attachment Programme

With the help of the Innovation and Technology Scholarship Award Scheme, I was granted the opportunity to work at the Murdoch Childrens Research Institute, which is an internationally-renowned paediatric research centre based at the Royal Children's Hospital in Melbourne. In particular, the Gastro and Food Allergy Group led by Professor Allen, which is best known for leading several important research projects in food allergy, including the HealthNuts, SchoolNuts and Vitality projects. Most significantly, the HealthNuts project is a population-based cohort study of over 5,000 children born in Melbourne, and also the epidemiological and clinical characteristics of food allergy. A population study with such sample size and strength is rare even on the global scale, and up to date it has already produced over 30 publications in international prestige journals, and counting.

During my three months of attachment, I mostly worked under this internationally leading project in paediatric allergy. I started off with strengthening my knowledge foundation in the field by studying landmark papers in paediatric food allergy and immunology, and also the multiple publications by the team. At the same time, I had to learn a new and more advanced statistical software compared to the one I used in Hong Kong, which enabled more complete and advanced statistical analysis. After some hard book work and brainstorming, I came up with the idea of comparing the reaction profiles of the same cohort of children at two different time points, in both the clinic setting of oral food challenges and also the community setting of accidental exposure to food allergens, and also identify possible differences and the underlying mechanisms. After three months of hard work, including occasionally going back to office to work even after midnight or on public holidays, I somehow managed to finish my project and wrote up a manuscript, and am expecting to submit to an international journal for publication at current.

Achievements in academic work was hardly the only objective of my trip, it was also a valuable chance for me to experience the student life of studying overseas. Although I was working under Murdoch Childrens Research Institute, and strictly speaking not part of the campus, I was given the privilege to stay at the University College of the University of Melbourne, and live with both the undergraduates and postgraduates of the University. When I first settled at the place, I was rather shy due to the fact that I was all alone in a completely unfamiliar place, and spent most of the time alone. However, as I stayed longer and people started to notice my presence, some of them started inviting me to meals or other activities, and slowly I became attached to a group of Asian students. During my three months of stay, we spent most of our meal times together, occasionally going out to downtown, and they also gave me a tour around the campus of the University. Even after I left, we still kept in touch with each other through the Internet, and one of them has been also planning to visit Hong Kong in the near future.

Mentorship Programme

The Scheme has granted me the honour to be the mentee of Professor Dennis Lo Yuk-ming, SBS, who is one of the greatest scientist clinicians in Hong Kong, most well-known for his discovery of fetal DNA in the blood of the pregnant mother, which laid the foundation for safe and accurate prenatal genetic diagnosis. He is a bright yet humble man, offering me sound advice on the importance of balancing between laboratory and clinical research. I will keep his words in mind throughout my career.

Service Project Programme

In the final two years of my medical school, my curricular workload struck a new high, with examinations being held every two months, I was unable to find the time to initiate my own service project. It was therefore a great relief when I was allowed to cooperate with the projects that other awardees had initiated, which enabled me to be involved and contribute despite my busy school schedule. I engaged in two service projects, one during the InnoCarnival in assisting programmes and workshops designed by other awardees, and the other one at the Hong Kong FLL Robotics Tournament as a helper. I hope later on in my career, regardless of my busy office duties, I could still find time to do community service. Although it is an occupation, the spirit of becoming a doctor is to utilize the most of your abilities to serve people.

Overall Evaluation

The Innovation and Technology Scholarship Award Scheme has given me valuable and memorable experiences. It has not only granted me the ability to fulfil my wish of broadening my horizons and pursuing excellence beyond the boundaries of Hong Kong, more importantly it widened my connections and helped me build bonds with people who share the same interest as mine. The Scheme has been an exclamation mark to the end of my six years of university study. After graduation, amid the clinical duties and obligations of being a doctor, I will be continuing my journey down the road of research and academia. Innovation is an attitude and being courageous to take new steps and try is important, especially to budding youngsters. If there is one thing I have learnt from being a part of the Scheme, it would be being willing to try as the first step to success. It does not guarantee anything, but it is better than nothing, and only after that first step one will be able to explore the true boundaries of own ability, which may be far beyond imagination and expectation beforehand.

CHAN Long Landon

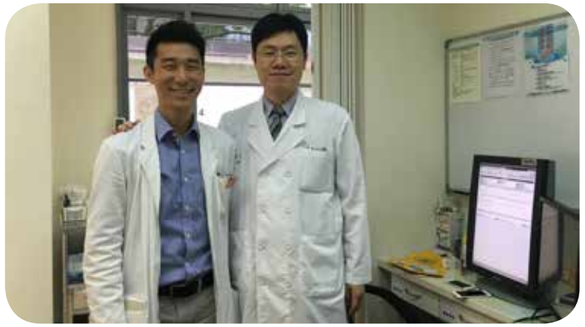
The Chinese University of Hong Kong
Bachelor of Medicine and Bachelor of Surgery

Overseas Attachment Programme

With the generous support from the Innovation and Technology Scholarship Award Scheme, I was given opportunities to engage in both translational research and clinical practice overseas, paving my career towards a career in medical practice and clinical research

In the summer of 2015, I attached to the Gerstein Lab at the Department of Molecular Biophysics and Biochemistry in the Yale University. Being one of the largest bioinformatics groups in the United States, Gerstein Lab is deeply involved in human genome annotation projects. It has been fuelling the growth of personalised medicine in the past couple decades. My project at the Gerstein Lab was to identify all the enhancers within the human genome by using intensive computational methods and statistical modeling. I was able to produce some preliminary results within 10 weeks. It was an honour that my work was recognized! At the time of this writing, the manuscript has been submitted to a peer-reviewed journal and I was one of the co-authors. I am very thankful for the opportunity to be involved in such a large-scale research project.

Apart from research, I would also like to explore how clinical practice was done outside Hong Kong. With that in mind, I attached to the Department of Oncology and Department of Neurology at the National Taiwan University School of Medicine (NTU) in the summer of 2016. NTU is considered one of the best hospitals in Taiwan with higher patient volume. Despite the busy work schedules, the doctors invited me to shadow their outpatient clinics and ward activities.



I learned a lot from them in both how they approached a disease clinically and communicated to patients effectively. Moreover, I was amazed by the holistic palliative care provided in Taiwan. The palliative care team provided comprehensive management supports to patients and their family members, including pain management, regular follow up and psychosocial issues. This allowed patients with terminal diseases to pass away with dignity and I think this was a very noble act as a society.

Mentorship Programme

I am honoured to have Miss Janet Wong, SBS, JP, the former Commissioner for Innovation and Technology as my mentor. I really enjoyed my time with Miss Wong.

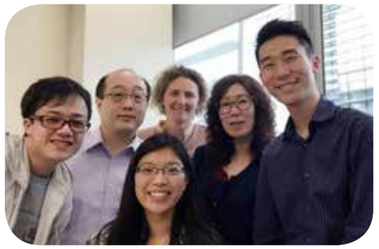
When we first met, Miss Wong positioned herself as an "auntie" to me, so I could freely talk to her on any topics. Our discussions extended beyond innovation and technology and touched on many other aspects in life, for example, finding a suitable career path, growing up internally and handling difficult situations in different ways. It always struck me how Miss Wong could think from different angles. She is someone I look up to and I wish to learn from her in the years to come!

Local Internship Programme

I joined the Sanwa BioTech Limited for my local internship programme. Sanwa is a 3 years old start-up and it has been developing its own in-vitro diagnostic device for rapid diagnosis of multiple infectious diseases. For the device to be legally distributed around the world, it must comply with a number of regulations set by the relevant regulatory organisations, such as the US Food and Drug Administration (FDA) and the European Commission.

Over the three-week internship at Sanwa, my main task was to research on the regulatory processes for in-vitro diagnostic device around the world, mainly on the guidelines set by the FDA, EC and Hong Kong Medical Device Control Office. Specifically, my job duties included identifying the class of the device according to the guidelines, the conformity assessment involved and the quality management systems (ISO or FDA 510 (k)) required. At the end of my internship, I gave a presentation on what I found and wrote a document for their future new hires as reference. The Sanwa experience has helped me gain a deeper understanding of the complexity behind the marketing of an innovative product such as a medical device.

Making scientific breakthroughs is difficult, but it is equally challenging to translate scientific findings to something that can be available to the public.



Service Project Programme

I organized two workshops in the innoTech Month 2015. These workshops aimed to stimulate primary school students' interest in innovation and technology. My topic was on cardiovascular health and non-invasive medical devices. Monitoring cardiovascular health is very important and there are multiple ways we can check our cardiovascular health non-invasively. The simplest way is to take the radial pulse with our hands, but to stimulate kids' interest in technology, I brought some medical equipment to the workshop to showcase how technology can help doctors to learn about our own cardiovascular health. For instance, I brought both electrical and analog blood pressure monitors for them to try, telling them how to record the systolic and diastolic blood pressure. I also let them put on a stethoscope and listen to their heartbeats. They loved it and started pretending to be doctors themselves! It was really satisfying to see them enjoy the workshop so much. I hope their curiosity towards science will not stop along their growth.

Overall Evaluation

I am very thankful to have participated in the Scheme. With the support from the Scheme, I was able to go on overseas exchange (twice!), learn from a wise mentor, attach to a budding local biotech startup and contribute to the society with my knowledge and skills. I found the design of the Scheme very comprehensive because it extends from the continuum of acquiring new knowledge and experiences via overseas attachment to giving back to the society via service projects.

This holistic spectrum of exposure allows me to realize how rewarding it is to innovate something new and share it with others. Innovation is like a new car with all the new gadgets installed, but sharing is the gasoline that fuels the society to move forward. Lastly, I would like to thank the Innovation and Technology Commission, The Hongkong and Shanghai Banking Corporation Limited and The Hong Kong Federation of Youth Groups for their undeniable support to such an amazing Scheme.

CHAN Tsz Chung George

City University of Hong Kong
Bachelor of Engineering (Honours) in Energy Science and Engineering

Having rewound the journey happened in the past few months, I feel ecstatic yet unbelievable. It all started with a glance at the announcement board next to my school office. When I saw that catchy poster staple on the board, a courageous idea flashed into my mind. With the generous support from my advisor and senior fellow, I applied for the Innovation and Technology Scholarship Award Scheme and trembled nervously until the day my phone rang with a congratulation message.

Overseas Attachment Programme

Last year, I applied for being an affiliate student in the Department of Civil, Environmental and Geomatic Engineering under Faculty of Engineering Sciences at the University College London (UCL) , a world's leading university in multidiscipline, from January to June. UCL is founded in 1826 and is one of the founders of the University of London. It locates in the central London and adjacent to The British Museum and The British Library.

Taking the courses in Energy System and Sustainability; as well as Water and Wastewater Treatment in UCL encouraged me to pursue my post-graduate study in bioenergy and water purification. In UCL, I had plenty of opportunities to explore advanced technologies in bio-conversion and implementation of empirical technology, such as algae fuel and Thames Water Treatment Plant trip. Inspired by these cutting edge technology, I feel more interested in these two particular fields and consequently, I would like to pursue my post-graduate study in these fields.

I have also taken courses in Global Environmental Politics and Coastal Engineering. They reinforced my conceptuality about how the environment, engineers and society interconnect with each other and how strong the interconnection is. For example, in the Global Environmental Politics course, we have gone through a case study referring to the relationship between policy implementation specifying in environmental protection; and democracy by using the fighting journey made by the former President of Maldives – Mohamed Nasheed. Initially, the President thought that they should put a higher priority on environmental protection than democracy, as it was no use talking about democracy when the lives of people were threatened by global warming caused by intensified greenhouse gases emission. Unfortunately, his dream of sustainable development eventually ended as he was forced to resign by the military sector in Maldives and was imprisoned.

In terms of expanding my exposure by joining the Global Citizenship Programme, I was designated in a group mimicking a pharmaceutical company named Novartis, to defeat pandemic outbreak through collective works with other organisations, companies and authorities. Within the two-week programme, each group took comprehensive lectures given by different experts such as pharmacists, bureaucrats and delegates from the WHO. At the same time, we were required to compile online blog every day, design a poster and create a film about how we, as a pharmaceutical company, could contribute in combating those outbreaks. This exclusive experience helped me to understand the importance of having the sense of belongings as being a global citizen, as no one can be excluded from the issues of pandemic outbreak, environmental deterioration and energy crisis.

Mentorship Programme

It is my pleasure to have Dr Douglas Muzyka, Senior Vice President and Chief Science & Technology Officer of DuPont Company, as my mentor. Despite his busy schedules, Dr Muzyka spared his time to give numerous feasible and specific advice regarding my career path as a professional energy and environmental engineer via emails and phone calls. He didn't only give me some suggestions regarding my exchange study at UCL in London but also shared with me some unique views on whether I should take post-graduate courses immediately after graduation. More importantly, Dr Muzyka shared words of wisdom about life as well as his personal experiences in merging innovative ideas into products as a Chief Science and Technology Officer. I would like to express my sincere gratitude to him.

Local Internship Programme

I My job duties included: (1) Assisting environmental engineers in wastewater treatment system maintenance, (2) Analyzing water samples taken from the system for water quality improvement, (3) Carrying on wastewater treatment system inspection, (4) Familiarizing and assembling evaporative cooling unit, and (5) Editing monthly performance reports from clients as well as governmental departments. The water treatment system that I was responsible to monitor is called Dunwell Membrane Bio-reactor (DMBR) systems. It can produce effluents with higher water quality since almost all of the suspended solids and biomass contained could be removed. Hence, both water usage and energy usage could be decreased. As for the portable evaporative cooling units, I assembled purely environmental friendly products called Port-A-Cool, which no chemicals are used in the processes of cooling and their housing are made from recycled plastic.

Service Project Programme

As for the last component of the Scheme, throughout this year, Phoebe and I organised two scientific workshops for children to nurture their interests towards science or engineering as well as triggering their innovative and critical thinking. The title of the workshops was 'Invisible Assets', which was about atmospheric pressure. During the workshops, it was delightful to observe how students were surprised by chemical reactions involved and fell in love with science. Initally, I treated these workshops as one-way teaching, but children's reaction recalled me the reasons why I started devoting my time on science since high school.

Overall Evaluation

Rewinding my remarkable journey in this year, with the financial supports given by the Scheme, I have strengthened my skills, academic performance and also got to experience the unique and gorgeous British culture from hundreds of thousands of heritages preserved via studying at UCL. The internship allowed me to integrate theories and technique learnt from classes into real life. Most importantly, acquiring a prestigious and realistic working preview in particular career fields is extremely useful for evaluating career alternatives for my future career path has been reconstructed under Dr Douglas Muzyka's helpful advice. Last but not the least, hosting service project was a mutual learning process to both contribute to the society and strengthen my passion towards science and engineering. Once again, I would like to express my sincere gratitude to the Innovation and Technology Commission, The Hongkong and Shanghai Banking Corporation Limited and The Hong Kong Federation of Youth Groups and everyone who provided support and advice to me throughout the Scheme.

CHEN Jia Xi Kelvin

City University of Hong Kong
Bachelor of Engineering (Honours) in Building Services Engineering

It is a great honour for me to be selected as one of the awardees of the Innovation and Technology Scholarship Award Scheme 2015. Through the Scheme, I went to the United States undertaking an exchange programme, engaging in an internship at a listed company and taking part in a meaningful service project, all of which have brought me an array of unforgettable experience and I would like to take this opportunity to share some of those with you.

Overseas Attachment Programme

In the Spring Semester of 2016, I went on exchange to the University of Illinois at Urbana-Champaign (UIUC) which is the flagship of the University of Illinois system and one of the most renowned public universities in the States. Besides its outstanding academic stature, I was also overwhelmed by the sheer size of the University. Yet travelling half the globe, I intended to immerse myself into a different learning environment, participate in a variety of activities and at the same time build relationship with people from culturally diverse background.

At UIUC, I took five courses and "Introduction to Electric and Electronic Circuits" was my favorite, which focused on basic principles of circuit analysis, introduction to semiconductors and digital logic circuits. It is an electrical engineering course designed for mechanical engineering students. I would not gain the benefit in learning more in-depth if I have not immersed myself in a course different from my home department, especially in area about semiconductors and digital logic. What I most keened on was the weekly lab session that came along with the course. We formed groups of two and constructed circuits with a variety of electronic components. Apart from those related to the lectures, we also took apart in commercial electronics and, on one occasion, we even made use of an obsolete phone to build an intercom. By comparing the waveforms generated on the oscilloscope with and without pressing the dial, we gained insight on how the telephone company's central office identifies what number has been dialed, which turns out to be related to the tone we hear when the keypad is pressed. This excellent course not only provided me with hands-on experience in consolidating knowledge that I have learnt during lectures but also greatly raised my understanding on how real world electronics work.

Another course which I immensely enjoyed was "Companion Animals in Society". I enrolled in this course at first instance as I would like to grasp this exchange opportunity to take a subject, which is not available at my home university while

animal science, which in line with the growing concern of animal welfare in Hong Kong, seemed to be a good choice. During lectures, we were taught about the evolution of animal protection, the use of assistance and service animals, and the growth and impact of the pet supply industry. Beside normal lectures, the lecturer also invited special guests to give talks and one of the speakers was a canine handler who talked about the process of training a Malinois into a bomb sniffing dog and their duties. The most remarkable demonstration was he brought the dog into the lecture hall at the end of the class. I was really stunned when the dog did successfully search the explosive hidden under a chair by the handler. The course has greatly enhanced my knowledge of animal welfare.

Throughout the semester at UIUC, I have noticed all the courses I have taken have one thing in common that is the professors expect students weigh heavily with self-oriented study, and I believe this is the key to absorb and retain knowledge.

Exchange is undoubtedly a once in a life time experience. Apart from studying, I also spent time engaging in a water supply project supported by the Engineer Without Borders USA and joining the Engineering Outreach Society with whom I went to local elementary school classrooms to conduct fun science projects with the kids. Lastly, as a car enthusiast I also participated in activities organized by the Illini Auto Club.

Mentorship Programme

It was my pleasure to have Mr Nicholas Brooke, SBS, JP, Chairman of Professional Property Services Ltd, as my mentor.

Having had to stay in the US for most of the time throughout the year, I regretfully have not had the opportunity to meet Mr Brooke after the award ceremony. Yet we have been communicating via email and Mr Brooke has always provided useful feedback to my queries, which has greatly enlightened me on choosing my career path. I am truly thankful for his guidance and I hope we can work out a time soon to meet again.

Local Internship Programme

I had the privilege to work as an intern at Computer and Technologies Holdings Limited which is a leading IT services provider in Asia. I was assigned to a division that has developed an Enterprise Information Management Software focusing on sorting documents and reducing the time needed for searching relevant information.

At the start of the five-week internship, my colleagues introduced the main function of the software and helped me get used to the interface of the software. Becoming familiar with the software, I began to do trouble shooting which I had to reconstruct the scenario where problems reported by the customers occurred so that the software engineer could patch it up. Finally, I was given the opportunity to help customize the software to meet the client's requirement before its commission at the client's end. In short, the internship introduced me to the field of e-business solution which I was previously unfamiliar with and offered plenty of challenges, fully satisfying my inquisitive nature.

Service Project Programme

The Scheme encourages its awardees to give back to the community and participating in the Service Project is one of the means to do so. I was responsible for two sessions which were held at the Hong Kong Science Park and Wo Che Plaza respectively. Since I would like participants to learn something more unique and also embedded in their daily life, I came up with the idea of conducting experiments with chocolate beans to introduce color additive in food and unveil the secrets behind the color coating of the chocolate beans.

I am pleased to see all the kids enjoyed the hands-on experience and I believe now they have a better understanding on things they consumed very often. Surprisingly, I am also benefited by the Service Project. It boosted my confidence in teaching young kids, which have prompted me to join the Engineering Outreach Society during the exchange period.

Overall Evaluation

The holistic Scheme has brought me a colossal amount of invaluable experience and greatly enriched my university life. I would like to take this opportunity to express my sincere gratitude to The Hong Kong Federation of Youth Groups, the Innovation and Technology Commission and The Hongkong and Shanghai Banking Corporation Limited, all of which have occupied a pivotal role to make this Scheme possible. I wholeheartedly recommend the Scheme to all students studying in the STEM fields.

CHING King Him Jonathan

The University of Hong Kong
Bachelor of Business Administration (Information System)

As an aspiring technologist and entrepreneur, I went to California for a six-month reciprocal exchange programme. It wouldn't be possible without the support of Innovation and Technology Scholarship Award Scheme. I have taken part in all four components of the Scheme. I sincerely appreciate the broad spectrum of learning opportunities offered by the Scheme.

Overseas Attachment Programme

The Overseas Attachment Programme is the most rewarding part of the journey. I went to the University of California, Santa Barbara (UCSB) through a study abroad provider called UCEAP, which has partner universities covering more than 40 countries worldwide.

Situated in California, UCSB has top-ranked computer science department with interdisciplinary research and development. Its reputation as a frontier in computer science is exemplified by the fact that it was one of the first four nodes to be installed in the precursor of the Internet, ARPAnet, in October 1969.

During the two academic terms at UCSB, I was fortunate to study in hands-on curriculums offered by the department. Being passionate about new computer science advancement, I have been devoting my time to autonomous robotics and quantum computing. Despite the heavy workload of each course, I took courses about artificial intelligence, computer vision, cryptographic systems and quantum mechanics across both academic terms. The courses required students to build different solutions for problem sets on a weekly basis. The hands-on and continuous assessment method require students to apply theories into practical solutions in rapid iterations, which is different from the approach in Hong Kong.

I had chances to come across a number of local entrepreneurs in various events. It was such a precious experience to meet all these bright young talents who are all driven in building their own business.

I also joined LA Hacks, the largest hackathon in the West Coast in April. As a high profile coding competition, LA Hacks receives renowned sponsorship from Microsoft, Snapchat, SpaceX, Disney etc. They also provide lots of makers' tools such as 3D printers, Virtual Reality Oculus Rift, etc. I tried building a prototype of thought-controlled air-conditioner remote, by using a EEG headset to capture brainwave signals and gestures control armbands with EMG (electromyography) sensors. The prototype is rudimental but it certainly was a fun learning experience to experiment different new technologies.

During the 6-month of exchange, some of the best moments were to visit the bleeding edge technology facilities. In the Bay Area, I have visited Stanford, Google and Berkeley. What impressed me the most was Stanford, the most important and historical academic research powerhouse in Silicon Valley. When we walked around the campus, we saw artifacts of the first internet node, Google's first server with casing built with Legos, the old processor built by Hewlett-Packard and the birthplace of Snapchat. My friends and I were lucky to have a glimpse of some of the most advanced labs in the world, including Yamamoto Quantum Information Lab and Nanofabrication Facility. Also, I was extremely fortunate to have joined one of the quarterly dinner gatherings with some Stanford and Berkeley professors grown up in Hong Kong. They invited Professor Luk from Berkeley, the Breakthrough Prize's winner to give us a short lecture about his work in fundamental particles. He works on identifying subtle patterns in neutrinos, discovering three interchanging type of neutrino oscillations.

On the southern part of California, Los Angeles is well-known for its aerospace communities. It was my honour to meet two senior JPL (Jet Propulsion Lab) engineers and one NASA alumnus who taught in UCLA. They shared how they built the critical components needed in the launching, maneuvering and landing part of the Mars rover Curiosity.

Mentorship Programme

Mr Raymond Cheng is an incredible teacher and friend. As the Asia Pacific Group General Manager and Chief Operating Officer of The Hongkong and Shanghai Banking Corporation Limited, Raymond has extensive experiences and immense business acumen in banking information management and operations. He manages large assets of HSBC, in which he leads multi-billion technology strategies across 30 APAC countries. Serving as Directors in multiple committees, he has insights into the technology and finance landscape.

The first time meeting Raymond was intense yet exhilarating. Quick-witted and unexpectedly approachable, he engaged me in conversation with his humor. Yet when we turned to topics about strategy and technology, he became focused and energetic. Every business story Raymond shared was intelligent and fun, such that I felt like learning in a great MBA lessons with a senior management executive.

Local Internship Programme

General Electric is a global technology conglomerate that spans across industries including aviation & automotive, medicine, finance and energy. Being one of the most important firms since Industrial Revolution, they manufacture aviation engines, oilrigs, energy grids and all other irreplaceable infrastructures in modern economy.

I worked as a technology intern in General Electric's Hong Kong office for 8 weeks in the summer of 2015. It was humbling to be part of this industrial giant and learnt from their internal resources. I was given a lot of freedom to work on my own project in software development. The internship gave me insights into corporate software frameworks by seeing the firm's web applications under the hood. Requiring employees to work and interact with international teams, General Electric also has top video conferencing technology with the best networking and low latency video streaming technology. It was exciting to have the exposure in such a global tech company.

Service Project Programme

The service project is one of the highlights in the Scheme. Each of the awardees was assigned to organize a workshop for primary school children. With an aim to teach children some basics of biochemistry, I worked with a local social enterprise to teach them to make perfumes. It was certainly a fun experience interacting with children. They were active and energetic in the process of making perfumes. I certainly felt motivated to see their passions in science. They proved to be more knowledgeable in chemistry and scientific facts than we expected.

It was also great to help out in other awardees' workshops related to heat transfer, identifying real Chinese herbs, etc. I found it quite enjoyable learning new domain knowledge while volunteering.

HAN Diana Siao Cheng

The Chinese University of Hong Kong
Bachelor of Medicine and Bachelor of Surgery

At its core, the Innovation and Technology Scholarship Award Scheme provides financial assistance for university students in Hong Kong to engage in an overseas exchange programme. I had the incredible privilege to spend my summer at the Princess Margaret Cancer Centre, a teaching hospital affiliated with the Faculty of Medicine in the University of Toronto. Not only is it the largest cancer centre in Canada, but it is also one of the top five cancer research centres in the world. As a research institution that advances basic, translational, and clinical research, they rank fourth in terms of papers published in high-impact oncology journals and fourth in terms of highly cited papers when compared against other research centres in the world. The Clinical Trials programme at the Princess Margaret Cancer Centre is also world-renowned and one of the largest in the world with over 600 active trials and 1 in 5 new patients enrolled in a clinical trial. It was my true honor to attach to their Phase I clinical trials team in such a prestigious institute.

Overseas Attachment Programme

I had wanted to attach to an oncology department abroad and involve in oncology-related clinical research. I believe that medicine, unlike any other discipline, exists at the juncture where human ingenuity is pitted daily against situations of life and death. In this fight to better life, medicine has become a field of constant technological innovation. Today, the new era of genomic-based personalised medicine is on the

verge of taking off, and I am keen to take part in it. This is the exciting and cutting-edge field that I am passionate about and want to pursue in Hong Kong where substantial players of genomic medicine already exist. Oncology is one such area where the therapeutic applications of genome sequencing has extended into clinical practice. Cancer genes are now routinely identified, and drugs are given with precision to target cancers with susceptible mutations. The development of these targeted drugs and the process of determining their safety and efficacy through clinical trials are vital to the advancement of oncological therapies. With my interest in genomic medicine, exploring its application in oncology was the major motivation behind my desire to do an elective at the Princess Margaret Cancer Centre.

Therefore, my learning objectives were to explore 1) Clinical oncology practice –to observe rounds, consults, clinics, meetings and learn about management of different cancers; 2) The role genomics/personalised medicine can play in cancer treatment and screening, and the overall breadth and the application of genomic research in cancer; and 3) How cancer drugs are developed, from the ideation stage to getting it to clinical trials and the market. During the time of my attachment, they had more than 40 active drug trials open for enrollment. I learned a lot about what Phase I & II trials entailed, how they monitored Phase I trial patients, and how they managed all these trials through team meetings. I saw the hope that clinical trials and some new drugs can offer patients, but also some of the serious side effects too. The process of drug development is truly complex and labor intensive. I encountered many memorable patients during my attachment and was lucky enough to write a case report about one of these cases. Furthermore, I was involved in a systematic review as well, learning a lot about the meticulous nature of research publications. Ultimately, I managed to fulfill all of my learning objectives during my attachment at the Robert and Maggie Bras and Family Drug Development Programme.

Service Project Programme

It was my first experience designing and planning a science workshop for primary school students in Hong Kong. I wracked my brain for a project that would be interesting, fun, and educational to primary school students. Inspiration finally came to me through my research on DNA. I created a workshop covering individuality from a biological perspective where primary three and primary four children would create fingerprint identify cards that would be a visual representation of their uniqueness. I love the idea that children would come to the conclusion that each of them are special, not just in their visual appearance, but also on the inside. The project brought the concepts of how they became unique through a discussion of nature and nurture—educating them on the idea of DNA and genetics, and its interplay with the environment through a discussion of how fingerprints are formed. Fingerprints are different amongst genetically identical twins because of their unique amniotic environment. The project ended with a physical and practical session of making fingerprint mold that would have an element of crime solving CSI excitement in it.

Mentorship Programme

The purpose of the mentorship Programme is for esteemed members of the Hong Kong community to share their passions, inspirations and insights with the younger generation. The experience of predecessors is vital in informing the future career choices of the youth. I can only hope to emulate some of the vision and success achieved by these leaders of Hong Kong. It was a great honor to have Dr Yeung Man-chan as my mentor. He is a practicing ophthalmologist in Hong Kong who owns a respected clinic, with great insight on the eye-care industry and the academic and career path of a medical student in Hong Kong.

Overall Evaluation

Through the experiences granted by the Innovation and Technology Scholarship Award Scheme, I have grown much. The opportunity to do an elective in such a prestigious cancer center would have been impossible without the Scheme. The insight I gained through this academic as well as cultural exchange has helped me prepare for my future career path.

KAN Lok Ting Catherine

The University of Hong Kong
Bachelor of Science

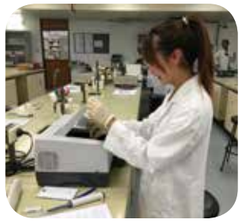
Innovation and Technology Scholarship Award Scheme provides opportunities to undergraduate students who have the passion in innovation and technology to broaden their horizons. I am honoured to be granted this award which has made my final academic year a fruitful and meaningful one. Everything that I have gained through the Scheme benefit me lifelong hence I would like to express my deepest gratitude to The Hongkong and Shanghai Banking Corporation Limited, Innovation and Technology Commission and The Hong Kong Federation of Youth Groups for granting me the chance to explore the world.

Overseas Attachment Programme

University of Sydney

Australia is ranked as the top 10 healthiest country in the world and this nation is known to be proactive in promoting health, thus I would love to learn about their strategies in improving citizens' health status. Thanks to the Scheme, I had the privilege to study at a world-leading university, the University of Sydney (USyd), for one semester.

Being a food and nutritional science student, I wish to find more ways in raising the awareness of healthy eating in Hong Kong people. Hence the module "Diet and Nutrition for Health" was a good choice. I understood better the current nutrition-related health issues in Australia and learnt about various strategies the Australian Government has adopted in promoting healthy lifestyle. I appreciated this course because it focused a lot on what can be or have already done in the society to help people choose healthy food. For example, Health Star Rating System has been introduced since 2014 in which the healthiness of the packaged foods is scored based on nutrient content. Instead of reading a complicated nutrition information label at the back of the products, the star ranking label can be understood easily by all age groups. Apart from that, the simple information on the label increases the chance of people making a right food choice in a short glimpse and it is suitable for people who live in fast pace like Hong Kong citizens.



I am also surprised by how well they have made use of the latest technology — smartphone. Nowadays, almost everyone uses smartphones. It no longer just allows you to make phone calls but gives you a lot of information hence using this channel for healthy eating promotion can be feasible. One of the health problems that the Australian would like to tackle is overweight, which is caused by the imbalance of energy input and output. In Australia, fast-food has made a huge contribution to that hence the New South Wales Government has created an app called "8700" for people to check the energy amount of fast food quickly and easily. Based on your height, weight and physical activity level, the app will estimate your daily energy requirement thus you will be aware of your intake and it can help to maintain a healthy weight. Learning about such useful app, I wondered if our Centre of Food Safety had launched something similar and I was very happy to have found one. Our app can only provide detailed nutrition information of food unless the user inputs the data. In my opinion, this complicates the steps and people will be less willing to use it.

To improve it, the Centre of Food Safety may do one more step by adding the nutrition information data of different food into the app. I wish this simplification will attract more people to use it for checking their food. As people always say, "You are what you eat", therefore knowing your food well is conducive in keeping yourself healthy.

Studying at USyd was an unforgettable and eye-widening journey. The learning atmosphere in USyd is quite different from HKU. Students raise a lot of questions before, during and even after class, which always followed by a long discussion. It proves that discussion is the best channel for sharing great ideas which I enjoyed a lot during this exchange. There is no doubt that the skills I have acquired in these four months will be very useful for my further study and career.

Mentorship Programme

A mentor is a wise and trusted adviser who gives advice and guidance and it is my great honour to be the mentee of Dr Stephen Tai, GBS, SBS, JP, Chairman of Four Seas Mercantile Holdings Limited. Although I did not have a chance to meet with Dr Tai, we have been communicating via email and he is very responsive. I am very grateful for his encouragement which gave me the confidence and strength to pursue my path. Moreover, the advice given by Dr Tai when I was struggling with the decision for overseas attachment was enlightening. I have learnt from Dr Tai how innovation and technology have improved food industry. I am truly grateful to be assigned as his mentee.

Service Project Programme

I have held two workshops in the InnoCarnival 2015 at Science Park during the InnoTech Month. The aim of this carnival is to nurture new generation's boundless creativity. This is the key to a boundless future so it is important to arouse their interests in science and deliver scientific knowledge at the same time.

I have decided to introduce the concept of "density" by including three easy and interesting experiments in the workshop. Each experiment aimed at guiding the children through the 4 steps of scientific method which are the basic techniques for investigating and discovering new idea. The "Rainbow Density Tower" aimed at encouraging children to observe and ask questions while the purpose of "The Floating Egg" and "Lava Lamp" were to lead them to experiment their guess (hypothesis) and make a conclusion. I believe encouraging children to follow the 4 steps of the scientific method in their life will not only nurture their creativity but also develop their skills in independent learning.

Through this Service Project, I have gained a lot of brilliant ideas from other intelligent awardees and from the children who attended the workshop. Moreover, at the end of the workshops, a girl came up to me and said "Science is fun and interesting and I have learnt a lot from your workshop. I will definitely come again next year". I am glad to know she is interested in science and hope that she will keep her passion in it.

Overall Evaluation

I have never expected to gain that much on the day I received the award. Being awarded has strengthened my confidence at the beginning. Trusting in myself has brought me through this journey; I have overcome all new challenges and obstacles. All the experiences have given me knowledge, polished up my life skills, and also gained me courage to step out of my comfort zone and try new things. It was not easy at the beginning, but believing in myself enabled me to go forward and the rewards were priceless.

The Scheme has broadened my horizon and widened my perspective from "local" to "global". Learning and experiencing the advanced technology of other countries have allowed me to appreciate everything we are enjoying from innovation and I wish to use this innovative insight to better Hong Kong people's health status in the future.

Last but not least, the biggest treasure that I gained through this Scheme was friendship. I am very honoured to meet a lot of successful people and be friend with other bright awardees. The friendship that I have built is not confined in Hong Kong, but overseas too. This network serves as a great channel for me to receive the latest information in my field in other part of the world. Making use of all I learnt, I anticipate the day when we all make contribution to the development of innovation and technology.

KUO Wai Yip Vincent

The Chinese University of Hong Kong
Bachelor of Engineering in Systems Engineering and Engineering Management

I am so thankful to be one of the 25 awardees in the Innovation and Technology Scholarship Award Scheme 2015. The Scheme has given me plenty of support as well as many precious experiences. After this one-year experience, I am now more enthusiastic to contribute to our society through innovation and technology. I would like to hereby express my gratitude to the organiser and sponsors and share some of my greatest rewards throughout the Scheme.

Overseas Attachment Programme

The Overseas Attachment Programme is definitely the key part of the Scheme. It is a great honour for me to be selected as an exchange student for one semester in the Department of Management Science and Innovation at University College London. The University College London, also known as UCL, is one of the world's leading multi-faculty institutions ranked 5th in the world. Before the start of my study in UCL, I had been so excited to see if there is any special way of teaching and learning. In order to enrich my learning experience, I enrolled four diverse courses in the spring semester, including two engineering management courses, one psychology course and one politics course.

In one of the management courses "Communications and Behaviour in Organisations", I have learned how to form, manage and encourage an engineering team to pursue innovation effectively. From a single character of a person to the whole team structure, it gave me the whole picture about what a team manager usually needs to do. Every week during the class, the professor would invite different experienced manager from famous companies such as Google and IBM to be our guest speakers. I was able to listen to some real life examples of team management and hence consolidated the theories that I learned from the book.

The psychology course "Language and Cognition" is the most impressive one that I have taken, hugely broadened my horizon. This course explores how the human mind and brain is able to understand and produce language in order to communicate. With language deficits and computational models that have been developed, it also looks at language processing within patients to explain these abstract abilities. After all, I was able to see how these linguistic abilities related to other cognitive and social abilities. Since UCL has a strong medical research background and database, it is the best place for me to study the human brain and cognition with real cases

Actually there is a bonus in my exchange study apart from the academic enhancement. At the floor of my student accommodation, there were students from London, China, France, Bulgaria and Egypt. It was an unforgettable cultural exchange experience to live with these people for a semester. Through cooking, playing and chatting with them, I learned to respect the cultural differences among each other. Most importantly, all of us have become good friends after the semester. This unique friendship is also a treasure that the Scheme has given to me.

Mentorship Programme

It is an honour to be assigned as a mentee of Mr Tommy Lui Sui-keung, the Executive Director of the Head of Global Freight Management in LF Logistics (Hong Kong) Limited. Although Mr Lui was not able to attend the award ceremony, he was very nice to spare his time to meet me at another lunch afterwards. During the lunch meeting, he shared some of his interesting work experiences with me and gave me a lot of advice for preparing the exchange study. Mr Lui not only introduced me to different parts of Europe, but also encouraged me to explore as much as I can during the exchange study.

Having had to study in the UK for six months, I did not have another chance to meet with Mr Lui again. However, we have communicated through emails from time to time and he invited me to visit his workplace in the future. I am really glad to get to know Mr Lui and have him as my mentor. Once again, I would like to thank the Scheme for the awesome mentorship arrangement.

Service Project Programme

The Service Project Programme is absolutely a meaningful component of the Scheme. I was responsible for organizing two science workshops for a group of primary school students. Under the main topic "Science", I have chosen "air pressure" as my workshop topic. It was because air pressure is closely related to every one of us. I believed that the children can easily discover more about air pressure in their daily life after the workshop.

In order to make my workshop more interesting to them, I came up with an idea of making a water fountain functioned by the air pressure. Since it had to be controllable and beautiful, I tried to adopt different kinds of designs and materials. From day to night, I kept thinking about the water fountain during those few weeks of preparation. Finally, I made a water fountain functioned by blowing water inside the bottle, just with a plastic bottle, some straws and some tape.

In the workshops, the children I met were all very smart and curious. They could understand the science concepts I taught quickly and responded by asking further questions. Although I had quite a lot of experiences teaching children, their enthusiasm in science made me a bit nervous. When I took out my water fountain and demonstrated to them, they were all amazed by it. I explained the principle of making the water fountain and then let them design their own one. At that moment, I was so happy to have such a chance to raise their interest in science and innovation by showing them the unlimited possibilities of applying science in our life. This precious experience encourages me to keep coming up with new innovative ideas that can make people happy, just like what my water fountain has done.

KWOK Hiu Fung Derek

The Hong Kong University of Science and Technology

Bachelor of Engineering in Computer Science

This journey is unforgettable and fruitful. The Scheme provides me with a very great opportunity to meet talented people and learn from them; the scholarship provides me with a very important source of funding for my overseas exchange programme; the mentorship and service project programme enriched my experience in learning and sharing my ideas within my field , computer science. This Scheme marks a turning point and enlightens my future path which I have never thought of before.

Overseas Attachment Programme

I was offered a chance to join an exchange programme in University College London (UCL) which is located humbly in the heart of London, the capital city of the United Kingdom. UCL is a great university established in 1826. Its mission is to offer high-level education to all talented people regardless of their origins, races and family backgrounds. Therefore, UCL provides a very diversified study environment for students. Interestingly, unlike other typical universities in the UK, its campus is not in a large contagious area but scattering around the streets in Bloomsbury and the main campus is way smaller than HKUST.

Apart from hard knowledge like what I have learnt from courses in UCL, I learned a lot of soft skills and abilities as well. I have challenged myself in UCL and taken 3 advanced level courses which go much deeper than similar undergraduate courses. As a result, the workload and stress from these courses were pretty high. To cope with these, I have learnt to plan my time well, including giving enough time for stress control in order not to be overstressed. Also, I usually got stuck in coursework and examinations because of the difficulty of the courses, but I have learnt to ask for help from professor and classmates which I seldom did in Hong Kong.

Students in UCL Computer Science are usually self-motivated and dare to take the initiative. They love to ask questions and discuss the problems and knowledge learned with professor right after the class. These are what I or Hong Kong students in general lack of. A lot of students from UCL want to start up their own business, which encourages me to think of possibilities of starting up my company in Hong Kong.

Life in London was very fruitful. I spent most of my time in London because of the heavy workload at school and that there were in fact many things I could do there. I particularly loved to travel around and walk in streets alone to calm myself down from study and think about my next move after returning to Hong Kong. Sometimes, I spent a weekend in museums to learn about different cultures and histories around the world; sometimes, I just sat in the Royal Parks, enjoyed the precious sunshine and did some meditation. I think that was my life in European style and I found it very exciting and unforgettable.

Mentorship Programme

My mentor was Professor Vincent Chan from Massachusetts Institute of Technology. I am really honored to have Prof Chan as my mentor because of his reputation in a renowned institution and the significant effect of his research on networking and communication to the modern world. Unfortunately, due to my overseas attachment destination, it was a shame that I could not have a chance to share my ideas and learned from my mentor in person. However, we communicated through emails and I have asked for some information and suggestions about having postgraduate studies (Master or PhD) and working in the United States which were my goal previously. Prof Chan gave me little insight how difficult it is to compete in the US and how the education system works in the US. Prof Chan's professional advice on higher education pathway gave me a very great chance to reevaluate my interest on higher education and future career goal, especially how to engage myself in the innovative industry in Hong Kong.

Service Project Programme

On 15 May 2016, I helped in the event of The Hong Kong Federation of Youth Groups (HKFYG), namely "Science in the Mall". It was a full-day event held at the Plaza Hollywood which attracted a lot of children to have fun while learning interesting science knowledge and facts in different booths and performances. Raphael, one of the awardees, and I held a booth and conducted various workshops for children to work on solar-power driven LED hands-on and reassemble a computer. I was in charge of reassembling a computer and introducing computer organisation.

During the preparation process, I was not quite sure about the suitable level for children so I created a pretty difficult PowerPoint material for this workshop. Thanks to HKFYG, I started to know how to prepare some interesting yet meaningful and impactful workshop contents to children. Thanks to this Programme, I gained a lot of precious chances to communicate with children. I discovered that children were way smarter than me when I was at their age and they were quite curious in electronics and computers. This is a great phenomenon because their curiosity is the key to develop innovative and technological industry.

Overall Evaluation

As I mentioned before, this journey is absolutely amazing and fruitful. The Scheme helps and supports me to shape my future and goal, to develop myself into an all-rounded person, and to encourage me to dare to imagine the future. The Overseas Attachment, Mentorship and Service Project truly encouraged me to work with the innovative and technology field.

"Dare to think" is my favorite line these days. I would also like to tell every student who wants to work on innovation and technology to keep this in mind with this line. Technology and innovative ideas will not come out from nothing without paying any effort. Give a deep thought on what you truly love and interested in. The path will not be as easy as you may foresee, but if you are dare to take the risks and challenge, you may become a successful person in the innovation and technology field.

LAI Hei Ming

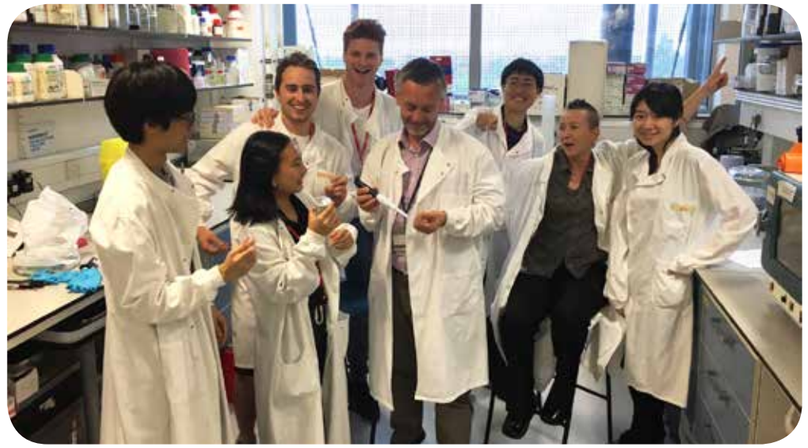
The University of Hong Kong
Bachelor of Medicine and Bachelor of Surgery

With the help of the Innovation and Technology Scholarship Award Scheme 2015, I was able to fly to the other side of the Earth to have a life-changing research experience in Professor Steve Gentleman's lab in the Department of Neuropathology, Faculty of Medicine, Imperial College London (ICL). With good preparation in Hong Kong, I was given extraordinary freedom there to plan, design and direct my own research on the cutting edge of three dimensional histology, which has only started to emerge 4 years ago. Having experienced the thorough research process, I am now more confident in my future research career and directions.

So what is three dimensional (3D) histology? Histology is the study of tissues at the microscopic level. However, tissues are not transparent, therefore for centuries histologists have been cutting up tissues into sections and mounted them on slides to visualize the morphology after staining. As one can imagine, cutting 0.007mm-thick slices requires great care, and can potentially lead to losses of sections that makes complete survey of tissue morphology difficult. 3D Histology takes a different approach; by making tissue transparent and using laser microscopes, one can focus up and down the tissue and selectively view a thin plane of tissue spanning the whole thickness of the tissue, i.e. optical sectioning instead of physical sectioning of the tissue.

I have been practicing on how to turn mouse tissues transparent since April 2015 in a Hong Kong research laboratory, and completed a whole experimental cycle just before the perfect timing came when the IT Scholarship offered me to go to ICL to continue my research, but this time on human tissues! I started my work in ICL in June 2015, Professor Gentleman and Alan, a PhD student from the lab, gave me huge confidence and faith to let me work on my own. I had the absolute freedom to work on whatever I was interested in, with the supply of virtually unlimited human brain tissues. Before my departure, Prof Nancy Ip, my mentor under this Scholarship Scheme, also provided me with courage and faith in myself to conduct my own research study. This enable me to develop my own insights in research, orient my own directions, and finally getting a new vision on how the field should move on further.

With a passion in improving the contemporary tissue clearing and 3D histological techniques, I translated and optimized the most widely used protocol from mouse to human tissues, forming the foundation to apply these animal-based techniques to study human neuroscience. The most exciting thing happened during my last week of my stay. I have been failing with a 3D histological staining method for the past 2 months, which hindered me to solve a particular microcircuitry in 3D in human. On the very last day of my attachment, with a bit of hope and spirit of not giving up, I put the "failed" sample under the microscope and gave it one last glance, and there it was, and it has always been there: large, beautiful nerve cells with extensive branches all over the surrounding area. Finally, I made my first step towards my target in mapping a human microcircuitry. Nonetheless, this represents the first time ever in history where these scarce nerve cells have ever been capture in 3D under the microscope, and its interactions with surrounding nerve fibers clearing demonstrated, in a brain with Parkinson's disease. This stack of images provided huge gratification in accomplishing my own goal of understanding the disease pattern and its cause.



Despite the significant development of my understanding and theories towards this new field, this has yet to be verified and confirmed. When I got back to Hong Kong, I carried out further research on a part-time basis in my supervisor Professor Wutian Wu's laboratory. Countless failures in experiments, they were the real hope for my advancement in understanding the nature of tissue clearing and physicochemical basis behind the phenomena. I was never so thankful for my supervisor, Professor Wutian Wu, to have complete trust in my vision and abilities to let me fully develop my theories on repeatedly carrying out negative experiments. Through these negative data a model of how these mysterious chemical agents work came out, and that wonderful day came,as I put a piece of mouse brain into the solution, and voilà – it came out nice and transparent. It might look simple to others, or perhaps a little bit magical with just a single step immersion of a tissue into a solution and coming out transparent; but it meant so much to me, a whole year of effort, a mutual trust between my colleagues and me, a realization of the truth out of the mist of conflicting opinions in the world, I burst into tears as I witnessed the whole process happened. The thrill of being the first in visualizing the truth, will forever be in my heart as the primary driver in my everlasting quest for knowledge and learning.

In the last month of the Scheme i.e. June 2016, I returned to Professor Steve Gentleman's lab at ICL to translate my year-long results and findings to human tissues again. With massive application of my technique in chunks of human brain tissues that was the largest, oldest and most difficult to work with due to poor sample quality, I became the first to see several unknown population of noradrenergic cell groups within the human midbrain, their morphology, identity, and dense network has never been known due to the above-outlined problems with conventional histological methods. I saw a group of cells in the human cerebellum that has never been described before, with strangely looking appearances that confused my supervisors as they saw it. Alan and I became the first to visualize what the blood-brain barrier looks like in 3D in a human brain tissue that was harvested 50 years ago; and the first two persons to see the nucleus basalis of Meynert in 3D. This has been made possible due to the development of the novel tissue clearing formula in Hong Kong over the year, and the development of a rapid staining method within the last month of my internship. The stunning map we generated, would have huge implications for the study of dementia in neurodegenerative diseases, and could potentially revolutionize how future neuropathology would be conducted.

In summing up, the Innovation and Technology Scholarship not only allowed me to achieve academic excellence, but also allowed me to develop and grow as a whole person. This report would not be complete without me taking this opportunity to express my most sincere gratitude to all the people who have helped me to forge meaning and build identity. Including Prof Wu who always reminds me to take care of myself and not to get overheated by excitement; Prof Gentleman who guided me to my own niche; Prof Nancy Ip who gave me encouragement and faith in my abilities; Li Heng, the best PhD supervisor I have ever come across, who always gives me inspirations and support me; Alan, who is always encouraging and respectful to all people; Natalie who always bears with my fluctuating emotions and be there loving me. Dawn, David, Alan Chong, Francis, Jeff, Michelle, Dorcas, my biggest luck in my life to have met them, the most trustworthy and truthful friends one can ever imagine; Dick, Ken, Hugo, my dearest roommates who kept me alive; Phil, an enthusiastic companion in our common quest for scientific ideals and also a personal counselor; Venice who took care of my most depressed and solitary period in the first part of my internship; Harry who has been assisting me diligently in all aspects of work when I was overwhelmed with heavy workloads; last but not least, my family and in particular my dad, a lifelong friend who is the sole purpose for me to continue to pursuit my everlasting quest for the meaning of life.

LAM Phoebe Cheuklam

The Hong Kong University of Science and Technology
Bachelor of Science in Biochemistry and Cell Biology

It is my great honour to receive the Innovation and Technology Scholarship Award. Thanks to the Scheme, I have developed a stronger passion towards science, established a more specific career goal and welcomed challenges with confidence and an independent mind. By consulting my mentor and interacting with kids as well as fellow awardees in my service project, I further experienced how science and technology could be a universal communication tool, drawing people together with similar interests and strengths, regardless of their age, gender, ethnicity and beliefs.

Overseas Attachment Programme

In Term 2 (2015 to 2016), I was admitted to the University of British Columbia (UBC) as a visiting exchange student under the Faculty of Science. Located at the green and beautiful city of Vancouver, UBC is famous for its vast and adorable campus, as well as its cutting-edge research in science and engineering.

Throughout my four-month studies, I enrolled in five undergraduate courses, two of which were related to genetics, a booming research area in life and medical sciences. One of the two examined the fundamental genetic principles including mutation, linkage, complementation, gene interaction, as well as many applications of them. I especially liked how they provided us with lots of reading quizzes and assignments to practise on, which ultimately trained us to become masters of data analysis and logical predictions, capable of putting forward hypotheses in unknown situations. I also took pleasure in witnessing how the principles I have learnt proved themselves useful in my research projects in Hong Kong this summer.

The three remaining courses which I took were about wine science, natural disasters, and symbolic logic respectively. The one on symbolic logic reminded me of how prudent it is for a scientist or innovator to have logical thinking, no matter when you are explaining a phenomenon, investigating a mystery or constructing a hypothesis. The other two courses, on the other hand, demonstrated a much wider range of application of science and technology. I was grateful to learn how earth science and engineering could be used to save millions of lives during natural disasters; and was impressed by how genetic engineering could be applied to build better grape and yeast strains for wine manufacturing. These altogether showed me how versatile scientific knowledge could be, and has motivated me to work harder on my area of interest to bring an even greater level of benefit to the people around me.

Local Internship Programme

Thanks to the arrangement by the Scheme Secretariat, I was assigned to work as a lab technician at the research laboratory of Lee's Pharmaceutical (HK) Limited from June to August 2015.

At first, I was only responsible for preparing standard solutions of medicine to analyse its content and impurities, controlling and maintaining the High Pressure Liquid Chromatography (HPLC) machines, recording and analysing experimental data and also taking care of other laboratory apparatus. After some time, I earned trust from my mentors and supervisors and was fortunate enough to be involved in two research projects. One about developing an antibiotic; and another about manufacturing a lotion which suppresses the side effects of a cancer drug. I was asked to write reports on how to maximise the production efficiency and how to control the product quality at each production stage.

Putting official duties aside, I am very thankful for being able to experience working at the Hong Kong Science Park. It is not common for a city to have a centralised hub for various scientific and technological companies to station their factories and research laboratories. They are so closely connected that no geographical constraints would hinder their intellectual communication, and so resourcefully condensed that overseas scientists are attracted to implement their research projects there. Now I have grown so attached to the Park that whenever international conferences and symposiums are held there, I make every effort to attend and revisit the place.

Mentorship Programme

It has been my honour to be mentored by Professor Paul Yu, the highly respected Associate Vice Chancellor for Research Initiatives and Professor of Electrical and Computer Engineering at the University of California San Diego. Prof Yu is an outstanding researcher and a world leader in telecommunication networks and photographic.

In our email conversations and dinner meeting, we discussed mostly about my career goal and future orientation. I told him about my aspiration to be a medical doctor or a pharmacist to serve at the front-line of the healthcare industry; and that after I graduate, I will apply for both local and overseas medicine and pharmacy programmes and hope to acquire a professional qualification after I graduated. He also encouraged me that if in any case I did not succeed, I could still adopt a research career in life sciences to investigate new therapies or medical technology to improve the health and lifestyle of human beings at large.

Even though Prof Yu does not specialise in the same area as I do, he knows a lot about the research strengths in different Universities and the career paths that I can choose. He also suggested the challenges I would likely to face. I still remember very well about his experience of being discouraged by professors during his undergraduate years and how he still believed in himself and stood up to fight for excellence. Ultimately he became one of the most prestigious professors in California, US. From Prof Yu, I learnt that criticism can in a way strengthen us and encourage us to breakthrough, which are useful tips for my future career.

Service Project Programme

The Service Project Programme was among the most rewarding experience in the Scheme. Last year, George Chan, an engineering student from the City University of Hong Kong and I have co-organised a science workshop about atmospheric pressure and application of its theories for primary school kids. We performed hands-on experiments with the kids and their parents, while explaining to them the scientific principles behind. We also held some activities to present to them how the relevant concepts could be employed in daily life, such as squeezing a bottle and making use of the negative pressure to suck out the egg yolk from the egg white when cooking. In the end, I shared with the kids about the qualities of being a good scientist and researcher and encouraged them not to give up because of failure. I believed that many of the families enjoyed the workshop and subsequently aroused their interests in science and technology.

Given the trend towards interdisciplinary development in science, I was very grateful for the platform created by the Scheme for us to exchange academic knowledge and opinion across different fields. Besides, to fathom the countless unknown science principles, it is commendable to start arousing children's interest in science at an early stage and to nurture more passionate youths into successors of knowledge and research. I now see promoting and advocating the spirit of science a duty incumbent upon me. I also believe that The Hong Kong Federation of Youth Groups will not disappoint the general public in offering more fun and inspiring workshops in the future.

Overall Evaluation

On the whole, the Scheme has given me tremendous financial support for my academic exchange programme at The University of British Columbia, granted me the privilege of working at a great pharmaceutical company, introduced to me a high-achieving and caring mentor, and bestowed me a group of good friends with similar passion and goals. Without the Scheme, I would not have added so many colours throughout my time in university and might not have grown so attached to finding a job related to science. Therefore I would like to take this opportunity to thank the Innovation and Technology Commission for supporting this Scheme, The Hongkong and Shanghai Banking Corporation Limited for sponsoring this Scheme, and The Hong Kong Federation of Youth Groups for organising it.

LAM Ping Hei Pensi

The Chinese University of Hong Kong
Bachelor of Medicine and Bachelor of Surgery

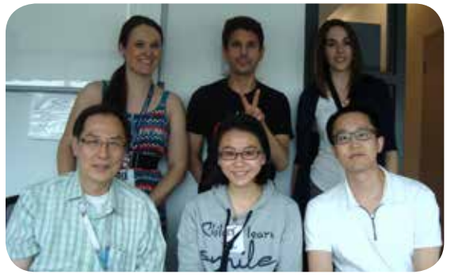
Overseas Attachment Programme

I would like to express my deepest gratitude to Professor Tony S K Mok, Professor of Clinical Oncology at The Chinese University of Hong Kong, who sought attachments in the University of Toronto and the University of Sydney for me to pursue my career and personal development.

In summer 2015, I spent two months attaching Professor Ming Sound Tsao's lab at the Princess Margaret Cancer Centre, a top cancer research institute in the world. Prof Tsao is a pathologist-scientist and Professor at the University of Toronto. His research team works mainly on lung cancer and pancreatic cancer: (1) tumor cell-stroma/matrix interactions (2) onco-driving genes and pathways, and (3) resistance mechanisms against targeted therapies.

Personally I am interested in research of cancer diagnostic biomarkers in blood, especially circulating tumor DNA. Yet other projects related to cancer and biomarkers excite me as well. No matter what kind of cancer research I may pursue in the future, it is still fundamental to understand its pathology.

I had a fruitful time shadowing different experiments. One of the astonishing experiments I observed was creating an orthotopic lung cancer mouse model with surgery tools. Those skillful hands were adept at sewing a piece of tumor that is smaller than a pea, onto the lung of the animal model. I also visited the research pathology lab regularly to learn the technique to stain the markers on different cancer cells.



I did a literature review on epidermal growth factor receptor (EGFR)/ tyrosine kinase inhibitor (TKI) sensitivity gene signature. It was inspiring to learn that certain mutations, gene expressions or copy number change may happen characteristically in patients with EGFR mutation. This may imply more understanding in lung cancer pathogenesis especially on genetic level, potential biomarkers that can serve for diagnostic, prognostic, treatment-predictive or monitoring purposes.

I did a presentation on how mutations of a protein ligand called neuregulincan act on the epidermal growth factor family (EGF family) and the effect of TKIs on neuregulin-mutant lung cancer. There are few cases of neuregulin-mutant lung cancer, as neuregulin can potentially activate and regulate various members of epidermal growth factor family (EGF family). This piece of knowledge may help to understand potential effects of EGFR TKI and signaling pathway when upstream signals of EGFR are modified. Presenting research ideas is beneficial for my multi-dimensional thinking, literature review, analytical, and presentation skills.

Apart from lab exposure, I also spent some time shadowing Dr Natasha Leighin in the Thoracic Oncology Outpatient Clinic. Clinical senses that can correlate microscopic or molecular details with clinical picturecan facilitate me to gain insights from lung cancer. The two-month trip earned me both clinical and laboratory exposure, killing two birds with one stone.

My second overseas attachment took place in Summer 2016 at Chris O'Brien Lifehouse, the first integrated cancer center in Australia. It is a non-profit public benevolent institution, serving both private and public patients. My supervisor was Professor Michael Boyer AM, a medical oncologist who serves as Clinical Professor of Medicine in the University of Sydney. He is also the Chief Clinical Officer of the Chris O'Brien Lifehouse.

I gained exposure to a variety of cancers in medical oncology clinics. The doctor-patient relationship was really close there and doctors could easily recall patients' details. The Radiation Oncology Department also welcomed me to observe radiotherapy assessment and planning. I focused more on the treatment there, instead of looking into the overall picture and symptoms while I was in Toronto. I gained more understanding on the running of trials and met many patients in clinical trials, especially immunotherapy. I consider trial as a tool to realise technology in bedside setting.

As the turnover rate in the wards is not high, I could follow the patients more closely and observe their disease progression, and also how to manage patients in ward setting. Lifehouse adapted an integrated approach to take care of the patients, e.g. physiotherapy, pain management, palliative care. The one-stop service reminds me that beside the disease itself, we should watch out more on different areas of the patients.

I attended heaps of meetings, including multi-discipline meetings (MDT) with doctors from different specialties discussing patient cases; Journal Club which usually has two doctors presenting recent publications or updates in their fields. It was always enjoyable to get myself updated with the latest knowledge and learn how to criticise bias and weaknesses of studies.

These two attachments broadened my horizon and trained my independence and social skills. I wish to continue my research on cancer or other fields in the future. Frankly, I enjoy doing research as it is challenging to go through logical thinking process. I still have tons to learn and hopefully one day, I would find myself to be competent and capable of helping those in needs.

Mentorship Programme

As a medical student with passion in medical research, I cannot be more grateful to have Professor Paul Tam as my mentor. Prof Tam is well-known for his contributions to pediatric surgery. His roles include Provost and Deputy Vice-Chancellor, Li Shu-Pui Professor in Surgery and Chair of Paediatric Surgery at The University of Hong Kong.

We kept in touch through emails and Prof Tam was very willing to reply and provide advice. I anticipate more upcoming exchange of ideas and meetings so I can be further inspired by my mentor's career path, research interest and philosophy of life.

Service Project Programme

Working with Xie Fei Phil, one of the awardees, we launched workshops titled "Catch Your Breath" in InnoCarnival 2015, targeting children and parents. We taught them simple anatomy, function and pathology of respiratory system. And we also demonstrated proper ways of wearing masks through games. Participants also had hands-on experience of creating simple lung model with plastic bottles and balloons, and learnt the concept of pressure and volume change.

The satisfaction derived from the excited faces of children, small hands up in the air asking questions and kind feedback shall serve as my great source of passion to arouse interest of innovation and technology in our society.

Overall Evaluation

I would like to express my heartfelt thanks to the sponsors and organiser of the Scheme, which have helped me greatly in my academic and personal development. The unforgettable journeys to the world-renowned institutes gave me insights into clinical and bench-side cancer research and integrated cancer management.

"Every great dream begins with a dreamer. Always remember, you have within you the strength, the patience, and the passion to reach for the stars to change the world."- Harriet Tubman

I may not become great enough to change the world but at least for now, I know I have developed an interest in doing research. The Scheme has certainly prepared me to reach for the stars someday.

LAU Chun Ho Alvin

The Hong Kong Polytechnic University
Bachelor of Science (Honours) in Physiotherapy

The granting of Innovation and Technology Scholarship Award in spring 2015 marked a remarkable milestone in my life's journey. This is not only an award that just only offers financial support for overseas activity but also provides a series of components that you can never think of.

Overseas Attachment Programme

Through the Scheme, I embarked on a journey of discovery at King's College London and St. Michael's Hospital of University of Toronto.

King's College London

In late July 2015, I have been to King's College London (KCL) in the United Kingdom for a three-week summer school programme. Among all those interesting and attractive health-related modules provided by the summer school, the theme of the course that I have chosen was Healthcare and Technology. This module enabled students to have an overview on some key aspects supporting medical technology.

The entire module was organized by Dr Kawal Rhode, who was an enthusiastic and wholehearted teacher and researcher in KCL. His team dedicated three weeks to take our whole class through the world of medical technology. One of the key features of this module would be the practical sessions of different technologies, such as X-ray and medical robotics. As a student in physiotherapy field, I would not have such valuable chance to get in touch with all these fascinating appliances if I have not applied for the summer school. This experience allowed me to further understand how different professions contributed to a holistic healthcare approach to every patient.

Apart from the lectures and practical sessions, academic visits to different facilities were also arranged. Various medical models and history of medicine were demonstrated in the library and museum. It was rare to see such kind of real models in Hong Kong. Under the guidance of Dr Rhode, we understood how technology was important to medical care and what were thought to be impossible in the past was made possible with the technological advancement today. The tour of gait laboratory was an invaluable visit as a physiotherapist-to-be as well.

St. Michael's Hospital of the University of Toronto

In spring 2016, I had the honour to work in St. Michael's Hospital (SMH), one of the best teaching and research hospitals in Toronto, for a six-week overseas placement. With some clinical placement experience in Hong Kong public hospitals, I was so excited before the departure to embrace the brand new experience and Canadian practice over Toronto.

With the subtle difference in nature of the guidance and supervision between two education systems, I was given much more autonomy to allocate my time in managing patients throughout the day in SMH. This was quite a challenge to me in adapting to such kind of freedom at the beginning of placement, since most of the work in Hong Kong is arranged in an organized manner by the clinical educators. However, I soon found myself well-fitted in the practice here, and this was a good opportunity for me to prepare to be an independent physiotherapist in the coming future.

Apart from enormous feedback on my daily performance given by my preceptors, they even squeezed time to conduct extra tutorials specifically on the area of academic knowledge and practical skills that I was not that familiar with! This can hardly be done in Hong Kong and I found those tutorials in Toronto really useful to me for revision.

Apart from hands-on routine practice, various forms of clinical attachments and inter-professional education were given. I was very fortunate to have chances to attend some of the courses for postgraduate students working in SMH and learn much more about the latest trend of clinical practice and communication skills in their clinical settings. Interdisciplinary work is essential in contemporary medical sector and this is one of the key issues North America clinical environment is working on. Although this is still not the compulsory topic covered in Hong Kong clinical students' curriculum, this will be the global trend of patient caring. I am so grateful to gain such fruitful learning experience.

Another invaluable visit would be the heart surgery observation. Knowing the procedure of heart surgery allows me to be more familiar with the rationale of pre-operational and post-operational care of heart surgery patient in physiotherapy field.

Mentorship Programme

It is my great honour to have Professor Timothy Kwok, Professor in Department of Medicine & Therapeutics of CUHK, to be my mentor. This is a precious learning opportunity for me to have discussion about geriatric issues with him in Hong Kong at the award ceremony and through email communication. The work of physiotherapist in the field of geriatrics is vast and still growing in foreseeable future. My learning from Professor Kwok surely is not limited to this year but an ongoing learning process from my mentor.

Service Project Programme

In fall 2015, I started preparing a workshop for students ranging from primary four to six, aiming to raise their awareness and interest towards learning of science in their daily life. The workshop was held in one of the HKFYG S.P.O.T.s in Fanling and at the InnoCarnival 2015.

The fundamental aim of my workshop is to grow the concept of fun learning and "science can be everywhere in your life" in the mind of Hong Kong pupils. Without the motivation to learn and discover lively scientific phenomenon in daily life experience, it is never easy to be innovative if one cannot manipulate the basic science principles freely. Therefore, to sow the seeds of innovation into the hearts of our future pillars of society, I believe helping students to build up habit of learning science out of their own interest is of utmost importance. After holding some workshops, I discovered that a lot of children in Hong Kong are very innovative and eager to learn.

Overall Evaluation

I would like to express my deepest gratitude to all the oganiser, sponsors and staff members of the Innovation and Technology Scholarship Award Scheme for giving me such a life-changing opportunity. Without their great support throughout the entire year, I would not be able to accomplish the tasks that I have never thought of before. Lastly, the Scheme allows me to realise that innovation is everywhere.

LAU Wing Man Angel

The Hong Kong Polytechnic University
Bachelor of Science (Honours) in Physiotherapy

I am very honored and privileged to be selected as one of the awardees of the Innovation and Technology Scholarship Award Scheme 2015. The Scheme has given me numerous eye-opening and invaluable opportunities, helping me see things in new perspectives.

Overseas Attachment Programme

With the generous support from the Scheme, I was able to spend a month at the prestigious Yale University. Located in the state of Connecticut, New Haven, Yale University is where people with diverse backgrounds converge to mutually influence and enrich life as well as the world. The university's 5-week summer school provided a dazzling array of courses to choose from. I decided to try something new and enrolled in two social sciences courses – Forensic Anthropology and Multiculturalism and the Ordered Society.

Forensic Anthropology is a very hands-on course – lectures were supported by practical sessions and case studies. It builds up students' knowlege of basic skeletal anatomy and the use of recovered human skeletons, so as to learn more about a deceased individual, for example their age, sex, ancestry, time of death, or diseases they suffered. We visited the Henry C. Lee Institute of Forensic Science at the University of New Haven. Conceived by Dr Henry C. Lee, one of the world's leading forensic scientists, the institute houses a high-tech forensic room with virtual technology to bring fascinating cases into life. There were a number of other interesting class activities – we made dental casts of our own teeth to apply concepts we learned about odontology; while the facial reconstruction project required us to use clay to sculpt the facial features of a skull.

The other class I took, Multiculturalism and the Ordered Society, was in seminar-style. Every class session was filled with discussions and debates on the American criminal justice system, related sociological concepts and current social issues. Each student had to prepare assigned readings for one class meeting, start the seminar by presenting a critique on the materials, then all of us expressed our views and raised questions. There was a good mix of students of different races. This allowed us to explore opinions from various backgrounds and cultures. My peers were active in class and eager to share their personal views and experiences, most of them were thought-provoking.

One thing that impressed me was the learning environment at Yale. I still remember our last seminar session, where we sat in a circle on the lawn, taking turns reviewing our favorite texts. (Just a side story, all the while indulging in ice-cream on the professor!) For the final paper, we were allowed to write on a self-chosen topic. I absolutely loved the freedom while the professor was more than willing to give guidance if necessary. Group work was much emphasized throughout the courses. For example, the final assessment of the Forensic Anthropology course was in the form of a crime scene investigation. In groups, we examined skeletal remains at a crime scene, deduced their biological characteristics, and developed a demographic profile of the individuals. I thoroughly enjoyed the style of teaching I experienced at the University.

While students from Western countries may be perceived as 'party animals' by some, that is just one facet of them. Some of them do seize the chance to travel during the weekends to places nearby such as Washington D.C. and New York City, but it is not uncommon to see them study late into the night in the library.

Even though it had been a short stay, I am grateful to have caught a glimpse of the American life and academic culture. I learned that one cannot just swallow information, but should be critical and inquisitive, which are essential qualities to have today, as a vast amount of knowledge and information are being generated at an amazing speed every day. I believe having an innovative mindset benefits our society in multiple ways.

Mentorship Programme

I am very fortunate to have Dr Paul Tse, specialist in orthopedics and traumatology, as my mentor. Prior to my visit to Yale, he gave me some advice regarding living and studying in the United States. Dr Tse was very generous to allow me to visit the physiotherapy clinic at the orthopedics and rehabilitation center where he works. I shadowed several physiotherapists upon getting their clients' consent. I am grateful for having the opportunity to learn how some new equipment works, and more importantly, witness how clients' conditions improved after treatment.

Service Project Programme

A significant part of the Scheme is the service project programme, of which the aim is to arouse the interest of students, age from six to nine, in science and technology.

I teamed up with Mr Samuel Li, a fellow awardee, to design and conduct a workshop called "Insulating Flask". We delivered the workshop several times at the InnoTech Month Roadshow at City Plaza, and the InnoCarnival at the Science Park. The activity introduced the three methods of heat transfer. Participants, which were all primary school students, were guided through the science behind the three methods by looking at models, observing experimental setups, and feeling with their hands. They were active throughout the workshop, and when asked to come to the stage to observe, were very keen on getting an up-closed look at the experiment! They were enthusiastic in answering our questions too. When asked to design their own insulating flask, it was evident that the young minds were full of creativity. These science workshops are definitely a great way to expose children to the amazing world of science and instill in them an interest in science and technology.

I realised that organizing a science workshop from scratch for primary school students is not as simple as it might look. One has to generate ideas simple yet interesting enough for the students, and to illustrate concepts with models, experiments and activities that should be attractive and safe. Nevertheless, it had indeed been a rewarding experience to see how children listened and worked attentively.

Overall Evaluation

Participating in the Innovation and Technology Scholarship Award Scheme has been nothing but a truly fruitful experience. This journey made me become a more independent and active learner, and enhanced my passion towards learning. I would like to express my greatest gratitude to The Hong Kong Federation of Youth Groups, Innovation and Technology Commission and The Hongkong and Shanghai Banking Corporation Limited, and all personnel who have worked hard to make the Scheme possible.

LEE Oi Yan Sera

The University of Hong Kong
Bachelor of Dental Surgery

It is an honour to be selected by the Innovation and Technology Scholarship Award Scheme 2015. This one-year programme allowed me to participate in the Overseas Attachment Programme, the Mentorship Programme and the Service Project Programme. These were truly eye-opening and memorable experiences one could ever ask for.

Overseas Attachment Programme

Studying in London has long been my dream. I was very privileged to be granted an opportunity to enroll in the three-week Undergraduate Summer School Programme organised by King's College London (KCL).

King's College London

The Summer School experience at King's was absolutely a life-changing one. During my stay in London, there was not a single day that I was not learning new things, feeling excited and most important of all, evolving as a person. I enrolled in the module of Healthcare and Technology. The course covered the basics and developments of medical imaging, medical simulation and robotics through interactive lectures, hands-on practical sessions and field trips. I learnt the basic science and practical applications of several types of diagnostic imaging, such as X-ray, ultrasound and magnetic resonance imaging (MRI). I was also introduced to the mechatronics systems behind the technologies and the biophysical modeling of human organs. As a dental student, I found this course very eye-opening because most of the topics were actually not covered in my undergraduate study, yet they are extremely important in the healthcare system. Many of these areas contribute to disease management and improvement in patients' quality of life. This was truly an intellectually provoking learning experience I have ever had.

Most of our lessons took place in two of the major NHS teaching hospitals with profound history, the St. Thomas' Hospital and the Guy's Hospital. These two hospitals are world-leading research centres, equipped with excellent research facilities. Our group had a chance to visit the latest interventional cardiac catheterisation laboratory, where cardiac intervention that once required open-heart surgery can now be carried out in a mininal invasive approach, greatly reducing the chance of infection and recovery time. This is an excellent example of how human beings can benefit from the development of healthcare technology.

Inspiration from The Tutor

I was very lucky to have Dr Kawal Rhode as our course tutor, who kept giving me new inspiration and motivation. Dr Rhode is a knowledgeable cardiac surgeon and an enthusiastic researcher in image-guided intervention. He also has a great passion in inventing medical robots in the hope that such technology can be used in catheterisation laboratory for heart surgery in the place of physicians to minimise their exposure to ionising radiation. His determination has driven him to the study of robotics and engineering. Dr Rhode's passion and encouragement inspired me to challenge myself by building binary dice with an Arduino and LEDs. From this whole new experience, I realised that one's ability has no boundaries. The key to success is not to limit our potentials.

Studying at King's College London was absolutely a fantastic and astonishing adventure. I was inspired to relate the subject to dentistry and pursue further study in this field in the future.

Mentorship Programme

I am honoured to be one of the mentees of Professor Timothy Tong, JP, the President of The Hong Kong Polytechnic University. Prof Tong is not only an expert in mechanical engineering, but also a friendly, humble and open-minded mentor. Having devoted in education for years, he enjoys exchanging views with his students through lunch meetings. In spite of his busy schedule as a university president, Prof Tong is generous with his time and resources. It was very kind of him offering many chances to meet and every meeting was enlightening and inspiring. Prof Tong shared his childhood and college life with me. It made me realise that all the resources and opportunities that we have should never be taken for granted. Our generation enjoys a much more stable economic and social environment that enables many of us to pursue tertiary education without financial concern. Inspired by the story of Prof Tong, I am more grateful for every opportunity that I have got.

Prof Tong also organised a lunch meeting for all of his mentees and other awardees from the same University to gather together. It was a precious opportunity for me to network with other students from diverse backgrounds. As we discussed about the future of Hong Kong, Prof Tong expressed his genuine concern towards the challenges that the younger generation is facing. He offered valuable advice and encouraged all of us to stay positive. He urged us to turn our dreams into action and overcome any challenges ahead.

I am grateful to have Prof Tong as my mentor, who has been very encouraging throughout the year. I would like to express my gratitude for his generous support and invaluable advice.

Service Project Programme

The goal of education is not only to equip someone to pursue their dream, but also to encourage them to be life-long learners, to promote and enlighten civic responsibility that everyone has a chance to give back and to make the society a better place. The Service Project Programme offered us a precious opportunity to apply our knowledge and skill regarding science and technology to serve the community. I was honoured to be invited to organise a workshop in InnoCarnival2015.

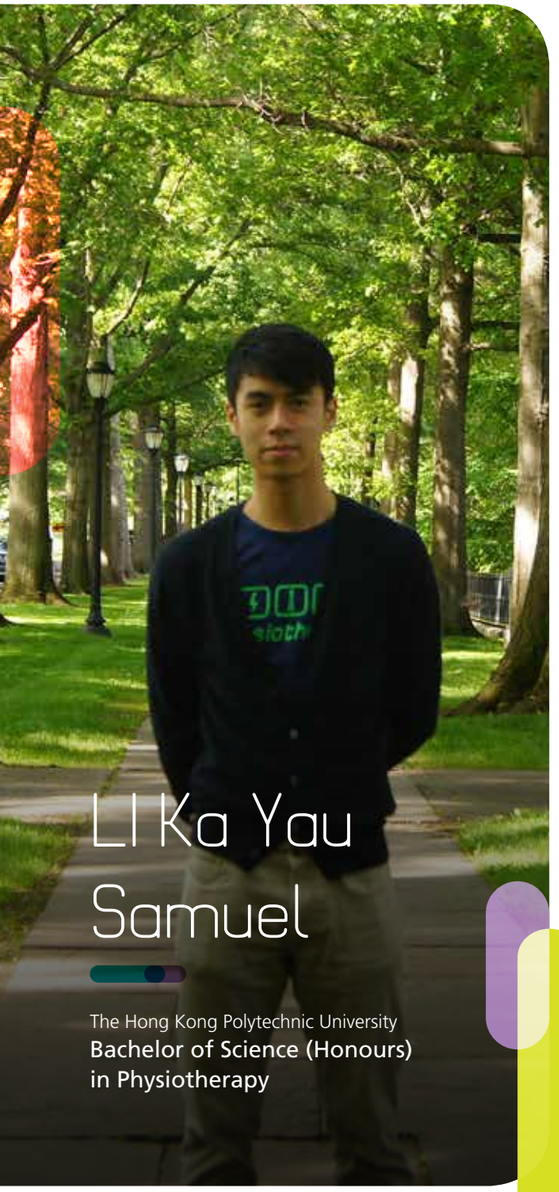
I held two workshop sessions titled "Gypsum Finger Model Making Workshop". Those were parent-child workshops, targeting children aged from ten to twelve. The workshops aimed to introduce various dental materials and related application to the public and to reduce children's anxiety by providing early access to a different scope of dentistry in an entertaining way. Each workshop comprised three parts, namely short introduction to dental materials and demonstrations, hands-on experience and a quiz session.

Alginate and gypsum were introduced to the participants. They used provided materials to make their own finger models. The general physical and chemical properties of the materials, together with their importance in disease diagnosis and treatment planning, were explained during the workshop. I am also very thankful that other awardees offered their generous help and support to facilitate the workshop.

Apart from arousing children's interest in science and technology, I have also benefited academically and personally. The preparatory work provided me with an opportunity to revise all the basic scientific topics that were taught long ago and reminded me that science is everywhere. We are benefited from all kinds of inventions and technology without even noticing. Moreover, I was surprised by the eagerness of the children. Albert Einstein once said "the important thing is to never stop questioning", which is the fundamental part of scientific research. It is only by being intensely curious and eager to learn can we generate new ideas and put them into practice. Science and technology in medical and dental fields keep changing and updating. I shall bear this in mind and will never stop learning so that one day I could contribute to dental research and benefit our society.

Overall Evaluation

I would like to take this opportunity to express my heartfelt gratitude to The Hong Kong Federation of Youth Groups for organising the Scheme, the Innovation and Technology Commission and The Hongkong and Shanghai Banking Corporation Limited for the generous support, so as The University of Hong Kong for the nomination. Being one of the twenty-five awardees granted me a rewarding and life-changing experience. Not only did it realise my dream of studying abroad, but also gave me a chance to serve the community with the knowledge and skills that I acquired. Furthermore, I met my life-long mentor who offered me a lot of useful advice



LI Ka Yau Samuel

The Hong Kong Polytechnic University
Bachelor of Science (Honours) in Physiotherapy

It is my great honour to be awarded the Innovation and Technology Scholarship Award. Thanks to the Scheme, I was able to participate in a series of initiatives, including Overseas Attachment Programme at Yale University, Mentorship Programme and Service Project Programme at both Taikoo City Plaza and Hong Kong Science Park. Over the past year, I learnt the biological basis of neurological processes, the current innovation of USA energy generation and conservation technique. Not only had I explored the current trend of physiotherapy practice, I had also been learning the criteria of being a competent and trustworthy clinician, and further promoting the next generation's interest towards science and logical thinking. All this fruitful experience has fostered me to develop new perspectives regarding thinking style, learning method and understanding of current clinical practice.

Overseas Attachment Programme

The first component of the Scheme that I participated in was the Overseas Attachment Programme. With the strong financial support from the Innovation and Technology Scholarship Award Scheme, I was able to attach to the Yale University, one of the most renowned universities worldwide in terms of education, research, alumni and heritage. There, I took a neurophysiology course and an engineering module.

As a physiotherapist-to-be, a profession whose experts in the clinical practice and research of neuro-rehabilitation, I spent a summer at Yale University studying neurophysiology to complement, consolidate and bombard the clinical neurology knowledge foundation that I acquired from my undergraduate education. The neurophysiology course at Yale University was mechanism-based with huge emphasis on the explanation of various phenomenon via series of neurobiological processes. The teaching materials were developed from the works of prominent researchers and Nobel Prize winners. The key success of the course was that the neurophysiology teacher at Yale, Dr Kundel, always encouraged students to stay curious at various physiological processes. With his excellent guidance, we developed the ability to design experiments to investigate our interested neurophysiology process independently. He was very good at guiding students to gain well understanding, rather than to recite events of neurophysiological processes. Also, Dr Kundel was passionate in motivating student to preserve when facing challenges. This method of learning and being perseverant are importantly useful to my studies and clinical practice.

One of my favorite lecture topics in the neurophysiology course was the "Memory and Learning" which he provided detailed explanation of all the processes of nerve sprouting and regeneration. Comparing to my undergraduate education, the lecture provided a much in-depth analysis of the events during neuron-spasticity and neuro-regeneration. The lecture as well as the findings from his previous studies gave me huge insight in understanding these neurophysiological processes. It greatly benefitted my future clinical practice or possible researches related to motor learning, nerve regeneration and neuro-plasticity.

The second subject that I took was an introductory mechanical engineering major course with the focus on energy estimation, technologies of energy generation and conservation, urban infrastructure and communication technology. I was grateful to have a chance to take this course, as I desired to study a major course related to engineering or other disciplines since my undergraduate education. Yet as a physio student whose schedule is highly packed and organised, I seldom have the opportunity to enroll in a proper engineering module.

The introductory engineering course was taught by Professor Daniel Probe, who was an interesting silver-headed and "inner-childed"expert in experimental solid-state physics and superconductivity. He was also a National Aeronautics and Space Administration (NASA) Technical Innovator Award fellow. Professor highly emphasised on group learning, outings, as well as interactive and playful atmosphere in learning. This provided excellent opportunity and environment for me to interact with Professor as well as students from various cultures and different disciplines. Such unique exposure allowed me to experience Yale student's enthusiasm in asking the right question, to witness their perseverance in solving challenging problems, and to understand various prospective in solving the same question. Overall, it was a joyful, challenging yet inspiring experience in gaining knowledge outside my discipline. I was glad that I eventually achieved a satisfactory result and ranked 3rd in the class.

Mentorship Programme

Another component of the Scheme is the Mentorship Programme. I was very fortunate to be one of the mentees of Dr Eric Chien, an experienced specialist in Orthopaedics and Traumatology. It was very kind-hearted of Dr Chien to welcome me to attach to his clinic where I could sit beside him and listen to his patients' worries or stories. Dr Chien assessed patients in details, educated clients with clarity and conciseness, communicated with patients with understandings and empathy. He also treated the injured and those in pain with huge amount of evidence backup. I was very impressed and inspired by Dr Chien's proficiency, competency and trust-worthiness. I shall see him as my role model of clinician.

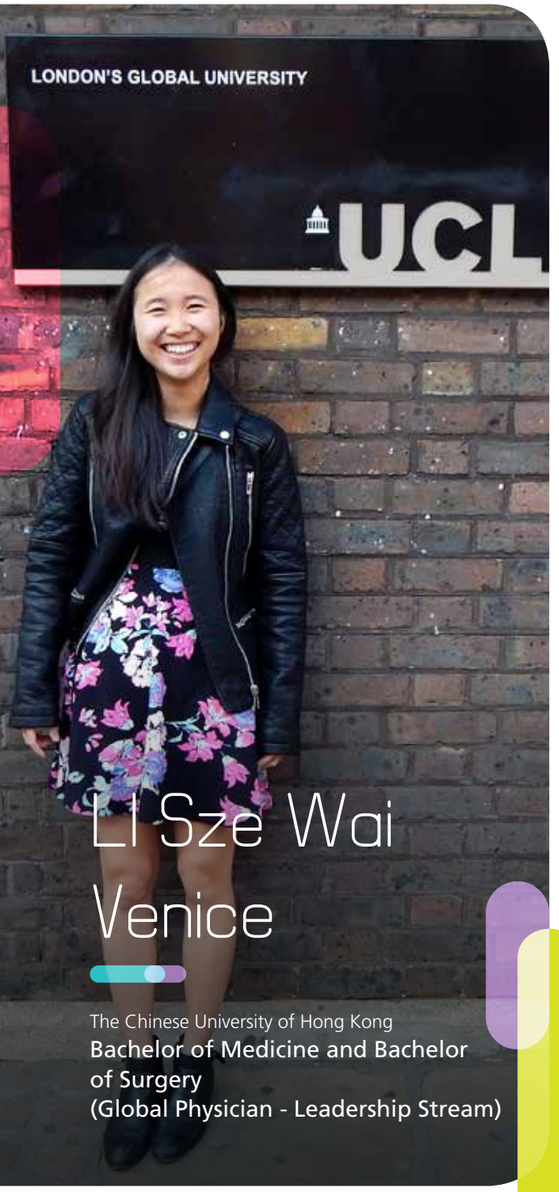
Dr Chien also introduced me to Mr Timothy Ho, an experienced physiotherapist working in Dr Chien's clinic. Mr Ho not only explained the importance of the mutual trust among healthcare professionals, but also introduced the current trend of evidence based on physiotherapy practice, and shared his previous working experience in the Hospital Authority. He even provided advice on how to become a competent, effective and efficient physiotherapist.

Service Project Programme

Last year, another IT scholar and I teamed up to design science workshops targeting children mostly from six to nine years old. In total we have conducted two workshops at Taikoo City Plaza and one at Hong Kong Science Park.

Running and designing science workshops for children were not as easy as I thought. We had chosen the topics about methods of energy transfer and designed a few simple and interactive experiments to demonstrate the concept of energy transfer. However, it was somehow challenging to conduct the drafted experiments. There were a numbers of factor that we needed to consider such as the reaction of children, crowd control, children's level of understanding in physics, safety issues concerning equipment used and the limitations of equipment available. Therefore, selecting appropriate content, drafting experiment manuals, workshop procedures and run down did take some effort and time.

Fortunately, with the help of the Secretariat of the Scheme, who shared valuable advice and previous experiences on running science workshop, as well as all other Innovative and Technology Scholarship Award Scheme awardees, my teammate and I successfully conducted all workshops smoothly. Both of us were glad that the workshops provided participants with a joyful and fruitful experience in learning science.



LI Sze Wai Venice

The Chinese University of Hong Kong
Bachelor of Medicine and Bachelor of Surgery
(Global Physician - Leadership Stream)

I am truly honoured to be awarded the Innovation and Technology Scholarship Award, which provided countless opportunities in medicine and opened doors to enriching experiences beneficial to my future career. I yearn for the give-and-take relationship of practicing medicine, yet recognise the superficiality of current medical knowledge and the need for sustainable biomedical research. Therefore, I aspire to become an impactful physician-scientist to discover and apply new knowledge from bench-side to bedside to cure highly prevalent illnesses in Hong Kong.

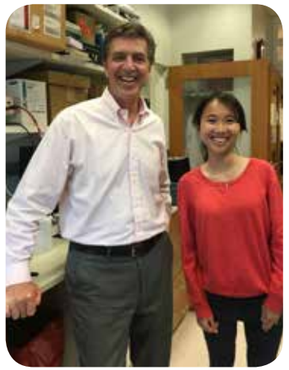
Overseas Attachment Programme

Currently, only symptomatic treatments are available for patients with neurodegenerative diseases. Even scientists have limited understanding of the pathophysiology and biochemistry. I hope to elucidate the underlying mechanisms and to develop therapeutic drugs that can improve the quality of life of our aging population. Most scientific breakthroughs were discovered in the West and might not fit to the Chinese population, thus I hope to amalgamate scientific research and clinical practices in a local context.

University College London, United Kingdom

Alzheimer's disease (AD), characterised by gradual loss of cognitive functioning and behavioral abilities, affects 36 million worldwide. Statistics estimates that one-third of elderly above 80 will have dementia by 2050. Unfortunately, AD is currently incurable. Researchers discovered that Alzheimer's brain is characterised by amyloid plaques and neurofibrillary tangles, degeneration, and loss of synapses in the hippocampus. Hippocampus is crucial for memory and learning. Consequently, neuronal death and rapidly progressing dementia follow.

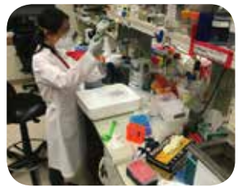
My first attachment was an 11-week internship at the Department of Cell and Developmental Biology of University College London, under the supervision of Professor Patricia C. Salinas and Dr Faye McLeod. Prof Salinas' laboratory was extraordinary as all lab members were female! Her lab studies the role of Wnt signalling in the formation and maintenance of synapses in mammalian nervous system. Studies suggested that dysfunction in Wnt signalling is associated with AD pathogenesis. They recently found that blockade of these signals results in synapse loss and deficiency in the hippocampus resulting in long-term memory impairment. Despite that, detailed mechanism of Wnt signalling pathway dysfunction and factors that modulate synaptic stability and maintenance remain to be elucidated. I attempted to investigate the molecular mechanisms that lead to synapse degeneration. I blocked Wnt signalling by Wnt antagonist Dkk1, which induces synapse degeneration in rat hippocampus, and observed changes in protein receptors. I learnt how to prepare primary neuronal cultures from rat hippocampus and how to successfully culture these neurons to examine the impact of signaling molecules in the formation of synapses. I also learnt how to visualise synapses using immunofluorescence microscopy and perform images analysis to evaluate changes in synapse number. It was indeed an eye-opening experience and I gained more understanding about the careers of research scientists.



Yale University, CT, USA

My second attachment was a 7.5-week internship at the Department of Neurology of Yale University School of Medicine, supervised by Dr Stephen M. Strittmatter and Dr Levi M. Smith. My project involved a Fyn kinase inhibitor in clinical trial phase II, called saracatinib, to see if it could change the quantity of proteins associated with AD. Transgenic mice brains and cerebrospinal fluids of Alzheimer's patients were treated and analysed with Western blotting and ELISA respectively, and results were quantified. I investigated if a single nucleotide polymorphism in a gene would have protective effects towards AD. Originally, I planned to further look into mouse astrocytes. Unfortunately, due to a contamination, my proposal was called off. It was an upsetting experience as I had put a lot of effort to design the most suitable experiments. Yet I also experienced the reality of research, that accidents happen and experiments fail. I began to admire the hard work that the greatest researchers of all time putting in to produce groundbreaking research breakthroughs that changed our lives forever.

I also attached to the Department of Neurology and Neurosurgery in Yale-New Haven Hospital under Dr Arash Salardini to look into clinical presentations of neurological diseases. I got a more in-depth understanding of the differences in healthcare systems between the US, which is largely owned and operated by the private sector; and Hong Kong, which is mostly public. I observed the doctor-patient interactions when breaking bad news. This reminded me that medicine is a combination of arts and sciences, and never should I forget the mental and psychological needs of patients



Service Project Programme

I organised a Science Carnival in which over 300 primary school students participated in interactive science activities. I introduced electromyography (EMG), an electrodiagnostic medicine technique for evaluating and recording the electrical activity produced by skeletal muscles to the students. It is very useful in medicine as abnormal signals on the EMG could suggest neuromuscular diseases. The student was asked to perform movements such as moving his fingers, clenching and relaxing his fist, rotating his wrist and also waves of different magnitude, while frequency were displayed on the iPad screen at the same time. Students were fascinated about it and asked a lot of intellectual questions about the scientific principles behind. From the smiles on the students' faces, I was sure that they enjoyed themselves and gained substantial knowledge about the science behind.

Mentorship Programme

I was honored to have the mentorship of Professor Vivian Yam, BBS, from The University of Hong Kong. Prof Yam is a distinguished female researcher in chemistry and her outstanding work on organic light-emitting diodes that enables more efficient lighting has earned her numerous awards. She shared with me her life journey in becoming a researcher and the difficulties she came across as a student. She also encouraged me to explore my interest in different fields of medicine. Nowadays, women are still underrepresented in the STEM field. Seeing a successful female scientist like Prof Yam definitely inspired me to put aside gender bias and social stigma. I now have a clearer picture of my future career in medicine.

Overall Evaluation

I would like to express my sincere gratitude to the organiser and all sponsors of the Scheme. Special thanks to the Secretariat, for handling all the administrative work and logistics. This experience would not have been as smooth and rewarding without your kind help and support.

LUK Sui Man Nicole

The Chinese University of Hong Kong
Bachelor of Science in Physics

Over the past year, Innovation and Technology Scholarship Award Scheme offered me opportunities to live with science and technology, from working in academia to educating the public with science. All these have widened my horizons and I have acquired invaluable skills and experience from them. I am very honoured to be selected by the Scheme.

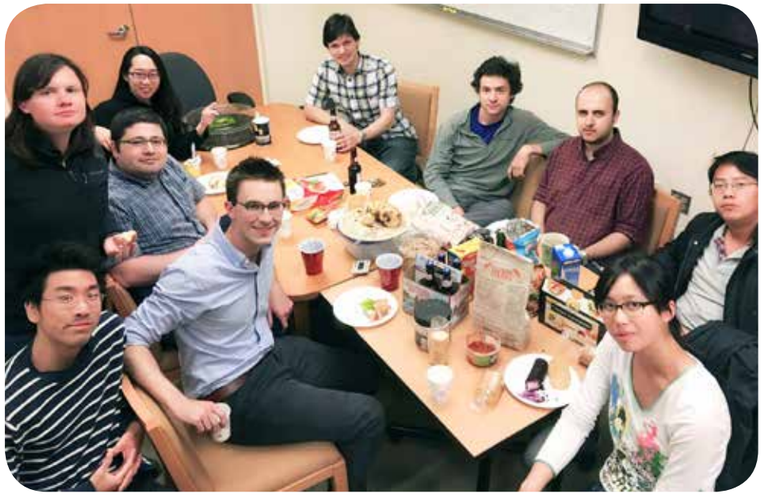
Overseas Attachment Programme

The two overseas attachments have paved the way for me to achieve my career goal as a researcher in biophysics. Biophysics is an interdisciplinary science where techniques in physics are applied to biology. From the programmes, I had the chance to be exposed to bioscience and developed my skills and enriched my knowledge in interdisciplinary research.

My first overseas attachment was being a summer researcher for Prof Norbert Scherer at the University of Chicago. One of Prof Scherer's research areas is tracking nano-scale biomolecules in pancreatic cells. My research project involved the analysis of the tracks of insulin-containing vesicles as well as simulation of their motion. This was my first ever experience in American academia. In Prof Scherer's lab, I have learnt about time and work management skills, and more importantly, communication skills. As the weekly meetings were the usual occasions to present my progress, I learnt to prepare well beforehand, to trim my content with a message to deliver, so that my audiences would not get lost during my presentation.

My second overseas attachment was an eight-month exchange at the University of California, Berkeley (UC Berkeley). Berkeley has an impressive academic culture: everyone there is willing to help and ask for help in learning. There is also much support from the University to facilitate effective learning. For example, a student learning center was built in campus to provide support services for students from diverse backgrounds, e.g. student athletes, students from minority groups, students with different sexual identities, as well as students with disabilities. I was impressed by UC Berkeley's awareness and respect for people from differect cultural backgrounds and its effort to help every one of them.

I also participated in research on campus. I was glad to join the lab of Prof Ahmet Yildiz to study single-molecule biophysics. My research focus was "motor" protein that does the transportation inside the cell, where I captured their movements by fluorescence microscopy. As a person who likes working with visual objects, the research was absolutely an enjoyable experience.



In Yildiz lab, I also get to know its friendly and international members. Despite the diversity, most of them were very friendly and respect each other. A new cultural experience in Yildiz lab was about Ramadan, the holiest month in the Islamic Calendar. There were four Muslims in our group who observed Ramadan in June and July, which they refrained from eating and drinking during daytime for a whole month. They treated Ramadan as a time of spiritual reflection, improvement, devotion and worship. I was fortunate to be invited to a fast-breaking gathering. Muslims treat the fast-breaking dinner as an opportunity to cherish their family and friends as they gather together for food. I enjoyed the happiness and friendliness during the dinner when we shared the joy of eating and laughters. The event was truly an eye-opening experience.

Through the introduction by local friends, I was fortunate to have the chance to visit Genentech headquarters in South San Francisco. Genentech is a biotechnology company that develops and manufactures medicines for serious illnesses. The visit gave me a glimpse of life in a large science and technology company. Firstly, the company is highly organised in terms of various departments and work groups. Secondly, because of the fine division of labor, Genentech operates with high efficiency. At Genentech, the time to develop a new drug takes only about five years. Thirdly, the social well-being of the employees is valued at Genentech as it put a lot of resources on improving the working environment, thus also boosting productivity. I appreciate the company taking the initiative to create a pleasant work environment for its employees, as this is a very sustainable way to maintain productivity, efficiency, as well as a sense of belonging.

Mentorship Programme

It is my pleasure to have Dr Brian Li, Managing Director of GP Industries Limited, as my mentor. During our meetings, I learnt that scientific programming has practical importance to electronic engineering. However, suitable candidates are not easy to come by as there are relatively few people interested in scientific programming in physics in Hong Kong. Throughout the four years of study, physics students acquire skills that are important for quantitative science and engineering. More importantly, they acquire the mindset and ability to analyse and think quantitatively. Thus, physics students are able to make use of their skills in various fields of science and technology industry.

Service Project Programme

In November 2015, I had the opportunity to put my skills into practice in science communication by holding two workshops in InnoCarnival 2015. My workshop provided hands-on experience with Oobleck, a mixture of cornstarch with water that thickens upon hitting but softens when the force releases. By mixing cornstarch with water and exploring the right amount of water to create Oobleck, participants had the chance to get in touch and feel the strange yet interesting properties of the fluid. It was delightful to see the curious faces of the children when they saw the cornstarch mixture thickened and relaxed as they applied forcs in different manners.

Overall Evaluation

My experience this year has been fruitful. In the two overseas attachments in America, I learnt about other cultures and developed my academic career. Having met my mentor, Dr Brian Li, I reflected on the many possibilities in application of transferable science skills acquired from the study of physics. During the science workshop, I had the chance to communicate with the younger generation. Hereby I would like to express my sincere gratitude to The Hongkong and Shanghai Banking Corporation Limited, Innovation and Technology Commission and The Hong Kong Federation of Youth Groups for making the Scheme possible.

NGAI Ying Tim Timberlake

The Hong Kong University of Science and Technology

Bachelor of Science in Mathematics and Economics

First of all, I would say, if anyone is awarded with the Innovation and Technology Scholarship Award, he or she cannot be luckier. The one-year programme offered me more than just monetary assistance. I had a wonderful summer during the internship in Hong Kong Aero Engine Services Limited. I also spent quite a lot of time participating in various enrichment programme organised by the Scheme. My mentor, Ms Marjorie Yang, GBS, JP, inspired me in lots of situations. We also had chances to attend activities and visit institutions that may not be accessible to ordinary college students. I really appreciate all the opportunities offered by the Scheme and I am definitely sure this will be my life-long treasure.

Overseas Attachment Programme

In 2015 fall, I went to Northwestern University, located in Illinois, the United States. It is among the top 20 universities in the US. I took three Economics classes, which inspired me on how appealing Economics can be. Economics professors there linked their lectures closely with what was really happening in the industry. If I am eager to explore more in this subject, I should look beyond the textbook to study daily examples to comprehend those theories.

Life experience there is unforgettable too. Northwestern is located in Evanston, a wonderful town near Chicago, which provided me access to the most indigenous life experience. The local residents here are the nicest peoples I have ever met during my stay in the US. Everyone was so nice to others that whenever one needed help on the streets, hands were always there for him or her.

Local Internship Programme

I had my internship in the Hong Kong Aero Engine Services Limited, which focuses on repairing airplane components. I was assigned to the Human Resources Department since my mathematical skills might help to analyse data and improve their proficiency. My one-month time there was memorable with plentiful work and friendly colleagues. I was in charge of the data analysis of their canteen performance. I used a lot of statistical tools and reached some conclusions. I also managed another project to develop a locker management system. I programmed to link lockers to individual employees and whenever adjustment is needed, just a few easy clicks would finish all the process. As I was in the HR department, I witnessed lots of cases requiring special skills to deal with employees, from which I acquired some skills regarding how to persuade others and how to build up solid relationships, etc.

In Northwestern, there were several facilities that served as incubators for enterprises founded by students. Another facility that I fond of was what they called 'The Garage'. The school provided countless equipment there for students to tinker, create and invent without boundaries.

Career activities were also a component of extra-curricular activities. I attended several sessions organised by big companies in the US. I found that there were differences between the US companies and their branches in Hong Kong. They utilize high technologies, big data for example, to process mountainous sheets.

Mentorship Programme

I cannot be luckier to have Ms Marjorie Yang, GBS, JP as my mentor. We have met for several times and she gave me precious lessons on different topics e.g. innovative technology, goal management, etc. She demonstrated how mathematical training impacts on one's mind set. She valued mathematics as the core to understand materials in the cutting edge innovative technologies, such as machine learning, artificial intelligence, the big data trend and so on. Thanks to Ms Yang, I realised that mathematics is the fundamental of all these. Even one does not have basic knowledge on all of the above, one can still comprehend with the help of maths.

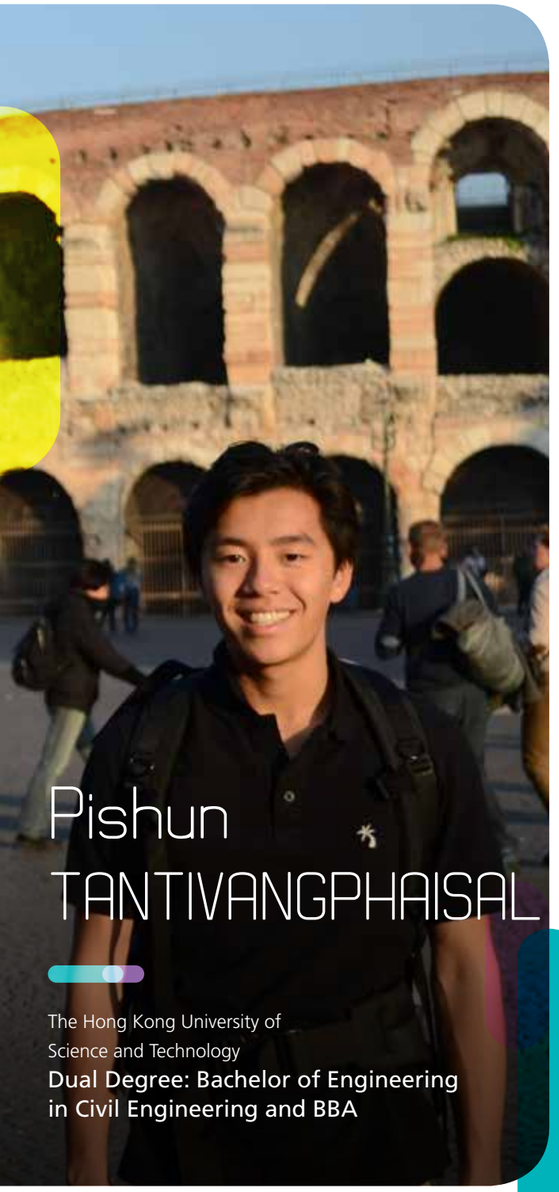
In addition, she also shared her college life experience with me. Before I departed Hong Kong for my Overseas Attachment Programme, she told me some stories of her time in the US, which became my firsthand information about US college life.

Service Project Programme

I served in the HK FLL Robotics Tournament 2016. It was a tournament designed for primary and secondary school students to compete in robotics design. My job duty was to assist the organisation counters that provide activities for teenager to try out some theories in science, such as the famous phenomenon - 'gravity well' and different components of circuit. It was not an easy job to look after so many children simultaneously. Though feeling exhausted, it was worthwhile to see all those smiling faces. We put lots of effort to supervise them playing with all the equipment at the counter and tried to use our own knowledge to demonstrate the power of science in order to inspire them. I will try my best in the future to provide more opportunities for adolescents in Hong Kong to know more about cutting edge technologies in the world.

Overall Evaluation

To be frank, I had no idea that I would be able to benefit so much from the Scheme. Apart from the financial incentives, all events organised by the Scheme in Hong Kong also meant a lot to me. I met a wonderful mentor who gave me suggestions that I trust to be valid for my whole life. I had my first internship experience in a company that encouraged me to challenge my limits. I attended several forums and meetings that opened my eyes on what the world is going on right now. Not every college student could have such an opportunity to experience all these in one Scheme. To whoever participating this Scheme currently, please pursue your dream and learn more from whoever you meet in the Scheme.



Pishun TANTIVANGPHAISAL

The Hong Kong University of Science and Technology
Dual Degree: Bachelor of Engineering in Civil Engineering and BBA

Mentorship Programme

It is my greatest honour to have Mr Hon Chi-keung, JP, Permanent Secretary for Development (Works) of HKSAR, as my mentor under the Scheme. He enabled my participation in an enriching and informative internship at the Development Bureau (DevB). Without Mr Hon's supportive introduction, I would not be able to meet officers of four associated government departments in the Bureau. I was inspired by the fruitful conversation with them and treasured such exposure so much.

Local Internship Programme & Mentorship Programme

The schedule of my internship within DevB was organised such that I had the opportunity to talk to officers from different divisions and offices. This gave me a lot of insight into the policies and procedural matters that allow the construction of public engineering and infrastructure works. I learnt from these experienced civil servants their work, ranging from the publicly scrutinized topic of land supply for housing and public infrastructure, the related studies and investigations carried out, to the procurement policies and contracts of public works as well as the safety and manpower involved with public infrastructure construction.

Through my preliminary understanding of the work of the Development Bureau, I have come to realize that an incredibly careful balancing of interests is needed in order to successfully launch an infrastructure project. I rotated among several departments at DevB: the Highways Department (HD), the Geotechnical Engineering Office of the Civil Engineering (GEO), the Development Department, the Architectural Services Department (ArchSD) and the Buildings Department (BD).

Each stop provided me with in-depth discussion with both administrative personnel as well as on-site experience shadowing site engineers. Beginning with a series of site visits to Hong Kong's foremost public infrastructure projects with the Highways Department, I learnt about the history of traversing Hong Kong's difficult terrain and the engineering solutions to overcome them. Now, technological prowess in tunneling and land reclamation has given projects such as the new Shatin Central link, High speed connection to mainland China and the new HKMZ Bridge. I was lucky enough, through this internship, to be able to visit the sites of some of these multi-million dollar projects. These visits to the transportation network of Hong Kong's future sparked a new interest to learn more about their planning and design, which I ended up pursuing in the form of a module during my exchange stay at University College London.

All in all, my internship was an incredible fast-paced and hectic experience. The sheer number of site visits, the number of projects I touched upon is something that not many engineers can even say they come across in a decade of work. I am very grateful for this opportunity to experience, albeit very briefly in each case, all of the various public engineering projects. Through this overview of the civil engineering profession, with the many facets that it encompasses, I will now be able to gather my thoughts and my studies to decide on a direction to take, and a field to focus on, in order to gain the expertise required in industry.

Overseas Attachment Programme

I was accepted to a year-long affiliate student programme with University College London (UCL)'s Civil, Environmental and Geomatic Engineering Department. UCL's academic reputation as a world renowned centre of research, as well as strong links to industry in the UK and abroad, and this cemented my choice in their programme. As a visiting student, I was allowed to choose from a set of third/final year undergraduate modules, as well as taught postgraduate modules.

My summer internship at DevB sparked my interest in two particular fields: transportation and geotechnical engineering. Hence, one module of choice was a year 3 Transport Studies course. This module gave me a taste of the fundamentals of the many facets of transport planning and engineering. We touched upon the planning of public transport, especially with London's recent light rail connecting the financial district with residential hubs, as well as the implications of the Crossrail project. The UCL professors involved in publishing a guide to street engineering led a seminar within my module as well, giving us an in-depth explanation of their design rationale.

The geotechnical engineering module taken at UCL was a little more advanced than I anticipated, as it was targeted at Master's level students. However, through the group work involved, I gained an understanding of what it actually means to follow a design code. My internship involved looking at calculations done based on the guidelines set by engineering codes, however it was all from an auditing perspective, rather than from the designer's perspective. As the module's three pieces of coursework all involved design and calculations of sample projects, I learnt both from lectures as well as from members of my group.

UCL's extensive collection of online and hardcopy resources spanned a wide variety of subjects. I found that the vast ocean of resources accessible as a student at UCL was much greater than at HKUST, and I hope that in time, that will grow to a similar size. The university system in the UK is a lot less geared towards a teacher-student form of learning, but rather a self-taught mentality, with professors and lecturers to supplement. The many libraries stocked textbooks relevant to each module; I also managed to find resources to extend my interest in other fields, such as history and politics, as well as managing to teach myself GIS programmes, downloadable through UCL's list of licensed applications for students and staff. I had also arrived in the UK as it was going through a period of political intrigue, with a country-wide general election which happened just before I arrived, referendums and mayoral elections during my stay. I learnt a lot about the democratic process in the UK, its relationship with the European Union as well as the pros and cons of the system.

Having been involved with student organisations in Hong Kong as an executive committee member, I was very curious to see how the equivalent in Britain was. Although I would not be on exchange at UCL for long enough to actually hold any positions of power within a students' society, I decided to join UCL Silverbacks, the university Ultimate Frisbee club. With tri-weekly trainings and fortnightly league matches, this became an integral part of my life at UCL in addition to academics. Through the club, I found that the societies in the UK are empowered a lot more by their respective Students' Union, and that there is a lot more accountability to the Union. Executive committee members were all passionate whatever the club was about, and would run for important positions within the club for two or even three years on the trot. Masters' and PhD students also actively participated, especially in sports clubs such as the one I was in which really helped balance the level of commitment and maturity within clubs.

At the end of my exchange stay, I wanted to experience the city as a local. With this opportunity, I wanted to do something I had yet to come across in Hong Kong. I applied for, and was accepted to work as an intern at a production pottery, which produces ceramic functional wares as well as artistic, gallery-grade pieces. I think that innovation, in the end, is the agglomeration of inter-disciplinary thinking, which is fueled by creative uses and borrowings of technologies from other fields. Honing my own creative thinking will be my short-term goal through this internship, and I hope to then have a base from which to spring from. We already know that long standing concepts in Civil Engineering can be applied elsewhere, and now the future of my profession also has to innovate. Given climate change as inevitable, infrastructure will have to adapt to new conditions, and perhaps lessons learnt in materials engineering and research in green technology will also be applicable to how infrastructure is built and maintained.

WONG Cheuk Fung Raphael

The Hong Kong University of Science and Technology
Bachelor of Engineering in Electronic Engineering

I would like to express my most sincere gratitude for being selected as one of the recipients of the Innovation and Technology Scholarship Award. The Scheme has given me lots of insights and unforgettable memories. I am truly grateful to The Hong Kong Federation of Youth Groups, The Hongkong and Shanghai Banking Corporation Limited and the Innovation and Technology Commission for giving me this award and all the opportunities I experienced in this fruitful year.

Overseas Attachment Programme

In the last fall semester, I was given the chance to study in the University of California, Davis as a visiting student. Unlike HKUST, UC Davis adopts a quarter system instead of a semester system. I found it hard to adapt as normally we have approximately three months per semester. Nevertheless, in UC Davis, it is only twelve weeks per quarter. Although the course materials seemed to be easier to handle, the workload was always intense and the time for revision was very limited. Eventually, without noticing, I stayed in the library to study almost every day. Thankfully, the school provided lots of support with the help of teaching assistants and professors. They really helped me to clarify concepts that were unclear to me.

My three-month studied in UC Davis really opened up my mind and turned me into a more talkative person. When I first arrived, I was overwhelmed by how friendly everyone was on the campus. While I was having lunch, people who shared the same table would always take the first step to talk to me. It was hard at the beginning, but after a few more encounters, I also began to approach others for small chats and thankfully they responded in a friendly manner. The professors were also very patient and friendly. There was a time when I did not really understand some concepts; I decided to go to the professor's office. He actually took an hour to explain things to me. Before I left, he even asked some questions to see whether I truly understand or not. As a student, I have never seen such a passionate professor before and he surely motivated me to study harder for the course. With all these lovely memories, I am glad to be an exchange student in UC Davis.

Mentorship Programme

My mentor is Dr Roy Chung, BBS, JP. He is the Founder and Chairman of Bright Future Charitable Foundation. It was an honour to have Dr Chung as my mentor. The insights and experiences he shared with me had been very helpful in my future career planning. Despite being my mentor, he greeted me as a friend and shared his opinions on many matters that troubled me.

We have discussed a lot of topics during the period. The most impactful advice from him was about finding one's strength, not weakness. I still remember what he said, "Even you think you have no strength, your belief will become one if you don't give up." His advice made me understand the importance of self-confidence. By working hard and thinking positively, I am now eager to face any challenges that will stand in front of me. Thank you Dr Chung.

Local Internship Programme

I was grateful to be assigned to Signal Communications Limited to work as an Engineering Trainee. Signal Communications Limited is a member of the TeleEye Group that focuses on developing CCTV recorders, HD cameras and online surveillance interfaces. During my internship period, I was assigned to conduct product design, debugging and documentation. As an electronics engineer, it was delightful to be able to put my knowledge into practice.

Although my internship only lasted for six weeks, I had obtained valuable experiences and insights from all the support given by my colleagues. As this was my first time working in an engineering workplace, it was hard to adapt at first. But I am glad that my supervisor was so kind to teach and guide me when necessary. I am also very grateful for all the stories Dr Chan, the CEO of TeleEye Group, shared with me from time to time. The talk had included but not limited to advice for my exchange programme and the future development of electronics engineering, which I found very helpful in deciding my major electives based on the flow of market demand. To summarize, this is an unforgettable experience and I will take great care of what I learnt and better equip myself when I work in the field again in the near future.

Service Project Programme

As an electronics engineer, I decided to show the delightfulness of basic electronics through conducting a workshop on building solar torches. Each group of parents and children was given a pack of components, which consisted of resistors, capacitors, LEDs and a solar panel. By introducing some basic electronics concepts, I asked each group to construct their own solar torch and observed their achievement through lilting the LED with an incandescent light bulb.

During the workshop, I was very delighted to see children getting excited with the components and were eager to start building their torches. When it was time to build the torch, parents and children worked together to make sure each component was in the right place. Although some groups did find it difficult to finish the task, as they saw the LED light began to glow, smiles and cheers were the best signs of success and achievement.

Overall Evaluation

Once again, I would like to show my most sincere gratitude to the parties who are responsible for the Scheme. Without the opportunities given, I would not be able to experience such a meaningful and fruitful year that had completely changed my way of thinking and gave me insights to my future career planning. Last but not least, I hope the Scheme will continue to give valuable opportunities to young engineers and science students. They will definitely have new encounters through the Scheme that will polish their minds to become successful individuals in the future.

WONG Lok Tung Isa

Hong Kong Baptist University
Bachelor of Chinese Medicine and Bachelor of Science in Biomedical Science

I am honoured to be one of the 25 awardees of the Innovation and Technology Award Scheme 2015. With the support of the Scheme, I participated in four Scheme componenets last year, including Overseas Attachment, Local Internship, Mentorship and Service Project. Looking back, what I have learnt and acquired went far beyond my expection. It is certainly an important milestone in my university life and my career ahead.

Overseas Attachment Programme

I applied for a summer course about Functional Anatomy at the University of Glasgow. Founded in 1451, the University of Glasgow is the fourth oldest university in the English-speaking world and one of the UK's seven ancient universities. Throughout its 560 years of history, the University has inspired numerous talents including seven Nobel Laureates, one Prime Minister, Scotland's First Minister and the first batch of female medical graduates.

Whenever I share my overseas experience with others, people raise the same question: How is anatomy relevant to Chinese medicine? In fact, both acupuncture and Tui Na require strong understanding of human anatomy. Having a good knowledge in the organisation and location of muscles, joints, blood vessels and nerves facilitates the performance of manoeuvres in Tui Na and improves the precision of acupuncture. In addition, this course provided me the opportunity to perform my own dissections on persons. This invaluable experience allowed me to gain a more in-depth understanding of the human body which viewing dissected specimens alone could not.

In the dissection lab, I was very lucky to have Ms Catherine Kellett as my tutor. Trained in Oxford, she is an orthopaedic surgeon specialises in performing hip and knee arthroplasty surgery. On one occasion, she demonstrated the procedure of a knee replacement surgery to us on one knee and the anatomical dissection on the other knee. It was enthralling to watch a procedure so closely executed by experienced hands.

Studies aside, the school has arranged series of activities and weekend excursions for us to experience the unique Scottish culture and explore the best of the country. I had a great time travelling together with friends I met at the course with whom I still keep in touch by now.

Local Internship Programme

After returning from the UK, I subsequently started my 7-week local internship at the integrative medical centres of Eu Yan Sang (Hong Kong) Limited.

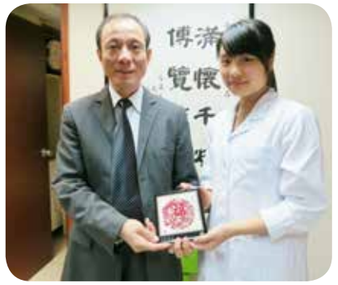
As I have not been assigned to any particular project, I was free to shadow any staff of my choice, which actually allowed me to observe the daily operation of the clinic from a very different angle.

For every Chinese medicine practitioner who is going to open his or her own clinic, the management of the pharmacy is crucial. When it comes to the pharmacy, every tiny detail matters. Managing a pharmacy can be more complicated than we can imagine. Here, I would like to give my heartfelt thanks to Ha Jie, the Senior Dispenser at Eu Yan Sang, for her generous advice and sharing of experiences.

I would also like to convey my sincere gratitude to the manager, Mr Michael Ling, and my supervisor, Ms Kwok Chi Yan, for their kindest guidance and sharing of their insights and experience in managing a clinic from the perspective of a manager.

I am really glad to have the opportunity to work at such a reputed brand in TCM. After the internship, I get to know more about the operation and management of a clinic, which is something that would not be taught in school. The experience of working at Eu Yan Sang will definitely be an important stepping-stone for my future career development.

Mentorship Programme



I am really glad to have Dr Edwin Yu Chau-leung as my mentor. As the President of the Hong Kong Association for Integration of Chinese-Western Medicine (HKAIM), Dr Yu is both a qualified Western medical doctor and a Chinese medicine practitioner.

It is a great pleasure to be able to join his clinic sessions. The way Dr Yu integrates the two medical systems into his unique one is really extraordinary and eye-opening. I would certainly like to sit in another session if schedule allows. In addition, I really appreciate Dr Yu's effort in fostering the collaboration between Western and Chinese medical doctors, including the initiation of the Integrative Joint Organizational Platform (IJOP) which intends to create a platform for Western and Chinese medical doctors to communicate.

I treasure every conversation I had with Dr Yu. His words and works definitely shed light on my future path of being a Chinese medicine practitioner.

Service Project Programme

As part of the Scheme, we organised a workshop for primary school students related to science and technology during the InnoTech Month. I decided to run a workshop on the authentication of Chinese Materia Medica.

To make the workshop more interesting and intriguing, participants were invited to differentiate between genuine and fake herbs at the beginning of the workshop. Common techniques used in the authentication of Chinese Materia Medica were then introduced through games and simple experiments. Using basic materials that could be found in a kitchen like water and vinegar, participants could observe different interesting effects such as bubbling, colour changing and fluorescence from their reactions with TCM herbs. By the end of the workshop, I hope I could arouse their interest in Chinese medicine, and more importantly, their interest in innovation and technology.

Overall Evaluation

The Scheme is a programme that packs all in one. It has, without qualm, served the purpose of widening our international exposure and encouraging us to follow our passion on science, innovation and technology. Through this once-in-a-lifetime journey, I have discovered the potentials and possibilities in myself and I am very glad that I have put myself up for this challenge. It is truly a life-changing experience for me.

Last but not least, I would like to express my deepest gratitude to Innovation and Technology Commission, The Hongkong and Shanghai Banking Corporation Limited and The Hong Kong Federation of Youth Groups for their support to the Scheme, allowing many young scholars including me to reach out for our dreams and continue in our pursuit on innovation and technology.

XIE Phil Fei

The Chinese University of Hong Kong
Bachelor of Medicine and Bachelor of Surgery

I am very grateful to be selected by the Innovation and Technology Scholarship Award Scheme 2015. I feel very lucky because the Scheme opened up many learning opportunities for me, especially the Overseas Attachment Programme. I highly appreciated all exposure given and would say it was surely a life-transforming experience.

Overseas Attachment Programme

I am a medical student and I am committed to doing scientific research in the future, especially on combating diseases. Therefore, I applied for research attachments in Professor Mark McCarthy's lab at the University of Oxford, as well as Professor Chuan He's lab at the University of Chicago.

The University of Oxford

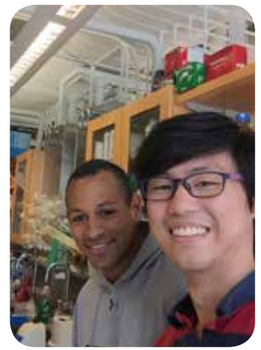
Professor Mark McCarthy is an endocrinologist with special interest in diabetes. One of his main research focuses is using genetics as a tool to understand the pathophysiology of type 2 diabetes, as well as using the information to accelerate the development of personalised medicine.

Modern genetics is rapidly moving. Since the establishment of the Human Genome Project in 2003 and advancement in sequencing methods, the field of genetics has entered the post-genomic era. Scientists gained a lot more insights into multifactorial traits and diseases, such as obesity, dementia, cancer, etc. All these traits and diseases demonstrate heritability, but we were unable to tell exactly which genes were responsible, until the development of a methodology called "genome-wide association study". This method involves recruiting patients in clinics, sequencing their DNA in labs, and analyzing the data on supercomputers.

I followed the data analysts and handled some data, which contributed to their project on birth weight, known to be associated with a lot of later-life chronic conditions, including diabetes. I left before seeing the final results, but I learnt a lot of technical details in the research methodology, and brought the skills back to Hong Kong to work on related projects.

The University of Chicago

Professor Chuan He is a chemical biologist, who is best known for his pioneering role in rediscovering RNA modifications and their contribution toepigenetics. Discovering a new pathway in biology is no small feat because it is often followed by a leap in filling the knowledge gap, and for practical interest, a sudden surge of new therapeutic targets. Thus, aside from studying the fundamental biology of the role RNA modifications, the lab also hopes to design an inhibitor for the key proteins aforementioned, both for research and possible therapeutic purposes.



I was involved in testing one of the inhibitors on a biochemical level, which is one of the very early steps in drug design. This is a rather unique experience because doctors are usually only involved in the very late steps. It is also a very valuable experience, because I learnt a lot from troubleshooting. I cannot emphasize more on the importance of having multiple controls, especially negative controls, when dealing with a new technique in order to obtain trustworthy data.

ASCO Annual Meeting

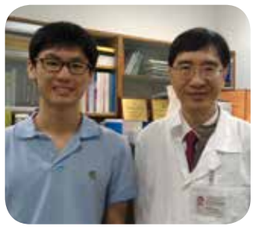
During my attachment in Chicago, I noticed that the ASCO Annual Meeting would be held nearby. ASCO stands for American Society of Clinical Oncology. Its annual meeting is the largest international conference on the research and management of cancer.

The conference had a maximum of 22 parallel sections. The two big themes were immunotherapy and cancer genomics, as there has been a lot of advancement in these two areas over the past years. Limited focus was put in the early detection of cancer, likely because drug companies do not fund these trials. We might have to search for a new way in the public health aspect as immunotherapy, tumor sequencing and the subsequent analyses put heavy burden on patients. I gained much insight participating in this conference and was genuinely content with this experience.

Mentorship Programme

I am grateful to have Professor Yuen Kwok-yung, SBS, JP as my mentor. I secretly admire Prof Yuen a lot and it was absolutely a pleasant surprise to have him as my mentor. We had a short meeting before I departed for Oxford for my first attachment.

In the meeting, I asked him how to be successful in doing research. In response, he shared his experience in dealing with unknown when SARS was threatening Hong Kong. I learnt much from his success - correctly identifying the SARS coronavirus was no luck but instead, rely one to exercise logical thinking and to stay calm while facing the terror, and also wisdom and clinical instinct of an experienced microbiologist. He also reminded me to take a closer look on how the top scientists think, instead of what they do, as that would benefit me for a lifetime out of the attachments.



Service Project Programme

One of the ultimate aims of the Scheme is to improve the competitiveness and sustainable development of Hong Kong. Thus, youth education is indispensable. Together with another awardee Pensi, who is also a medical student, we held three parent-child workshops for primary school children at InnoCarnival 2015. Through fun and interactive activities, we taught the children about the basic respiratory physiology and infection control principles.

We started off with playing a puzzle of the respiratory system, followed by making DIY lung model and finished off by demonstrating the proper way to wear face mask. These activities have covered a series of discussion over the anatomy and physiology of respiratory tracts, immune defence mechanism, common respiratory illnesses, infection control principles, first aid in choking and lots more. We also showed how doctors utilised technology to examine our respiratory system, for example, bronchoscopy, which heavily relies on optic fibres to function.

Overall Evaluation

The Innovation and Technology Scholarship Award Scheme 2015 provided lots of precious opportunities to enrich my experience and knowledge and now I have a better idea of what I want to do in the future. Without the support of the Scheme, it would have been much harder for me to have such exposures. Joining the ASCO Annual Meeting last year was undoubtfully an excellent investment to me. I am very glad to hear that the Scheme will further support awardees to attend international conferences next year. Last but not least, I would like to sincerely thank the Secretariat for their support, as everything would have been so much harder without them!

YIP Chi Yiu Karsten

The Chinese University of Hong Kong
Bachelor of Engineering in Mechanical and Automation Engineering

It is my greatest honour to be selected as one of the awardees by the Innovation and Technology Scholarship Award Scheme 2015. Throughout this academic year, I was given lots of precious learning opportunities. The Overseas Attachment Programme to University College London (UCL) offered me an opportunity to study abroad and develop my global vision. My mentor, Mr George N Chung, BBS, JP, has given me valuable advice about my career path and academic issues. The Local Internship Programme at Hong Kong Productivity Council (HKPC) enhanced my knowledge in the area of manufacturing and mechanical engineering industry. The Scheme also encouraged me to serve the community by organising a workshop for primary school students during the InnoCarnival 2015.

Overseas Attachment Programme

University College London

In the Spring Semester 2016, I started my study at the University College London (UCL) in the United Kingdom as an undergraduate affiliate student. Attaching to the Department of Management Science and Innovation (MSI), I have enrolled in four courses, including Digital Marketing, Project, Portfolio and Programme Management, Engineering Materials: Failure and Design, and Management for Built Environment Professionals I.

Studying a wide variety of courses in a multicultural environment complemented my studies and nourished my global vision. Immersing into the local British culture and meeting people from all around the world was also a fun experience which enabled me to build international friendships. The exchange experience in UCL was truly unforgettable, rewarding and eye-opening.

Teaching and Learning Environment in UCL

I was impressed by the open, positive and lively learning atmosphere on the first day of school at UCL. Teaching in UCL emphasises on hands-on experience and student-oriented interactions during lessons. Students are enthusiastic in acquiring knowledge and very good at asking high-quality questions. The professors always welcome these challenges as they provoke and stimulate us to think deeply, in which eventually helped us to digest and understand what was being taught.

One of the most remarkable group coursework that I came across was the Failure Analysis Case Study (FACS) of the engineering material course. Our group acquired a coat hanger with a fracture point at the spot-welded junction between the hook and the triangular body. We carried out lab tests to examine the microstructure of the fracture and identify the materials used to manufacture the coat hanger. Based on the lab results, we tried to discuss and justify the possible reasons for failure.

I found FACS very interesting and useful as it gave students an opportunity to handle real engineering components and investigate real engineering issues – within an academic context. Instead of learning theories solely and keeping our heads in the cloud, FACS has made the course very down to earth as it emphasises on the application of material science and engineering theories during investigation.

Inspirations from UCL Students

I was also inspired a lot by the UCL students when I studied and worked with them. UK students are always capable of offering more alternatives when solving problems. They usually have very strong critical mindsets and would even challenge the professors if they found the information being told illogical. My fellow UCL schoolmates have inspired me to be a more reflective and active learner.

Meanwhile, I was lucky to witness a historic event during my stay in the UK – the Brexit. Though most of the UK students may not agree with the decision to leave the EU, they see the uncertainties as opportunities rather than risks. As the future leaders, they are determined to strive hard and prepare themselves to take on the responsibility of building a better society. Their attitudes and thoughts are really inspiring and have earned my respect. In Hong Kong, many students seem to pursue undergraduate degrees solely for the sake of better career prospects. They seem to have neither passion in acquiring knowledge, nor vision of how their knowledge could bring about changes in the society. UK students have set a good example for us. We should figure out the underlying purposes of learning, be passionate and take a proactive attitude towards knowledge acquisition.

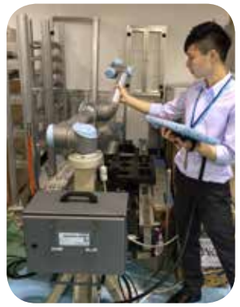
Mentorship Programme

The mentorship programme is one of the most meaningful and special part of the Scheme. It is my honour to have Mr George N Chung, BBS, JP, to be my mentor. Mr Chung is the founder and Chairman of Standard Telecommunications Limited. I first met him at the Award Presentation Ceremony. Like many undergraduate students who struggle to figure out what to do after graduation, I was also puzzled about whether I should start working or continuing higher education. Mr Chung supported my idea of pursuing a master degree as it will help open up doors of opportunity and increase future earning power. Mr Chung's advice surly encourged me to be more determined to pursue my goals.

Though the Scheme lasts for one year only, I do hope that I could maintain this mentor-mentee relationship with Mr Chung in the future and I look forward to getting more inspirations from him.

Local Internship Programme

Before departure to London for the overseas attachment, I participated in a 12-week Local Internship Programme at the Hong Kong Productivity Council (HKPC). I was assigned to the Material and Manufacturing Technology Division (MTD) and my main duties were to assist in a few Research and Development (R&D) projects.



I was more than delighted to be assigned lots of hands-on tasks, ranging from conducting feasibility study on the antimicrobial properties and application of graphene, developing the inflation mechanism for a life-saving recreational water device to preparing the Computer-Aided Design (CAD) drawings of the mechanical design. My most valuable experience was the opportunity given to install and manipulate an industrial 6-axis robot arm when I assisted in the development of a quick learning automatic spraying cabinet for surface decoration of jeans. The generous support from my colleagues also made my intership experience even more fruitful and rewarding. They were very willing to share their past projects and working experience with me and hence widened my horizon.

In overall, the experience of working as an intern at HKPC has inspired me a lot and further motivated me to learn and explore more in the engineering field. It opened up my mind and made me realise the importance of understanding how the business world works. I would like to take this opportunity to express my deepest gratitude to my mentors, Mr YC Ko and Mr Ivan Wong, as well as my supervisor, Mr Samson Suen, for their guidance during the internship and their appreciation as reflected on my performance report. Their recognition indeed asserted my ability in conducting mechanical designs and boosts my self-confidence.

Service Project Programme

Apart from recognising the achievements of awardees and supproting their personal growth and development, another objective of the Scheme is to promote science and technology to the general public. As an awardee, I strongly believe that it is my responsibility to educate the public and serve the community.

During the InnoCarnival 2015, I held several workshops targeting primary school students and also served as a helper. My service project was called "Air force" and allowed parents and children to investigate the properties of air and air pressure as well as its application. I took the activity-based learning approach as I believed it is a more interesting and effective way for children to learn and understand scientific theories. Throughout the workshops, I tried to convey the message that science is actually very down to earth and not as complicated as people used to believe. I was very satisfied as I could see all the children enjoyed the workshops very much and left with big smiles. I sincerely hope that they could keep their curiosity and creativity, explore and learn more about science theories and become future scientists and engineers!

Overall Evaluation

The Scheme is well-organised and comprehensive which nurtures many talented minds to be committed to science and technology, facilitates the exchange of brilliant ideas and thoughts, as well as establishes an extensive social network in the innovation industry. I would like to take this opportunity to express my sincere gratitude to the organisers and all the sponsors for their devoted effort and support to the Scheme. I sincerely hope that we all young talents will continue to throw off our bowlines, sail away from the safe harbour and catch the trade winds in our sails. To explore, to dream and to discover.

Introduction of ITC

Innovation and Technology Commission

The Innovation and Technology Commission spearheads Hong Kong's drive to become a world-class, knowledge-based economy. It formulates and implements policies and measures to promote innovation and technology; supports applied research and development (R&D); supports technology transfer and applications; promotes technological entrepreneurship; facilitates the provision of innovation and technology infrastructure and development of human resources; and promotes internationally-accepted standards and conformity assessment services to underpin technological development and international trade.

Introduction of HSBC

The Hongkong and Shanghai Banking Corporation Limited

The Hongkong and Shanghai Banking Corporation Limited is the founding member of the HSBC Group, which serves around 46 million customers through four global businesses: Retail Banking and Wealth Management, Commercial Banking, Global Banking and Markets, and Global Private Banking. The Group serves customers worldwide from over 4,400 offices in 71 countries and territories in Europe, Asia, North and Latin America, and the Middle East and North Africa. With assets of US$2,608bn at 30 June 2016, HSBC is one of the world's largest banking and financial services organisations.

The Hongkong Bank Foundation

Many community projects in Hong Kong are funded by the Hongkong Bank Foundation charitable trust. It was founded in 1981 by the Hongkong and Shanghai Banking Corporation Limited to co-ordinate its community support programmes in the Hong Kong Special Administrative Region (Hong Kong SAR). Since 1997, the Foundation has also been donating to programmes that benefit mainland China.

The Foundation supports about 200 community projects each year, helping more than 800,000 people. It has donated more than HKD1.4 billion to projects in Hong Kong and China since its inception.

Its principal interests are education, health/wellness, environmental protection, and enhancing links between the Hong Kong SAR and mainland China.

Introduction of HKFYG

The Hong Kong Federation of Youth Groups (hkfyg.org.hk | m21.hk)

The Hong Kong Federation of Youth Groups (HKFYG) was founded in 1960 and is now the city's largest youth service organisation. For the last 56 years, it has been committed to serving the youth of Hong Kong through the provision of a variety of services, activities and programmes, which have an annual attendance of over five million. We encourage youth to reach their fullest potential and with community support, we now have over 70 service units. We also have 12 core services, which include the Youth S.P.O.Ts, M21 Multimedia Services, Employment Services, Youth at Risk Services, Counselling Services, Parenting Services, Leadership Training, Volunteer Services, Education Services, Creativity Education and Youth Exchange, Leisure, Cultural and Sports Services, and Research and Publications. We encourage young people to grow into responsible and dutiful citizens and we now have over 180,000 registered volunteers and 400,000 registered members. We believe that our motto **HKFYG • Here for You** reaffirms our commitment and dedication to the young people of Hong Kong.

Secretariat of Innovation and Technology Scholarship Award Scheme

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Date of issue: FEB 2017