THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學

康復治療科學系
Department of Rehabilitation Sciences

Summer 2016 Newsletter

impact

TOUCHING LIVES, MAKING AN IMPACT

Also in this issue

COVER STORY

Compression orthesis helps patients with varicose veins and knee pain

Bronze Medal in Geneva's Invention Expo

Dr Guo Xia
Associate Professor
Basic and Integrated Rehabilitation Sciences

Group photo of other PolyU awardees at the 44th International Exhibition of Inventions of Geneva

Dr Guo Xia introduces her products to the guests

Varicose veins and knee pain are common problems affecting many people in Hong Kong. It was that found 60% subjects have chronic venous insufficiency and knee arthritis at the same time. High-risk individuals, such as people who have to stand or sit for long periods, obese people and pregnant women, can put on a compression orthesis during the daytime to prevent or alleviate pain.

Suitable compression hosiery and knee braces are crucial for patients. Most compression hosiery and knee braces on the market are not made especially for Asian legs and do not come in the sizes that many Asian people need, making their compression points fairly inaccurate. This may hinder the blood circulation of their users, causing leg swelling and even deep vein thrombosis.

In collaboration with Chemtax Ltd., The Chinese University of Hong Kong, Guandong Work Injury Rehabilitation Center, and the University of North Carolina, we conducted a two-year study to develop an integrated compression orthesis (comprising compression hosiery and a knee brace) designed to fit Asian legs. This design has the potential to prevent and heal varicose veins and knee pain. The data collected was used to build a human body figure and size system. A large visual data analysis was then conducted based on a mathematical model.

Adopting '3D hybrid weft knitting' technology, the integrated compression orthesis delivers bi-axial elastic tension and precise degressive gradient compression to improve the blood circulation of the legs and support the controlled mobilization of knee joints.

Designed based on anthropotomy and biomechanics, the compression orthesis can control the distribution and extent of progressive compression on the calves, thus preventing tourniquet effect or focal compression on overlapping areas of the legs. Additionally, the orthesis is made of medical fabrics and designed with seamless knitting, allowing it to be air-permeable and to prevent skin irritation. The orthesis thus offers its users both comfort and a perfect fit. The fabrics can even retain the same level of performance after being washed more than 200 times.

We were honoured to win a Bronze Medal at the 44th International Exhibition of Inventions of Geneva in Switzerland with this invention. Next year, we plan to launch a mobile app through which users can upload photos of their legs taken from different angles, allowing the system to calculate and produce compression hosiery and knee braces to fit different sizes.

PolyU Summer Programme 2016 Physiotherapy

17th Central Committee
Hong Kong Physiotherapy Concern

Hong Kong Physiotherapy Concern (HKPC) was honoured to be invited by the Department of Rehabilitation Sciences (RS) to facilitate the physiotherapy summer programme for secondary school students. This half-day programme allowed over 40 participants to get a glimpse of the learning routines of physiotherapy students. Both secondary school students and student helpers from HKPC benefited a great deal from the activities that took place.

The summer programme consisted of two main components, a mini-lecture on the knee joint and three practical classes on knee assessments, electrophysical therapy and therapeutic exercises. The participants were fully engaged in the interactive mini-lecture and able to learn about the anatomy of the knee joint as well as go through its relevant sports injury cases.

In the knee assessment practical session, the participants learned how to assess the ROM and muscle strength of the knee joint. More importantly, they all found it interesting to assess the ROM and muscle strength of other people under the supervision of their tutors. They were fascinated by the effect of hip joint position on the muscle strength of the hamstrings.

In the electrophysical therapy practical session, the participants played the role of physiotherapists performing skin sensation tests on their partners. Moreover, each of the participants got a taste of cryotherapy.

In the exercise session, participants were encouraged to design exercises related to different types of contraction and directions of applied resistance. Also, common therapeutic tools were shown to provoke students' ideas related to designing exercises. They enjoyed brainstorming examples of exercises and had a great time in learning therapeutic exercises.

All in all, this programme provided a platform for secondary students to interact and have discussions with current physiotherapy students as well as to get hands-on experience in what our students do during practical classes. Plus, it was a great opportunity to teach the participants about the qualities a good physiotherapist should possess and about our roles in treating different patients in various settings.

Innovation and Technology Scholarship Award Scheme 2016

Mr CHAN Mui Sing, Sam
Ms IP Hiu Tung, Joan
Ms YEUNG Hoi Ting, Janice
Year 3, BSc(Hons) in Physiotherapy

It is our honour to be three of this year's four awardees of The Hong Kong Polytechnic University (PolyU) Innovation and Technology Scholarship Award Scheme 2016. The scholarship provides up to HK$150,000 in funding to each awardee to use in studying overseas during the 2016-2017 academic year. With the Scheme, each of us is matched with a mentor who will provide advice on our personal and career development. Additionally, the Hong Kong Federation of Youth Groups (the Scheme's organizer) provides us with a chance to promote interest in physiotherapy and rehabilitation sciences among young people.

(From left): Ms Janice Yeung, Mr Sam Chan, President Timothy W. Tong, Ms Anita Ongsky (awardee from BSc (Hons) in Radiography) and Ms Joan Ip take a group photo at the award ceremony.

Mr CHAN Mui Sing, Sam (Year 3)

The scholarship helps fund my overseas placement at Curtin University (Australia) in the coming summer. My mentor is Prof. Tony Chan, the President of The Hong Kong University of Science and Technology. He will guide me in contributing to the innovation and technology development of Hong Kong.

The scholarship awardees come from different universities and from different departments. Therefore, we are provided with the chance to cooperate with other disciplines in the future to develop rehabilitation technology.

The alumni association is another special feature of the Scheme. It has connected us with senior students of physiotherapy. We will definitely learn a lot from their experience.

Ms IP Hiu Tung, Joan (Year 3)

With the scholarship funding, I will have my overseas clinical placement at the University of Alberta (Canada) in the second semester of my fourth year. I also plan to use this precious opportunity to attend some conferences related to musculoskeletal or rehabilitation technology so as to widen my horizons and better plan my future physiotherapy career.

I am so glad to have Prof. Paul Tam, the Provost and Deputy Vice-Chancellor of The University of Hong Kong, as my mentor. I first met him in the award presentation ceremony. He is nice, friendly and willing to share his experiences in the medical field with me. I am looking forward to learning from him in the near future.

Along with from the opportunity to improve myself, the service project programme also catches my attention. "Take from society, give back my all" has long been my motto, and the service project gives me an unprecedented chance to cooperate with awardees from different science backgrounds to enlighten young people's enthusiasm for science.

Ms YEUNG Hoi Ting, Janice (Year 3)

The scholarship will fund my overseas placement at the University of Toronto (Canada) in the second semester of my fourth year. My mentor this year is Dr Eric Chien, who is an orthopedic doctor. I will be visiting his clinic later this year to learn more about rehabilitation in different settings. I have also joined the local internship programme arranged by the organizer to integrate my knowledge into practice. I will do my internship with the Faculty of Medicine at The University of Hong Kong and assist in research projects this summer.

During the briefing sessions and the award presentation ceremony, I have come across awardees from different disciplines and interests. Through our interaction, we have come to have a deeper understanding of the current development of different disciplines. I am looking forward to the upcoming activities, and it will definitely be a fruitful year for me.

Acknowledgement

Last by not least, we would like to express our gratitude to RS and Prof. Ella Yeung, who nominated us and supervised us with dedication throughout the process of applying for the scholarship.

RS Retreat – 5-year plan for RS

Mr Tony Wong
Clinical Associate - Occupational Therapy

Hello Mickey, Minnie, Donald Duck and other famous characters from Disney. The RS Annual Retreat 2016 was successfully held on 26-27 May 2016 and was filled with a lot of fun, a lot of sharing and many constructive suggestions.

The theme of this year's retreat was "5-year plan for RS". We had a two-day programme, which began with our Chair Professor of Rehabilitation Sciences and Head, Prof. Gabriel Ng, giving an opening speech entitled "An overview of the development of RS over the last 15 years". The speech provided a great reflection on our efforts and contributions, as well as our achievements, over the past 15 years. It was a very good review of our RS programme for both senior colleagues and new staff. The first day of the programme focused more on how we might be better prepared to align with the university's strategic plan. All the groups engaged in very fruitful discussions and provided us with plenty of new ideas to reflect upon. The common objective of those groups was to help our RS move to higher levels of success. When we emphasized "Work-Life Balance" in the afternoon, amazing and precious moments were experienced. All of us had a wonderful time full of laughter and joy at Disneyland. This gave us the chance to relax our minds for the next day of the programme.

The first day of fun was followed by a relaxing night and then by the second day of the programme, the main objective of which was to consider the "5-year plan". We also divided the participants into four groups to discuss different challenges such as staff retention and choosing a new RS head and to consider other suggestions. This sharing time demonstrated that our staff is multi-talented and was, like an actor, able to present ideas in a dramatic format that encouraged our full participation in discussing the topic. The climax of the day was the "Loop a Loop" team building activity, which required us to use both our minds and bodies and to work together towards a goal. The winning team was led by Prof. Marco Pang. Before the end of the two-day programme, Prof. Gabriel Ng gave a very touching concluding talk and offered some words of advice to our new Head. The entire RS staff appreciated his heartfelt sharing of stories and reflection on his time as Head.

The two-day retreat programme was full of very fruitful and inspiring discussions, great food, good fun, smiling faces and the lovely Mickey.

Response to concerns about Anatomy Laboratory redevelopment

Prof. Gabriel Ng
Chair Professor of Rehabilitation Sciences and Head
Department of Rehabilitation Sciences

In the past few months, RS and other stakeholders of the Faculty of Health and Social Sciences have had some discussions about the possibility of redeveloping Y1444 (RS Anatomy Laboratory), and this issue had caused a lot of concern among students, alumni and professional bodies, particularly those within the physiotherapy profession. The main trigger for their concerns has been the rumour that the department has already decided to redevelop Y1444 for some other purpose and that the future mode of teaching anatomy in RS will change, the use of human cadavers being abolished and replaced by technologies.

The sentiments of the students and alumni about maintaining the quality of anatomy education in our programmes is fully understood, and the department would like to clarify that there were several meetings held with the anatomy teaching team, faculty dean and other key stakeholders, including student representatives, to consider the issue. The original idea of redeveloping Y1444 was based on the premise that such development could maximize the anatomy teaching resources and balance the needs of teaching and research for the entire faculty without compromising the learning environment of the students. After much consideration, however, it was decided that the plan to redevelop Y1444 was not feasible due to several technical problems, among them the relocation of the human cadaveric specimens from Y1444 to the faculty anatomy laboratory. In view of this, Y1444 will remain the RS anatomy laboratory, and the two points below summarize our department's response to the concerns of our students, alumni and professional bodies:

1. The teaching of anatomy in RS will continue to take place in Y1444.
2. The teaching mode, including the use of human cadaveric specimens, in anatomy education will continue as before.

Although the department will not proceed with the redevelopment plan for Y1444, in order to optimize the use of teaching resources among the faculty, the anatomy team in RS will work with the FHSS team to align the anatomy teaching facilities to improve the learning and teaching of anatomy for all students in FHSS. There is also a plan to introduce more advanced technologies to support the teaching of anatomy, but these technologies are not meant to replace the use of cadavers, at least not in the next few years.
I hope the above message has clarified the rumours circulating about the RS anatomy laboratory redevelopment. I would also take this opportunity to reiterate that the department will always make student learning our top priority.

An activity-based and blended approach to teaching and learning research methods and statistics

Prof. Marco Pang
Associate Head of RS
Subject Leader of RS 2050

RS2050 (Research Methods and Statistics) is a course designed for full-time students in the BSc (Hons) Physiotherapy and BSc (Hons) Occupational Therapy programmes. The previous structure of the course consisted of 24 hours of mass lectures, 14 hours of tutorials and 12 hours of laboratory sessions. Many challenges were encountered when teaching this course in previous years, including limited teaching hours, large class sizes and difficulty in linking research theory to clinical practice.

Our subject team was successful in obtaining funding from PolyU (e-learning and Blended Learning Development Fund) to develop a teaching and learning project entitled 'Learning research methods and statistical concepts using multimedia: An interactive blended learning model'. The proposed project aims to solve the above problems by adopting the blended learning approach along with the use of multimedia. The key features of the revised course curriculum include:

(1) E-lectures: The lectures are delivered using the e-learning platform with the use of multimedia, animation and interactive features to replace the face-to-face mass lectures. The students can learn a specific topic in their chosen place at their chosen time. To encourage the students to use the e-lectures, several online quizzes are given during the semester, which become part of the formative assessment. Several review sessions are also scheduled throughout the semester to reinforce the concepts learned before the students attempt the online quizzes.

(2) Online clinical-based learning tasks: Selected lectures are supplemented with online clinical-based scenarios. Video clips are used to illustrate these scenarios in order to make the learning experience more interesting. The students are required to analyse the information presented and provide solutions to the scenarios. This approach is intended to facilitate deep thinking and problem solving and to help the students appreciate the relevance of research to clinical practice.

(3) Activity-based laboratory sessions: Led by a facilitator, the students engage in various tasks in order to learn specific topics in small groups of six. The students thus have more interaction with the course material, their peers and the instructor through experiential learning.

We have conducted an online survey and focus group interviews to obtain feedback from the students on this new teaching and learning approach. Based on the feedback received, the subject team will continue to make the course better by creating more video-based scenarios for illustrating the key research concepts, enhancing the animation features of the e-lectures and providing more timely responses to the students' questions using the online platform.

Welcome to the New Faculty Members

Dr Stanley Winser - Assistant Professor (PT)

Dr Winser specializes in neurorehabilitation in physiotherapy. He completed his doctoral degree at the University of Otago (UoO), New Zealand in 2015. Dr Winser was awarded a full-time scholarship during his Ph.D. studies and also obtained competitive grants to attend conferences and conduct research at the UoO. Dr Winser built external collaborations with the University of Pittsburgh, USA during his Ph.D. studies. Upon the completion of his Ph.D. studies, Dr Winser worked as a part-time assistant research fellow in the Research Orthopaedic Surgery Section at the School of Medicine, UoO.

Dr Winser obtained his bachelor's degree in Physiotherapy in 2004 and then worked as a clinical physiotherapist at the Rehabilitation Centre of Christian Medical College, India, which is known to be one of Asia's best institutes for spinal cord and traumatic brain injury rehabilitation. While studying for his master's degree, Dr Winser won the Gold Medal for the Best Outgoing Student in Neurosciences in Physiotherapy for the year 2006. Following his master's studies, Dr Winser worked as a lecturer in Physiotherapy at Masterskill University, Malaysia between 2008 and 2011.

Dr Winser has a special interest in and inclination towards teaching and research. He has excellent communication and presentation skills, and his excellence has been proven at various international conferences. Dr Winser was awarded the 'Special Recognition Poster' in the Neurology section of the American Physical Therapy Association conference in North Carolina, USA in 2014. He has published academic articles in a number of international journals, including Clinical Rehabilitation, Disability and Rehabilitation, Clinical Journal of Pain and Physical Therapy Reviews.

Dr Clara Lee– Assistant Professor (OT)

Dr Clara Lee is both an occupational therapist and a psychologist. She received her professional training in occupational therapy from the former Hong Kong Polytechnic. Dr Lee specializes in paediatric rehabilitation and has solid clinical experience in local and foreign settings, such as the Glenrose Rehabilitation Hospital, Canada. Dr Lee completed her Master of Science in Applied Paediatric Neuropsychology at University College London (UCL), UK. After finishing her training in child neuropsychology, Dr Lee obtained the Provost Doctoral Entrance Award and began her Ph.D. in Educational Psychology at the University of Alberta, Canada. Dr Lee's doctoral dissertation investigated the effects of prematurity and training on the working memories of children.

Visits

2016 April 22 Shatin Methodist College

2016 May 20 King's College

2016 April 27 University of Southern Denmark

2016 June 15 Associations of Principals / Assistant Principals of Government Secondary Schools

2016 June 17 University of Toronto

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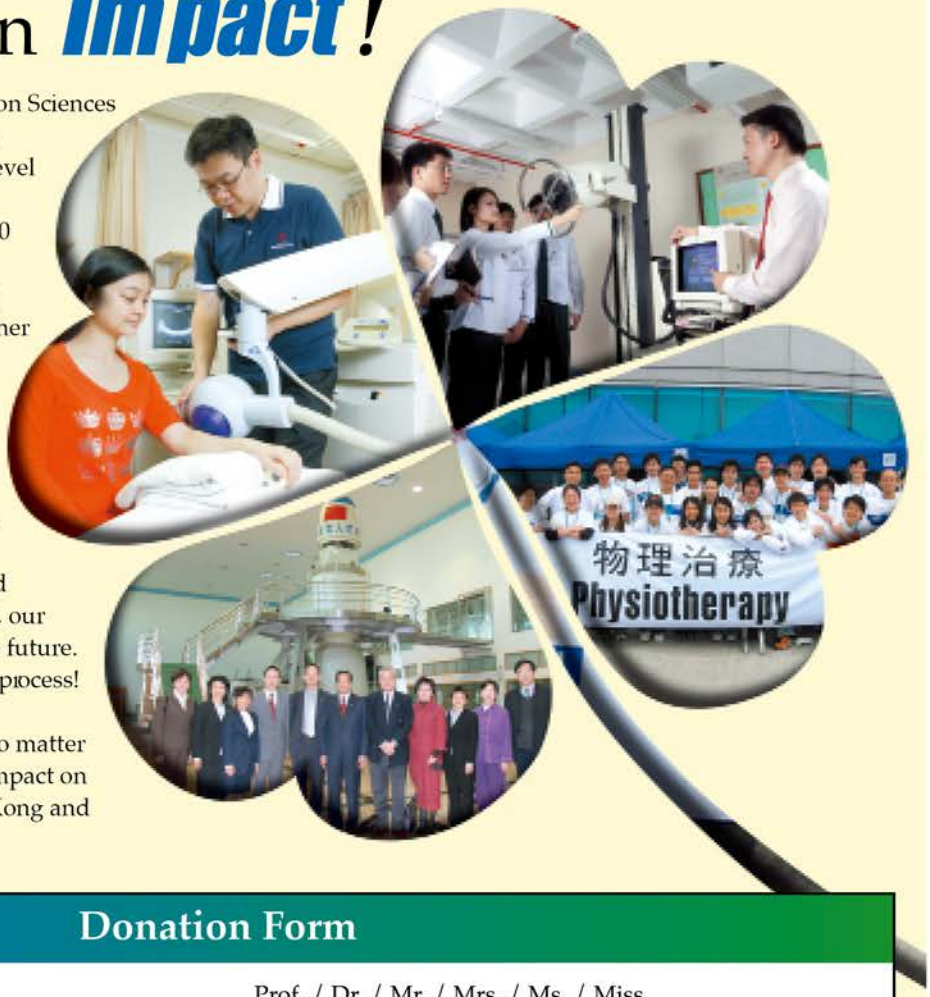
The Department of Rehabilitation Sciences (RS) has been providing high-quality internationally benchmarked entry-level education to occupational therapists and physiotherapists for more than 30 years. Our graduates are competent professionals serving clients in Hong Kong, Mainland China, and many other countries. We also offer excellent opportunities to practitioners and researchers to pursue further education from a disciplinary-specific or multidisciplinary perspective in rehabilitation sciences. In order to achieve its mission of providing high-quality education and mediating professional development, our Department still has a lot to do in the future. Your support is vital to facilitate this process!

Please offer your support by making a donation. Your donation, no matter whether big or small, will make an impact on the future of rehabilitation in Hong Kong and throughout the world.



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