



Dr. Hajah Rafidah binti Haji Gharif (middle), the Dean of Pengiran Anak Puteri Rashidah Sa'adatul Bolkiah Institute of Health Sciences, and Prof. David Koh Soo Quee (most left), the Assistant Vice-Chancellor (Research and Innovation), with the programme leaders and representatives of Biomedical Science, Medicine, Nursing and Midwifery, Pharmacy and Dentistry courses at the opening ceremony of the Higher Education Expo held from February 10-11, 2018 at the Bridex Hall 2, Jerudong.



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3rd National Scientific Symposium Held at IHS



From Friday 19th—Sunday 21st January 2018, the Institute of Health Sciences (IHS) and the Brunei Darussalam Association of Medical Laboratory Scientists (BAMLS) jointly organised the 3rd National Scientific Symposium. The symposium carried the theme, 'Innovating Precision Medicine for Patient Care', showcasing three sub-themes: cancer, lifestyle diseases and infectious diseases. The event was graced by the presence of the Minister of Health, Yang Berhormat Dato Paduka Dr Haji Mohd Isham bin Jaafar, as the guest of honour at the opening ceremony of the event. 200 participants comprising of medical laboratory professionals, healthcare professionals, academics, postgraduate

and undergraduate students attended the 3-day symposium. The symposium offered 9 workshops and 9 symposia, with presentations geared towards the current trends and practices, as well as the future outlook of modern laboratory medicine in the era of precision medicine. Two keynote speakers were invited to deliver the keynote address, namely Professor Sir David Lane, the Chief Scientist of Agency for Science and Technology and Research (A*STAR), Singapore and the Director of the p53 Laboratory, and Professor Wasun Chantratita, the Chief of Virology and Molecular Microbiology, Ramathibodi Hospital, Mahidol University. Professor Sir David Lane delivered a keynote address titled 'The Regulation of p53 in Human Cancer', while Professor Wasun Chantratita delivered one titled 'Transforming Medicine: Genomics, Bioinformatics and Global Health'.



IHS as Newly Accredited AHA Centre Conducted Inaugural BLS Course

The PAPRSB Institute of Health Sciences (IHS) had been accredited as an American Heart Association (AHA) training centre in November 2017. With this new status, IHS conducted its first Basic Life Support (BLS) course on 29th January 2018. The first batch of 22 paramedical trainees attended the course following an opening ceremony with the Dean of IHS, Dr Hajah Rafidah Haji Gharif, as the guest of honour. IHS is licensed to provide AHA-certified Basic Life Support (BLS), Advanced Cardiovascular Life Support (ACLS) and Paediatric Advanced Life Support (PALS), as well as conducting first-aid and heart-saver training. The former three courses are exclusively for healthcare professionals, while the latter two courses are open to all. Upon completion of the courses, each participant will be presented with an AHA-certified completion and certificate, which is valid for two years. For further information, please contact: cpctraining.ihs@ubd.edu.bn.



IHS Hosted IIUM Students in Student Mobility Exchange Programme

The PAPRSB Institute of Health Sciences (IHS) welcomed five final year Bachelor of Nursing students from the Kulliyah of Nursing, International Islamic University Malaysia (IIUM), Malaysia as part of a Student Mobility Exchange Programme between IIUM-UBD that started in 2015. The ongoing collaboration between the IIUM and UBD signifies the strong partnership that could be expanded to cultivation of intellect and research. Specifically, the programme aims to give students opportunities to observe the teaching facilities available in the Institute and to gain clinical experience in a hospital-based setting. The programme ran from January 20th to March 3rd 2018, and was facilitated by IHS nursing lecturers, Cikgu Mursidi bin Hj Ali and Cikgu Pg Norasmah binti Pg Hj Ismail.

During the programme, the students were placed at the Emergency Department and the Women and Children Centre, RIPAS Hospital for their clinical placement. They learnt numerous nursing skills pertaining to the care of adult

and pediatric emergencies from this. They were also involved in problem-based learning and simulation activities at the Institute. The simulation activity involved caring for a SIM Mum (a high fidelity women simulator), which was simulated to experience post-partum haemorrhage during labour. This activity allowed the students to identify, plan and provide appropriate interventions or management during the crisis. The students also visited the Pantai Jerudong Specialist Centre, the Jerudong Park Medical Centre, the Lambak Kanan Health Centre and the Renal Dialysis Rimba Clinic. During the weekends, they had the opportunity to enjoy the culture, tradition and historical places in Brunei with their student buddies. At the end of the programme, the students had the opportunity to share their experiences with the rest of the Institute by means of presentations. They were also presented with Certificate of Attendance by the Programme Leader of Nursing and Midwifery Programme at the end of the programme.



IHS Staff and Students Celebrate Brunei's 34th National Day Celebration



MOU Signed Between IHS, UBD and Trinity College, Dublin

On 30th January 2018, the PAPRSB Institute of Health Sciences (IHS) and Trinity College, University of Dublin, signed a memorandum of understanding (MOU) as a partner school for the BHSc Medicine programme. Signing on behalf of UBD was Dr Hjrh Rafidah Binti Haji Gharif, Dean of IHS, while Trinity College Dublin, was represented by

Professor Michael Gill,

Dean of School of Medicine, Trinity College Dublin. He was joined by Associate Professor Martina Hennessy, Medical Education Consultant of Trinity College Dublin. Following the signing ceremony, both representatives from Trinity College

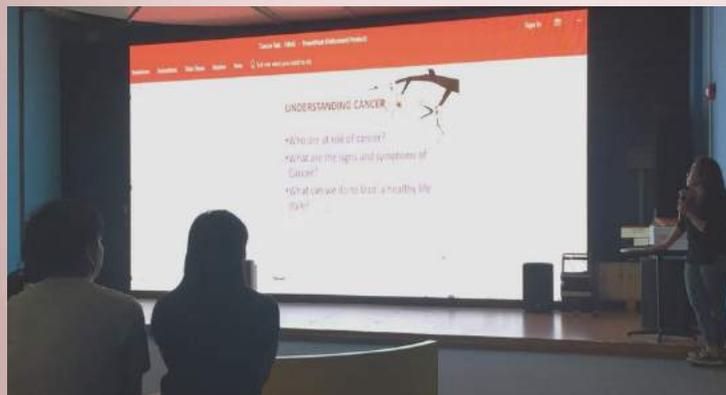


IHS at OGDC Cancer Awareness Exhibition

A one-day cancer awareness exhibition was held on 25th February at the Oil and Gas Discovery Centre (OGDC) in Seria to commemorate World Cancer Day. The event featured exhibits from PAPRSB Institute of Health Sciences (IHS), UBD and Children's Cancer Foundation (YASKA), which were aimed to raise public awareness on cancer, and its causes and effects. Two lecturers from IHS, Dr Mas Rina Wati binti Haji Abdul Hamid and Dr Siti Normadhirah binti Haji Amdani, delivered talks on causes of cancer and measures to prevent it. Additionally, Dr Dk Nuramalina Hafizah binti Pg Haji Mumin, another lecturer from IHS, facilitated the 'Let's Talk' science

session. Additionally, information on cancer-related research taking place at IHS were displayed as educational posters at the event. Both undergraduate and postgraduate students from IHS were also present at the event to tend to visitor's questions.

During the exhibition, two members of YASKA, Khairi Akmal bin Maidin and Siu Tzyy Wei, shared their life stories as cancer survivors. Visitors were also entertained with interactive family quizzes, DIY cell making, tours of OGDC's 'Explore-A-Saurus'-themed exhibition and a science show called 'Hot and Cold' conducted by OGDC's science communicators.



Research Focus: Unravelling the First Bruneian Genomes

Advancement in next generation sequencing (NGS) and computational technologies over the last decade has allowed sequencing of the entire human genome to be routinely performed for various biomedical and clinical applications. The underlying genetic causes of many human phenotypes and diseases, such as cancer, have also come to light with the identification of variants (e.g. single nucleotide variant (SNV) and insertion/deletion (indel)) derived from these data. Indeed, prescription of pharmacogenomic treatments incorporating personalised genetic data is now in practice for a number of genetic diseases. However, realisation of true precision medicine can only be achieved when genetic variants from both healthy and diseased groups can be analysed and compared to ascertain the causative aberrant genetic elements.



In Brunei, little is known about the genetic variation within the local population groups. To date, although genetic testing for some inherited diseases and certain cancer types have been made available in the country, none of the variants identified has been deposited in NCBI's dbSNP database, and in fact, less than 10 human DNA sequences can be found in the NCBI's GenBank database. The much needed effort and challenge to quickly fill in these gaps has been taken up by two final year biomedical science undergraduate students, Mirza Azmi and Nabil Abdul Kadir, at our Institute. Both are under the supervision of Dr Lu Zen Huat and the project is in collaboration with Dr Hj Abdul Ghani Hj Naim of Institute of Applied Data Analytics.

The whole genome of two Dusun individuals from Brunei were recently sequenced, using the NGS method, as a small part of The Simons Foundation's Human Diversity Project. While focusing on the evolutionary genetics, detailed analysis was not done for any of the 300+ individual genomes. Mirza and Nabil were therefore tasked with analysing the raw sequencing data and identifying all the genetic variants in the two individuals.

One small step for human genomics, one giant leap for personalized medicine in Brunei

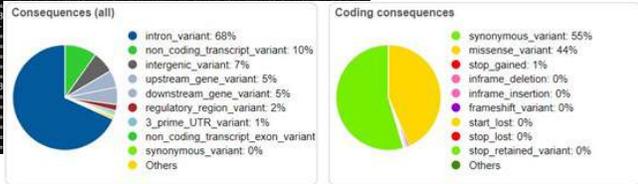
After overcoming the steep learning curve in genomics, bioinformatics, data analytics and Linux computing, they have to plough through NGS data exceeding 150GB using some state-of-the-art bioinformatics tools running on the high performance Linux server at the Information Communication Technology Centre (ICTC). In brief, raw sequencing reads derived from the genome of the two individuals were first mapped (*i.e.* aligned) against different versions of the latest human reference genome before all the potential variants were discovered and quality-filtered. Each of the two individuals was found to harbour approximately 4.1 million genetic variants. Preliminary analysis shows that more than 100,000 of the variants have not been reported in the NCBI's dbSNP database. Mirza and Nabil next attempted to look at the molecular and inferred clinical impacts of these variants. They were able to identify SNVs in genes associated with drug response and genetic diseases. For instance, a SNV falling on the miRNA regulating the *Brcax* gene expression was identified in the female Dusun and this SNV has been predicted to increase the risk of breast cancer. Findings from the current works will be presented during their final year project presentation.



Although the work thus far have been limited to only two Bruneian individuals, this whole genome variant discovery project is, to our best knowledge, first of its kind in the Sultanate. Future research in population genetics and genomics will lead to better understanding of diseases and more accurate prediction of drug responses within the different Bruneian population groups. Ultimately, the practice of genomic medicine is expected to greatly improve the healthcare in the country. This is an important milestone in the progress of genomic medicine at not only the university, but also the Sultanate.

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| #CHROM | POS | ID | REF | ALT | QUAL | FILTER | INFO | FORMAT | ERR1395557_sft.bam |
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Oral Health Awareness Event Organised by IHS Dentistry Students

The first cohort of dentistry students from IHS organised the first oral health event by Universiti Brunei Darussalam (UBD) on 18th March 2018 at the Taman Haji Sir Muda Omar Ali Saifuddien. The event was held to commemorate World Oral Health Day, which is celebrated every 20th March. The theme of the event was 'Say Ahh! Think Mouth, Think Health'. The cohort leader, Lim Pei Chee, said that the main purpose of the event was to promote oral health hygiene to the public, including the technique of brushing teeth and to share the different ways of achieving oral hygiene. Additionally, she said that they want to emphasise the link between oral health and general health as a lot of people are unaware of the link between the two.



IHS Staff and Student Attend 2nd CUMEC 2018

The Chinese University of Hong Kong (CUHK) is a public university that has been ranked as no. 46 in the QS World ranking 2018. CUHK organised a 2nd Medical Education Conference with the key themes of Bioethics, Professionalism and Work-based Assessment. This two-day conference aimed to share and learn from experts in medical and healthcare professional education related to the three key themes mentioned above. Around 265 participants from 22 countries participated in the conference, with a total of 9 international speakers from National University of Singapore, Columbia University, University of Washington, Monash University, National Taiwan University, Peking University, Newcastle University Australia, Deakins University and University of British Columbia, Canada.

At CUMEC, one of IHS staff, Dr Nurolaini Kifli participated in one of the parallel free paper sessions by sharing the Institute's students community project in enhancing breastfeeding activities from the 2nd ASEAN Medical Students' Project in 2017. The title of the project was 'Involving Healthcare Students in a Community Project to Promote Breastfeeding'. Another IHS staff, Dr Lim Ya Chee, was also one of the participants this year and she presented her pilot study on the 'Relationship Between First Year Medical Students Results and Their Entrance MMI Scores: A Pilot Study' while Dr Jagjit Singh Dhaliwal presented his study titled 'A Study to Evaluate the Awareness of Hepatitis B Disease among Undergraduate Dental Students'. A 3rd year Medical Student, Hailey Ong Hui Ling, also participated in the CUMEC to present her community project entitled 'Gift of Life Donations (GOLD) for Childhood Cancer'.

Overall, those involved have expressed that it was a worthwhile experience and that much knowledge was gained in assessment and teaching, as well as widening their network in Medical/ Health educations. For more information please go to: <http://www.ome.cuhk.edu.hk/cumec2018/>



IHS PhD Candidate Secured Fellowship Position at NUS

Fakhriedzwan Idris is a PhD in Biomedical Science candidate at the PAPRSB Institute of Health Sciences (IHS) under the Neuroinfectious Diseases group, supervised by Dr Suwarni Diah and Dr Siti Hanna as well as Dr Zainun Zaini from the Ministry of Health as his clinical laboratory supervisor. He is currently completing his PhD with a thesis titled 'Establishment of *In Vitro* Blood-brain Barrier Models for the Study of Dengue Encephalitis'. In this study, he has successfully developed a murine *in vitro* blood-brain barrier model, which is subsequently used as an infection model to study the mechanisms of dengue neuropathogenesis. His research interests also include host-viral interaction, particularly the roles of viral glycosylation and glycans during cell infection by dengue virus. Upon the completion of his PhD, he will start his fellowship position at the National University of Singapore (NUS) as a research fellow under the Microbiology and Immunology team to study the factors involved in the *in vitro* and *in vivo* fitness and virulence of dengue virus.



IHS PhD Candidate at 9th AMEA Symposium

Dr Divya Thirumalai Rajam, a PhD candidate from IHS, went to the 9th Asian Medical Education Association (AMEA) Symposium cum Frontiers in Medical and Health Sciences Education 2017. The theme of the symposium was 'Preparing Healthcare Learners for a Changing World' and was held at University of Hong Kong from 14th—16th December 2017. The AMEA is an institution-based association of the Asian medical schools, which was established in June 2001. The aims of the Association are to identify and recognize that medicine is globalized, to enhance the characteristic features and strengths of Asian medical education, to share information and experience about medical education, and to strengthen and promote good pedagogy and research on medical education. The AMEA strives to take a more proactive role in raising its profile as the leading association

in medical education around the world and to promote inter-school and multidisciplinary collaborations. The conference was hosted by renowned speakers in medical education from all over the world. During the conference, Dr Divya was selected to present her e-poster presentations based on two abstracts titled 'Living in International Campuses: An Integrated Review on Experiences of International Undergraduate Medical Students' and 'Outcomes of Internalization of Undergraduate Medical Education: An Integrated Review', from which she was awarded 'Award of Merit' for her poster presentation. She also attended a workshop on 'Community-based Service Learning in Medical Education', which coached participants in organizing feasible community program for prevailing health issues.



IHS Students at University DY Showcase

Universiti Brunei Darussalam (UBD) through the Office of the Assistant Vice Chancellor (Academic Affairs) held the Discovery Year Showcase 2018 at the Inspiring Hall, Student Centre in UBD. The two-day event held from 19th to 20th February 2018 showcases the work, experience, learning achievements and talents of UBD students who have undergone their Discovery Year. This gives students who are about to take part in their Discovery year the opportunity to learn from their experienced peers. They can also learn about other disciplines, in the hopes that more multidisciplinary activities and projects will take place in the future.



The GenNEXT curriculum offers experiential learning through the Discovery Year programme during the students' third year candidature. Under the programme, students have a choice of one or a mix of the four choices: Study Abroad programme, Internship, Incubation project and

Community Outreach Project. The various options should encourage UBD students to be independent, proactive and courageous in their pursuit of knowledge and skills because these are relevant in shaping their future careers.

Chinese New Year Celebrated at IHS



The Pengiran Anak Puteri Rashidah Sa'adatul Bolkiah (PAPRSB) Institute of Health Sciences

Since its inauguration in September 2000, UBD's PAP Rashidah Sa'adatul Bolkiah Institute of Health Sciences has expanded beyond solely providing medical training. Graduate Programmes such as MSc in Primary Health Care, Master of Public Health, and Masters and PhD by Research as well as Undergraduate Programmes across five main disciplines – Medicine, Biomedical Sciences, Nursing & Midwifery, Pharmacy and Dentistry are now offered. We ensure the Institute remains relevant and sensitive to the rapidly changing needs of the country. Our programmes are products of a continuous review of our curricula, and indeed, all our undergraduate programmes have undergone major enhancements and are now also designed to encourage innovation and entrepreneurship, and for students to assume leadership roles, tempered with a keen awareness of the environment.

PAPRSB Institute of Health Sciences

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