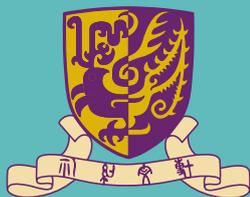


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The Chinese University of
Hong Kong



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Message from the Chairman

Dear Alumni and Friends,

With immense pleasure, I present the 10th issue of the departmental newsletter.

The year 2015 was fruitful and rewarding for the department. The preparation work for the 4th Institute of Mathematical Statistics-Asia Pacific Rim Meeting (IMS-APRM) is in full swing. The IMS-APRM will be held from 27-30 June, 2016 at The Chinese University of Hong Kong. Registration will begin on 15 January, 2016. You can view updates on this event at <http://ims-aprm2016.sta.cuhk.edu.hk>.

With great delight, I wish to report the achievements of our students and faculty members. First of all, I am extremely pleased to learn that Patrick Pun, our PhD student, was awarded the Best Student Research Paper Award for a paper presented at the 2015 Institute for Operations Research and Management Sciences. For the first time, a PhD student from the Asia Pacific region has won this international competition. The quality and strength of the research of our postgraduate students are again proven to be comparable to that of other renowned universities overseas.

In addition, Prof. Poon Wai Yin was appointed Pro-Vice-Chancellor. Prof. Song Xinyuan was advanced to professorship in August 2015. Dr. Tony Sit was awarded the Faculty Exemplary Teaching Award. Prof. Wong Hoi Ying and Prof. Song Xinyuan now serve as Associate Dean for Student Affairs and Assistant Dean for Research, respectively. I was also appointed as Choh-Ming Li Professor of Statistics.

To establish linkages and foster academic exchanges, we have organized a sizable number of workshops, seminars, and distinguished lectures. You can turn to page 4 for additional information on these activities.

In 2015, we made several changes to the "hardware" of the department to enhance the teaching and learning environments. With the available resources, we renovated the staff/student common room in Room 121 at Lady Shaw Building to create a friendly and relaxing atmosphere where our staff and students can freely discuss their research. The computer laboratories were also renovated, and the computers were upgraded.

The Department of Statistics is dedicated to nurturing talents in statistics and risk management. The year 2016 welcomes its 30th cohort of graduates. The Alumni Association of the department will be holding a "30 Year Reunion" dinner for all alumni to assemble and celebrate the achievements of the department over the years. Please read on for additional details on the event.

With continued support from you and our staff, I am certain that the department will see another great year ahead.

Finally, I would like to take this opportunity to wish you all a healthy and blissful 2016!

Qiman Shao
Chairman



Speaker, faculty members and participants at the Conference in Quantitative Finance held on 11 December, 2015.

Advancements

- ▶ **Professor Poon Wai Yin** has been appointed as **Pro-Vice-Chancellor** with effect from 1 May 2015.
 - ▶ **Professor Song Xinyuan** has been advanced to **Professor** with effect from 1 August 2015.
- Congratulations to Professor Poon and Professor Song!

Honors and Awards



- ▶ **Professor Shao Qiman** has been appointed as Choh-Ming Li Professor of Statistics in recognition of his distinguished scholastic performance. The University will provide \$100,000/year to Professor Shao for 5 years to support his academic and research activities. Besides, Professor Shao received the second-class State Natural Science Award in 2015 for recognizing his excellent capabilities in research. The news was announced by the National Office for Science and Technology Awards in Beijing in early January 2016. Congratulations to Professor Shao on his achievements and hope Professor Shao will continue to scale new heights in his research.



- ▶ **Professor Sit Tony** has been awarded the **Faculty Exemplary Teaching Award 2014**. Congratulations to Professor Sit!

▶ **Best Teaching Assistant Award 2014-15**

Mr. Yip Cheuk Fung and **Mr. Kwok Kai Yin** were awarded the Best Teaching Assistant Award 2014-15 in recognition of their outstanding teaching duties. The prize presentation ceremony was held on 25 August 2015. Congratulations to Cheuk Fung and Kai Yin!

▶ **Pun Chi Seng Wins Best Student Research Paper Award at INFORMS**

Patrick Pun Chi-seng, a PhD student in the Statistics programme recently won the 2015 Best Student Research Paper Award for a paper he presented at the 2015 Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting in Philadelphia, the USA. This is the first time ever a PhD student from the Asia Pacific region has won this international competition. Patrick's award winning paper entitled "Combined Estimation-Optimization (CEO) Approach for High Dimensional Portfolio Selection". The paper investigates a constrained ℓ_1 -minimization for estimating the optimal control and applies it to the mean-variance portfolio (MVP) problems under static and dynamic settings when the number of assets (p) is larger than the number of observation times (n).

INFORMS has been sponsoring this student research contest since 2004. The contest invites postgraduate students from tertiary institutions all over the world to compete against one another in terms of research paper quality and presentation. The best four finalists are asked to present the papers at the INFORMS Annual Meeting. The first place winner receives a cash award of US\$500 and an award certificate. Previous winners include PhD students from Stanford University, MIT, Columbia University, the University of Illinois at Urbana Champaign and Carnegie Mellon University.

INFORMS is the largest society in the world for professionals in the field of operations research, management science, and analytics. INFORMS has held academic seminars and publishes internationally recognized academic journals, such as "Management Science", "Organization Science" and "Information Systems Research", to provide an academic exchange platform for professionals and scholars.



Learn more about the 2015 Best Student Research Paper Award of INFORMS at <https://www.informs.org/Community/Finance>

Overseas Research Award for PhD students

The recipients of the Overseas Research Award 2014-15 were **Mr. Feng Xiangnan** and **Mr. Wang Yifan**. They both undertook research at the University of North Carolina at Chapel Hill, USA under the supervision of Professor Hongtu Zhu, Department of Biostatistics, UNC.

Name	Destination	Period	Total Award Amount (in HKD)
FENG Xiangnan	University of North Carolina at Chapel Hill, USA	27 June to 27 August 2015	\$26193.50
WANG Yifan	University of North Carolina at Chapel Hill, USA	27 June to 27 August 2015	\$26193.50

Conference Support to Postgraduate Students

Student Name	Conference Details
DONG Fangyuan	The 2nd IMA Conference on Mathematics in Finance in Manchester, UK from 18-19 June 2015 The 19th International Congress on Insurance: Mathematics and Economics in Liverpool, UK from 24-26 June 2015
KWOK Kai Yin	The 19th International Congress on Insurance: Mathematics and Economics in Liverpool, UK from 24-26 June 2015
FENG Xiangnan	2015 Joint Statistical Meetings, Seattle, USA from 8-13 August 2015
OUYANG Ming	2015 Joint Statistical Meetings, Seattle, USA from 8-13 August 2015
WANG Yifan	2015 Joint Statistical Meetings, Seattle, USA from 8-13 August 2015
YANG Ping	2015 Joint Statistical Meetings, Seattle, USA from 8-13 August 2015

List of Recipients of Advantage Trust Statistics Scholarship

Name of Awardee	Major / Year in 2014-15	Amount (HK\$)
Mr. CAO Kailun	STAT / Yr 1	10,000
Mr. CHEUNG Wai Kei	STAT / Yr 1	10,000
Mr. FONG Tsz Yip	STAT / Yr 1	10,000
Mr. IP Shing Fung	STAT / Yr 1	10,000
Mr. LAM Ming Ho	STAT / Yr 1	10,000
Mr. LAW Wai Kwan	STAT / Yr 1	10,000
Mr. TO Sum Yu	STAT / Yr 1	10,000
Mr. YAU Wai To Jacob	STAT / Yr 1	10,000
Ms. MAN Pui Yi	RMSC/ Yr 1	10,000
Mr. TSANG Man Yiu	RMSC/ Yr 1	10,000
Mr. CHAN Chun Ho	STAT / Yr 2	2,000
Ms. CHEN Mengru	STAT / Yr 2	2,000
Ms. LAM Ka Yu	STAT / Yr 2	2,000
Ms. LIU Jianmin	STAT / Yr 2	2,000
Ms. WONG Cho Ting	STAT / Yr 2	2,000
Ms. ZHAO Qianyu	STAT / Yr 2	2,000
Mr. CHAN Sing Hang	RMSC / Yr 2	2,000
Mr. CHEUNG Mun Lau	RMSC / Yr 2	2,000
Mr. HUNG Siu Chung	RMSC / Yr 2	2,000
Mr. KWOK Ming Ho	RMSC / Yr 2	2,000
Mr. CHAN Lok Hang	STAT / Yr 3	2,000
Ms. KWOK Chin Kiu	STAT / Yr 3	2,000
Mr. LAI Tsz Wai	STAT / Yr 3	2,000
Mr. NG Yi Cheong	STAT / Yr 3	2,000
Ms. WONG Wing Tung	STAT / Yr 3	2,000
Mr. NG Chun Kit	RMSC / Yr 3	2,000
Mr. CHEN Xinyuan	STAT / Yr 5	2,000
Mr. LI Zhongyu	RMSC / Yr 4	2,000
Mr. ZHOU Zhihao	RMSC / Yr 4	2,000
Mr. YU Haihan	RMSC / Yr 5	2,000

Department Activities

Hiking at Ma On Shan Country Trail

Autumn is the best season for an outing. On 28 November 2015, staff and postgraduate students went hiking at Ma On Shan Country Trail, followed by seafood dinner at Sai Kung. Over 40 staff and students attended the event.



Left: Staff and students enjoy the beautiful scenery at Ma On Shan

Upper right: Staff and students reach MacLehose Trail Lower right: Prof. Shao (Centre) and postgraduate students

2015 Joint Statistical Workshop of the CUHK & Academia Sinica

We endeavor to establish academic linkage with mainland and overseas renowned institutions so as to facilitate long-term collaborations with them. In April 2015, eight faculty members and six research postgraduate students participated in the 2015 Joint Statistical Workshop of The Chinese University of Hong Kong and Academia Sinica in Taipei, Taiwan. During the two-day meeting, 21 academic talks were delivered. The students were supported by the Taiwan Collaboration Fund offered by the Office of Academic Link, CUHK. Here are the highlights of the events. You may also visit <http://www3.stat.sinica.edu.tw/2015cuhkas/index.html> to know more about this event.

Apr
19
2015

Opening remarks by

Ching-Shui Cheng



Qi Man Shao



Hoi Ying Wong



Session
1

Chair:

Phillip Yam



Speakers:

Tony Sit



Hsin-wen Chang



Session
2

Chair:

Ci-Ren Jiang



Speakers:

Yuan Yuan Lin



Session
3

Chair:

Ying Ying Wei



Speakers:

Hsin-Chou Yang



Xiaodan Fan



Yifan Wang



Session
4

Chair:

Hsin-wen Chang



Speakers:

Ci-Ren Jiang



Yang An



Ying Wang



Yuan-Lung Lin



Department Activities



Apr
20
2015

Session
5

Chair:

Xiao-Dan Fan



Speakers:

Tai-Chi Wang



Chun Yip Yau



Frederick Kin Hing Phoa



Session
6

Chair:

Tso-Jung Yen



Speakers:

Ying Ying Wei



Ping Yang



Session
7

Chair:

Frederick Kin Hing Phoa



Speakers:

Phillip Yam



Ting-Li Chen



Session
8

Chair:

Yuan Yuan Lin



Speakers:

Tso-Jung Yen



Zheng Zhang



Jie Hu



Shih-Kai Chu



Our Ph.D. students found the Workshop valuable as their educational and experiential learning have been enhanced. Two of them would like to share their experiences with us.

Wang Yifan (Ph.D. in Statistics)

I am much honored to be selected as a student participant to attend the Joint Statistical Workshop of CUHK and Academia Sinica in Taipei on 19-20 April 2015. During the two-day workshop, I have the opportunity to learn about a number of cutting edge research topics from many prominent researchers from CUHK and Academia Sinica, and also share my own research topic with the other speakers.

In the first day of the workshop, I reported my research topic regarding Bayesian quantile structural equation model, which is an extension of the conventional structural equation model, that provides a more comprehensive assessment of the interrelationships among latent variables and performs more robust.

Apart from my own presentation, I also had a great opportunity to listen to other professors and graduate students' talk so as to learn something about their research in different areas, and see how they explain their work and organize the talk to make it easier to understand. For example, I found the presentation of Prof. Yau Chun Yip very clear. I did not have much background in time series. Because Prof. Yau introduced the topic from the most basic models and explained thoroughly the motivation and idea of each step, I found it not difficult to follow his talk. During his talk, a slight earthquake suddenly took place. However he was not affected at all and could finish the presentation successfully.

I would like to take this opportunity to thank Prof. Shao and our department for providing such an excellent opportunity for us. I hope such activities can continue so that more students can reach out and interact with statisticians in other world renowned institutions.



Yang Ping (Ph.D. in Statistics)

My presentation was scheduled in the morning of 20 April. The title of my presentation was Multiple Comparisons with Two Controls for Ordered Categorical Responses. This research was conducted under the supervision of Professor Siu Hung CHEUNG and Professor Wai-Yin POON. Our research is to compare the efficacy of several treatments with two controls for the cases where the responses of the clinical study are ordered categorical. The responses are conceptualized as manifestations of an underlying continuous variable and the normal latent variable model is used. We develop the multiple comparison method which controls the familywise type I error rate at a pre-specified level, and propose a procedure to evaluate the required sample size such that a given level of test power is guaranteed. Our proposed method is also illustrated by an example from a clinical study.

After a twenty-minute presentation, I answered some questions from both research fellows from Academia Sinica and professors from our department. Discussing my research with them was really enlightening. Another impressive moment was in the morning of 20 April. We felt an earthquake occurred but still remained on the seats and listened to Prof. Yau's talk. On those days, we were always together in the meeting room, learning, communicating and networking. The workshop provided me with a valuable opportunity to learn from all the other participants of the workshop. In the leisure time, we got a taste of wonderful local cuisine. I am very thankful to have such an enjoyable and memorable trip.

Conference in Quantitative Finance In Honor of Professor Tze Leung Lai



The HKU, CUHK, HKUST and Stanford have jointly organized a conference entitled Conference in Quantitative Finance In Honor of Professor Tze Leung Lai from 11-12 December, 2015. The conference on 11 December was held at the Chinese University of Hong Kong. Here are some snapshot photos of the event.



Opening remark by
Professor Qiman Shao

Session 1

Chair



Professor Hoi Ying Wong

Speaker



Professor Duan Li

Title: Bettering Investment Performance by Integrating Historical Data and Market Implied Information

Speaker



Professor Ngai Hang Chan

Title: Non-stationary Time Series: Econometrics to Statistical Finance

Session 2

Chair



Professor Phillip Yam

Speaker



Professor Tony Sit

Title: Simulation-based Value-at-Risk for High-dimensional Nonlinear Portfolios

Speaker



Professor Ning Cai

Title: A Unified Framework for Pricing Asian Options under Markov Processes

Session 3

Chair



Professor Chun Yip Yau

Speaker



Michael Powers

Title: Berry-Esseen Bounds for Compound-Poisson Loss Percentiles: A Reinsurance Application

Speaker



Professor Alain Bensoussan

Title: Dynamic Programming in Mathematical Finance

Session 4

Chair



Professor Zhiliang Ying

Speaker



Professor Xunyu Zhou

Title: Time Inconsistency

Speaker



Professor Xin Guo

Title: Mean Field Game with Singular Controls

Distinguished Lectures

The Department organized a number of seminars and distinguished lectures in 2015. We are happy to highlight the distinguished lectures below. Please also visit our website for past events that the department conducted.

9 January 2015



Prof. Tony Cai
**Recovery of high-dimensional
low-rank matrices**

20 January 2015



Prof. Jiangqing Fan
**Multi-task quantile regression under
the transnormal model**

11 February 2015



Prof. Zhiming Ma
概率統計，魅力無限

30 April 2015



Prof. Tze Leung Lai
**Hybrid resampling, the Higgs boson, and valid
frequentist inference in Bayesian and other
adaptive designs of confirmatory clinical trials**

18 June 2015



Prof. Xuming He
**Bivariate quantile and statistical downscaling
for climate projections**

20 June 2015



Prof. Tony Cai
**Optimal estimation of nonsmooth
functionals**

27 November 2015



Prof. Howell Tong
Tests for TAR models vs. STAR models –
a separate family of hypotheses approach

16 December 2015



Prof. Zhiliang Ying
Statistical analysis with latent space models

Alumni Announcement

30 Year Reunion Dinner

CLASS OF 1986 - 2016
3rd June 2016

Thanks to our present and former chairmen for their leadership that led to the success of the department, 2016 welcomes its 30th cohort of graduates. The Alumni Association of the Department of Statistics will be holding a "30 Year Reunion" Dinner to celebrate.

Details of the event are as follows:

Date: June 3, 2016 (Friday)
Time: 7 to 11 p.m.
Venue: 3/F The Millions, Happy Valley Racecourse



* Children ages 3–12 can enjoy 50% off.

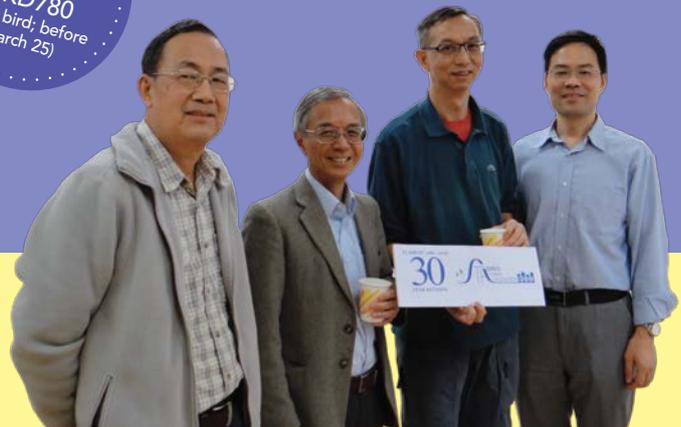
Net proceeds after deduction of costs will be donated to the "CUHK Statistics Alumni Scholarship".



Logo designed by Mr. Luk Ka Lai (03 STA)

PAYMENT OPTIONS/ENROLLMENT GUIDELINES

- (A) Crossed check payable to Alumni Association of Department of Statistics, CUHK (Mailing address: STA30 Reunion Committee, Room 119, Lady Shaw Building, The Chinese University of Hong Kong, Shatin, HK). Please also provide your (1) full name, (2) year of graduation, (3) contact number/e-mail, and (4) number of adults + children.
- (B) Direct transfers to Hang Seng Bank a/c 283-0-360927. Please e-mail a copy of the receipt to alumni@sta.cuhk.edu.hk together with your (1) full name, (2) year of graduation, (3) contact number/e-mail, and (4) number of adults + children.

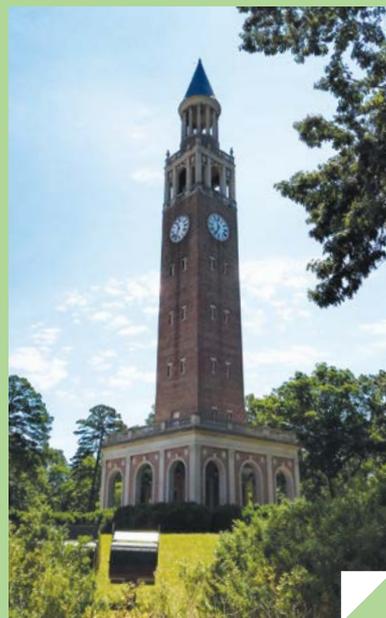


Our present chairman and former chairmen.

From left to right: SY Lee, Howell Tong, NH Chan and QM Shao.

Sharing from Awardees of Overseas Research Award

Feng Xiangnan (Ph.D. in Statistics)



With the generous support of the Overseas Research Award offered by the department, I visited Prof. Hongtu Zhu of the Department of Biostatistics at the University of North Carolina at Chapel Hill (UNC) from 27 June 2015 to 27 August 2015. The following statements briefly summarize this delightful journey:

1. Under the guidance of Prof. Zhu, I initiated a study on the missing data problem in the framework of the Bayesian functional regression model. Investigating massive and complex functional data is significant to current statistical applications; to this end, we developed the model and conducted several experiments on simulated 1-D functional data. Nonetheless, the extension of the model that addresses the missing data in 3-D functional data remains under consideration.
2. During the visit, I attended the 2015 Joint Statistical Meeting in Seattle to present a joint work with my supervisor at CUHK, Prof. Xinyuan Song. Some of the participants expressed interest in our research.
3. A few interesting workshops on the analysis of functional and imaging data were hosted by Prof. Zhu at the Statistical and Applied Mathematical Science Institute (SAMSI). Through these inspiring seminars or

workshops, I gleaned ideas regarding the cutting-edge research conducted in this field, which shed light on my future research projects. I highly recommend the website of SAMSI (<http://www.samsi.info/>) to the students of the department because reading materials and videos of the workshops are made available to the public; this information may be useful for the students.

4. I also met with the Ph.D. students and post-doctoral scholars mentored by Prof. Zhu, who were quite friendly to me and helped me significantly in both daily life tasks and in conducting my research. I feel fortunate to have had the chance to become friends with them.

Finally, I would like to express my deep gratitude to my supervisor, Prof. Xinyuan Song, and my supervisor at UNC, Prof. Hongtu Zhu, for supporting me and encouraging me to take this valuable opportunity. I would also like to thank the department chair, Prof. Qiman Shao, for launching this excellent program and for endorsing my application. Furthermore, I thank my friends and classmates in UNC for assisting me throughout the visit. Finally, I am grateful to the department staff for aiding me throughout the entire process.

Wang Yifan (Ph.D. in Statistics)



I had the opportunity to visit the University of North Carolina at Chapel Hill (UNC) from 27 June to 27 August 2015 through the sponsorship of our department's Overseas Research Award. During my visit, I conducted a research project related to neuroimaging data analysis under the supervision of Professor Hongtu Zhu in the Department of Biostatistics.

Neuroimaging involves the use of various techniques, such as CT, MRI and PET, to project the structure and function of the nervous system. Subsequently, the relationship between these images and some specific brain diseases is identified. However, neuroimaging data are often highly dimensional and correlated; therefore, they are difficult to analyze through existing methods. New models must be developed to address these challenges; to this end, my research proposes a new Bayesian approach for a scalar-on-image regression model, which treats brain images as independent variables and some of the scalar variables related to diseases as responses. This new method is applied to an actual data set to study the brain areas related to Alzheimer's disease.

Initially, I completed a literature review, generalized a few existing models, and finished the theory and coding of my algorithm; however, I soon realized that the program was inefficient for high-dimensional data. On occasion, an entire night would be required to run a group of simple simulation data; thus, I determined an approach to simplify the time-consuming computations of high-dimensional matrices. After reading many papers, I identified a theorem that can be applied to my problem in one thesis; consequently, the running time of the revised program was reduced to half a minute.

This overseas research project has been an unforgettable experience for me and has helped me significantly in conducting my research as well as in planning my future academic career. I wish to thank Prof. Song and our department for providing me with such a great opportunity.

Sharing from Zhang Zhuosong at the Global Young Scientists Summit



Zhang Zhuosong at the opening ceremony

In January 2015, I was honored to be given an opportunity to attend the Global Young Scientists Summit (GYSS@one-north) held at Nanyang Technology University (NTU), Singapore. GYSS@one-north is a gathering of young scientists and researchers (Ph.D. and post-doctoral students) from all over the world as well as of renowned international science and technology leaders in Singapore. This multi-disciplinary summit covers topics ranging from chemistry, physics, medicine, mathematics, and computer science to engineering. The speakers at GYSS@one-north are globally recognized scientific leaders who have been recipients of the Nobel Prize, Fields Medal, Millennium Technology Prize, Turing Award, and the

IEEE Medal of Honour. The summit was an excellent opportunity for me to make new friends, to expand my knowledge, to be updated on the most recent academic processes, and to appreciate the presence of these top science and technology leaders. The theme of GYSS this year was "Ageing in Place."

From CUHK to NTU

Three CUHK students attended the GYSS: Alden Leung and Yilo Ng from the School of Life Sciences, and Kang Wei from the Department of Chemistry. We reached NTU on the morning of January 18 and checked into the hotel at noon. The hotel is situated in NTU and was difficult to locate because the campus is large. After checking in, we walked around the NTU campus and enjoyed the beauty and culture of the university. Unlike CUHK, NTU is not bordered by mountains, and the roads on campus are considerably flatter. Moreover, we often spotted flags labeled "The GYSS," as well as cars marked with "GYSS" during our walk; all of these details filled us with expectations for the opening ceremony.

The opening ceremony

At nightfall, we were informed that the opening ceremony was to begin and that a bus was waiting to take us to the site. We entered the main hall along with all the participants from different parts of the world. The opening ceremony started on a lively note with an energetic dance performance by the students from Jurong West Primary School, which was entitled "Voyage to a New Life" and depicted the journey of villagers who worked hard to overcome challenges and to build a new homeland in a distant country.

The guest of honor at the GYSS 2015 Opening Ceremony was Deputy Prime Minister (DPM) Teo Chee Hean, who is the Coordinating Minister for National Security and Minister for Home Affairs as well as the Chairman of the National Research Foundation, Prime Minister's Office, Singapore. In his opening speech, DPM Teo stated that science and technology has shaped Singapore's development throughout the years, and he stressed that the country's future will continue to be built on this basis.

The ceremony ended with another high-energy dance performance by the students of NTU's Cultural Activities Club that involved the hip-hop moves popularized by Michael Jackson.

The eminent science leaders

In the next four days, many eminent leaders gave excellent speeches. At this point, I wish to highlight the speaker who left the deepest impression on me.



Sir Tim Hunt

This senior scientist is Professor Sir Tim Hunt, who was awarded the Nobel Prize in Physiology or Medicine in 2001. He kicked off the first day of GYSS 2015 with his plenary lecture

entitled "How to Win a Nobel Prize: Secrets of Cell Division." He stated that, "In the path of science, the true path rarely leads in a straight direction. There's always a special hill you go down, you can see if you can get to there. But where the road goes over the other side of the hill, you really don't know. You have to have faith that the road actually is going somewhere. Because in this business, there aren't any maps actually, you're your own mapmaker, and that's why science is such an interesting thing to do." Aside from his excellent lecture and profound knowledge, his humor in particular impressed me. All of the speakers participated in a panel discussion that afternoon, and at its conclusion, a participant from the audience requested a photo of the panel. Sir Hunt responded in kind, "Let me take a picture of you too!"



Let me take a picture of you too!



Enjoying Seafood



Tony was telling the history of Singapore

The food session

Every evening, we participated in special activities, the most impressive of which was the food session.

Singapore is known as a food paradise and offers many types of seafood and Southeast Asian food. We joined a food trail, and the organizers brought us to the eastern part of Singapore for a taste of the country. During the trip, our guide, Tony Tan, first told many stories about the origins of Singapore and its development over the years. Then, he toured us around the street and shared information about the related culture as well as stories about the area. The participants originated from various parts of the world; thus, many were not knowledgeable about Chinese culture. Tony also took us to Chinese stores to tell relevant stories. Finally, we went to a seafood restaurant and enjoyed a sumptuous meal.

New friends

Although the summit lasted only a week, I gained many new friends.

The first one is Alden, who, as mentioned before, is a local student from the School of Life Sciences. During the summit, we often attended the same activities and talked about Hong Kong. I also asked him to teach me how to properly say my family name of Zhang, which is really difficult for me to pronounce in Cantonese. After returning to Hong Kong, we continued to meet on occasion and exchange ideas about our respective studies.

Another is Tinyi Chu, who graduated from CUHK and is currently studying in America. He is an Electrical Engineering major, and his research direction is machine learning. Tinyi told me that he needed to conduct substantial data analyses and wished to learn about probabilistic and statistical theory. Some weeks ago, he returned to CUHK for a workshop, and we had a chance to meet and enjoy a wonderful lunch.

Through the GYSS, I made many friends and learned about some of the most recent issues in the science world. I also met many Nobel Prize winners and was inspired by their profound knowledge and extraordinary grace. I believe that this extraordinary experience is invaluable, and I will never forget it.

Internship Sharing

In the past summer, five Statistics undergraduates worked as summer interns at the Census and the Statistics Department of HKSAR for two months. This internship allowed the students to combine theory with real-life working experience and was definitely an invaluable experience for them that lay the foundation for a profession in statistics. In addition, the students of the Risk Management Science Program were employed as summer interns in different financial institutions. The following paragraphs detail their experiences.

Wong Hoi Ying (B.Sc. in Statistics)

I am grateful to have participated in the Professional Attachment Program organized by the Census and Statistics Department (C&SD) from June 2015 to July 2015. During the internship period, I was assigned to the branch of Balance of Payments (BoP) under the Economic Statistics Division of C&SD. The experience was valuable and became the cornerstone for my future career.

During the internship, I was assigned to accomplish two tasks: the first was to construct a sampling frame for sampling. The BoP statistical data are established by reviewing the financial accounts of local companies, which are selected based on the hierarchical structures of local enterprise groups. My main duty was investigating the structures and associations between local and offshore companies. Thus, the sampling frame was improved to account for these statistical data.

The second task was exploring the markets of derivative warrants (DW) and callable bull/bear contracts (CBBC) as well as computing the statistical information for these markets. The capital flow in the DW and CBBC markets can be modeled to account for the statistical data by examining the regularities of behavior in these markets.

For me, the internship was a pleasant experience that broadened my horizons and enabled me to learn techniques hands-on. First, the program provided a valuable opportunity for me to apply my knowledge, such as my computational skills in relation to R, to real-life data. Second, the internship provided me with a platform to handle raw data, which differed significantly from the cleaned data employed during lectures. This opportunity equipped me with the skills to handle raw data effectively. Aside from sharing various techniques, my supervisor guided me and helped me perform my duties as well as plan my future career. Thus, my internship experience was enjoyable and beneficial.

Ho Chi Yeung (B.Sc. in Statistics)

During the internship program, I was assigned to the Special Duty Team in the Social Statistics Branch (2). My section was considerably smaller than the other sections; in fact, it consisted of only two people: my supervisor and myself. This discovery was surprising for me because I assumed that I would be working in a team.

Throughout the two-month internship period, I mainly worked on the publication of "The Women and Men in Hong Kong – Key Statistics (2015 Edition)." This publication is unique because it collates statistical data from other surveys or publications; thus, data need not be collected and statistical numbers did not require calculation. As a result, most of my time was spent on the technical tasks of compiling and reviewing statistical tables. In the Census and Statistics Department, the house



standard of publications is very strict and formal; the standard demonstrates how numbers and tables should be presented, and professional statisticians adhere to this standard strictly to ensure clarity.

Another major task was the error-checking process, which was repetitive and required substantial concentration. Even senior statisticians must perform this task, which is exhausting work; however, I never heard the statisticians or officers complain. I admired this professionalism the most.

In conclusion, the internship was a valuable experience for me in terms of learning from the seniors. I was grateful that my supervisor assisted me significantly at work and shared many experiences with me.

Feng Menglu (B.Sc. in Risk Management Science)

Last semester, I worked as a part-time intern at Numerix in line with the practicum program. The firm provides risk management solutions for financial market participants, and I was tasked with developing the process of a new risk management platform for FX exotic derivatives.

I was mainly responsible for quality assurance testing to avoid problems in delivering solutions to clients. While performing such tests, I needed to design various test cases, to investigate and record all problems, and to communicate with the supervisors and programmers in Taiwan in a timely manner. The test cases covered all aspects of the platform, including pricing, Greeks, portfolio analysis, administrative management, and user preference settings. The test cases must also be reviewed

several times to complete the comprehensive testing process and to prepare for the subsequent regression testing.

The internship program was an excellent opportunity for me to be familiarized with various exotic FX derivatives and with concepts of risk management in the real market under the kind guidance of my supervisors. This experience supplemented what I learned in the classroom and was an excellent opportunity for me to gain insight into the project management process. This opportunity not only served as an alternative learning approach but also provided insights into the necessary preparations for a career in risk management.

Poon Ka Yu (B.Sc. in Statistics)



In this internship program, I was assigned to the Sectoral Economic Statistics Branch (3). This office is responsible for collecting information and the money flows from all the economic activities in Hong Kong. My job was to conduct research on the development of the asset-management industry and on Fintech.

Throughout the research process, I learned much about Fintech products, such as P2P lending, and their influence on the financial market. I also understood the C&SD operation, including the collection and editing of data as well as analyzing and releasing reports. Aside from clarifying the operation of our department, I also learned how to get along with my colleagues, which is really valuable and memorable.

This program gave me an opportunity to work in an office that is related to my major. I believe that this work experience strengthens my candidacy for employment in the future because I gained experience and learned much over these two months. This experience also helped me determine the direction of my career, which clarified my future plans.

Chung Wing Ham (B.Sc. in Statistics)

Working as a summer intern for Census Planning Section 1 (CP1) of the Census and Statistics Department (C&SD) helped me develop and learn about different types of statistical knowledge. Moreover, I definitely gained much knowledge about this Section, which mainly focuses on the overall planning of population censuses/by-censuses and on pre-operation preparations such as sampling and methodological studies.

The two major internship tasks were to review the estimation method of the 2011 Hong Kong Population Census (11C) and to study the estimation method for the 2016 Hong Kong Population By-census (16BC). I examined the materials on the estimation method of 11C and the 2006 Population By-census (06BC), including the research papers published in other countries. The staff assisted me in learning about the sample design and the estimation methods of censuses and by-censuses, such as generalized regression estimation (GRE).

I also spent much time reviewing the SAS programs in 11C. A simulation study was conducted on 16BC under some scenarios. I modified these programs, which strengthened my background and skills in this software.

To be honest, I did not know much about censuses prior to this internship; as a Statistics major, I was quite embarrassed about this fact. Fortunately, I learned much during this internship, such as the sample designs and estimation methods applied. I am grateful to the Department of Statistics and to C&SD for giving us this valuable opportunity.



Ma Yun Shing (B.Sc. in Risk Management Science)

I worked as an intern for the Benchmarking Team of the Health and Benefits Department at Aon Hewitt, Aon Hong Kong Limited for eight months.

My primary duties were to develop new VBA programs as well as to update and debug existing VBA programs. To perform these tasks, I needed to apply the programming skills I learned from my school courses; thus, I was provided with a good opportunity to learn how to apply textbook knowledge to practical projects. Among the greatest challenges of the task was debugging an existing program with a lengthy code; this process was even more time-consuming than developing a new program was. I had to read the entire program, understand the algorithm first and then design a feasible algorithm to solve the problem. Completing all the tasks could take a week.

Aside from improving my hard skills, I enhanced my soft skills, such as communication, through this internship experience. When I discuss programming in school, I never avoid using technical terms; however, I could not do so in the office because most of my colleagues do not have any programming knowledge. I had to explain programming logic in simple terms to ensure effective communication, which is crucial in this workplace.



Moreover, I was required to present my work to my colleagues well so that they could communicate these ideas to their clients.

I feel very fortunate that I could take part in an internship program that provided me with the opportunity to apply my textbook knowledge to practical projects in a real working environment. Each time I completed a task, I became confident in my ability; therefore, the valuable skills I learned from this internship experience absolutely helped me prepare and equip myself for my future career.

Cheung Hiu Kit (B.Sc. in Statistics)



This summer, I was fortunate enough to join the internship program initiated by the Statistics Department of CUHK and the C&S Department of HKSAR. This program was conducted in two parts: I worked in the Technical Secretariat of the C&S Department of HKSAR and assisted Professor Fan Xiaodan on a statistical project.

The Technical Secretariat of the C&S Department of HKSAR develops new or modified methods to enhance the effectiveness of the activities in the C&S Department. During my internship, I was mainly responsible for writing an R program to assign manpower for the purpose of conducting censuses in different working regions based on the residences of the staff. This program aimed to minimize cost. The supervisor guided me in viewing the

problem as a non-linear optimization with constraints; hence, I used R to determine the best solution. For me, this experience is special because I applied R for the first time to address a real-life problem based on mathematic ideas. After having worked in this office for two months, I learned much about the style of the department and how the problem should be handled.

Professor Fan also guided me in identifying via statistical estimation the type of surface (symmetric or non-regular) that can minimize the reflection of urine when a droplet hits the surface of a urinal. This estimation is based on the idea that the input parameters (impact speed and impact angle, among others) follow specific distributions. In the first part of the study, I needed to read a few references to attain a basic idea of how droplets react when hitting a surface; however, I failed to clarify the concepts because droplet reflection is a difficult topic in Physics. Thus, I believe that we must prepare thoroughly to conduct an effective study.

Both parts of the internship program provided valuable experiences for me in terms of future study and even in my prospective occupation. I learned much about the C&S Department of HKSAR and about the techniques used to study a statistical problem.