

NAVIGATING CHANGE SHAPING THE FUTURE



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The seven pieces of the tangram represent IMU's seven Schools and Centres. The vast array of possible configurations reflect the endless innovation and creation that IMU adopts to be future ready. The bird motif signifies IMU's determination to always soar to greater heights.

MESSAGE FROM THE VICE-CHANCELLOR

Dear Readers,

This year has been a time of changing landscapes, both physically and metaphorically, and when the land around us starts to look different, so do our views.

In October, clearing and earthwork began on the site adjacent to our Bukit Jalil campus, where the IMU Hospital will soon stand. In addition to the excitement, we are now also feeling a sense of urgency mixed with impatience because there is still much to be done, and the clock seems to be ticking faster. The dream is becoming tangible, and we can't wait for the day when the IMU Hospital will welcome our first patients in 2021.

The site work for the hospital transformed our visible surroundings in 2018; almost like a reflection of the changes in the education landscape. Here are some reflections of the year.

THE BIG PICTURE REMAINED UNCHANGED

The IMU Hospital will be Bukit Jalil's first private hospital, and a significant milestone for our healthcare arm. It will be a state-of-the-art, patient-centred facility, and while this is an accomplishment in itself, the IMU Hospital's real significance for us is that it will be a major step in the creation of the IMU Academic Health Centre (AHC).

When fully realised, the AHC vision will see IMU integrating education, research and healthcare to produce a whole that is greater than the sum of its parts. Better educators, better researchers, better healthcare professionals—which will translate into better-equipped students and graduates and ultimately better patient care.

Bold as this vision may be, the three-pillared structure has in fact been our big picture for a long time, with our collective identity being that of a university, a centre for research and a healthcare provider. The same can be said of our five-year Aspire II Strategic Plan, which reached its mid-point in 2018: we may repeatedly adjust our approach, but our overarching objectives remain unchanged.

THE LANDSCAPE BECAME MORE COMPETITIVE

In 2018, competition grew tougher in education and research. The health education sector saw more players offering more programmes, often at more competitive prices. The economic climate affected families' disposable income and also the Government's ability to offer financial assistance to students. We had to work harder to communicate to prospective students the reasons why an IMU education represents quality and value.

In research, too, economic constraints meant a reduction in the amount of funding available from Government as well as private sources. The reality is that in challenging times, research is often deprioritised.

WE SUCCESSFULLY NAVIGATED THE CHALLENGING LANDSCAPE

Despite the circumstances, we not only met our targets for student numbers, we also achieved a record number of students in our Foundation in Science programme. This resulted not only from our efforts in 2018, but also our work over the years to build and maintain a solid pre-university programme.

Similarly, some programmes offered through the School of Health Sciences (SOHS) reached a point of maturity in 2018, allowing us to take things to the next level by establishing IMU's newest centre—the Centre for Complementary and Alternative Medicine (CCAM).

The CCAM will focus on areas of complementary and alternative medicine—that is, Chinese medicine, chiropractic and the newly launched MSc in Acupuncture.

Meanwhile, our BSc (Hons) Dietetics with Nutrition programme gained international recognition in 2018—it was awarded accreditation by the International Confederation of Dietetic Associations (ICDA), making IMU the first university in the world to achieve this distinction. Again, this represents years of dedication.

Our efforts over many years resulted in significant achievements in research, notably the fact that total research funding increased by 35 percent to more than RM3.2 million. In the latest FRGS exercise, our success rate was about 30 percent, against a national average of 10-15 percent. In November, Prof Leong Chee Onn, Professor in Cell and Molecular Biology, received the prestigious Top Research Scientist Malaysia (TRSM) award.

For us, the takeaway from all this is clear: faced with a challenging current landscape, we must not waver from our focus on quality and the long term. As we respond to our immediate context, we must also have one eye on the distant horizon.



To this end, in 2018 we continued to develop new programmes, among them the School of Dentistry's (SOD) two new postgraduate offerings. Meanwhile, the School of Medicine (SOM) embarked on Medical Curriculum 2020, a comprehensive relook at our curriculum. As with all IMU schools, the objective is to ensure our programmes are contemporary, forward-looking and focused on the kinds of competencies that the 21st century job market will require, not just in terms of the technical competencies but also the soft skills.

We also remained committed to research. Others may consider research to be a luxury in difficult times, but we are in it not just for the short term or the tangible, large-scale projects—we also want to discover the tiny uncharted terrain that can be glimpsed through the microscope. In 2018, we established three important initiatives in research, which brings me to my next point.

WE NAVIGATED THE LANDSCAPE WITH STRONG PARTNERS

To enhance our research capacity at IMU, we forged three strategic alliances: IMU-National Institutes of Health (NIH); IMU-University of Southampton Advanced Microbiology and Infectious Diseases Laboratory; and IMU-Fusionex. The NIH is a network of six research institutions under the Ministry of Health, while Fusionex is a leader in artificial intelligence. Each of our three partnerships holds enormously exciting possibilities, and more details can be found in the pages on research (see page 106).

We also continued to strengthen our academic and industry links, with the latter receiving a boost in 2018 through the establishment of the IMU Steering Committee for Industry Partnership.

WE SHAPED THE LANDSCAPE

It should be remembered that “landscape” is also a verb: besides reacting, we also want to actively shape. At IMU we are very keen to go beyond just being a producer of graduates or a gateway to partner institutions. We want to engage with the entire ecosystem, and have an impact on healthcare, health professions education and, ultimately, the health of the nation.

Our efforts over many years resulted in significant achievements in research, notably the fact that total research funding increased by 35 percent to more than RM3.2 million.



Public Health Policy Roundtable
Discussion on sugar sweetened beverages

In 2018 we began working with the Negeri Sembilan State Health Department on an exciting project that will potentially see us working together to address the healthcare needs of the state. The project will also provide experiential learning sites for our students to learn about community health beyond the hospital. Basically it's about placing ourselves in the community and defining our role.

At the federal level, similarly, we were able to contribute to the policymaking process in 2018. The excise tax on sugary beverages announced by the Government as part of the 2019 Budget was significantly based on a set of recommendations arising from a meeting organised earlier at IMU.

Amidst these newer endeavours, we continued to undertake our yearly programme in community service under our IMU Cares banner which has always been part of the IMU DNA. Our purpose is to produce competent healthcare graduates who also possess a willingness and commitment to serve the community.

At IMU we are very keen to go beyond just being a producer of graduates or a gateway to partner institutions. We want to engage with the entire ecosystem, and have an impact on healthcare, health professions education and, ultimately, the health of the nation.

IT IS TIME TO RETHINK THE BIG PICTURE IN EDUCATION

In planning for the future, IMU will of course continue to take into account the big trends in healthcare—for example, lifelong learning will be a necessity; technology will continue to play a pivotal role; and the bulk of healthcare will eventually be delivered outside hospitals.

This year also saw the landmark General Election in May. While it is too early to predict whether this event will alter the nation in the long term, the current atmosphere of hope and change nevertheless provides just the right landscape for us to re-examine the entire spectrum of education and ensure that it will equip us to face the future.

Let me round off this message by thanking the tireless IMU staff who have worked hard over the years to ensure that the institution has remained at the top of its game. Let us move forward and achieve ever greater milestones.



Prof Abdul Aziz Baba
Vice-Chancellor
International Medical University

1

6 March 2018 LLOYD'S REGISTER QUALITY ASSURANCE

IMU's Quality Management System was certified by Lloyd's Register Quality Assurance (LRQA) with MS ISO 9001:2015 standards in the provision of Pre-University, Undergraduate, Postgraduate Programmes for the Medical and Healthcare Professions.



2

9 March 2018 UNIVERSITY DAY

University Day was celebrated with activities such as the U-Race 2018, tea with the Chancellor and a celebration ceremony. The ceremony included the launch of the IMU book titled *Embracing Tomorrow's Challenges: Continuing IMU's Journey* (available at bit.ly/2NbnfVY) as well as the presenting of Staff Awards and the Aflame Award.



3

20 April 2018 HEARTS FIRST

IMU became the first university in the region to win the Bronze Award at the world-renowned Global CSR Summit & Awards™ for its IMU Cares programme.



4

8 June 2018

#1 IN DIETETICS AND NUTRITION

IMU became the first university in the world to be awarded the International Accreditation for Education Programs for Dietitian-Nutritionists by the International Confederation of Dietetic Associations (ICDA) for its BSc (Hons) Dietetics with Nutrition programme.



5

30 June 2018

45th CONVOCATION CEREMONY

The University conferred scrolls on 441 students from 16 programmes. The ceremony also saw the first cohorts graduating from the Postgraduate Diploma in Implant Dentistry and Postgraduate Certificate in Health Professions Education programmes.

The ceremony was graced by the newly-installed Chancellor, YBhg Dato' Dr Gan Ee Kiang and Pro-Chancellor, YBhg Tan Sri Dato' Dr Yahya Awang. The conferment of Emeritus Professor to Prof Mak Joon Wah also took place during the ceremony.



6

28 September 2018 PIONEER COHORT FOR ACUPUNCTURE

We welcomed the pioneer cohort of students into the Master of Science in Acupuncture programme.

7

8 October 2018 THE START OF CONSTRUCTION

IMU Healthcare named Pembinaan Mitrajaya Sdn Bhd, a wholly-owned subsidiary of Mitrajaya Holdings Bhd as the contractor in charge of the construction of the IMU Hospital's Phase 1 block. The hospital will be built on the land adjacent to the International Medical University (IMU) and work is expected to commence by 15 October 2018.





8

3 November 2018

46th CONVOCATION CEREMONY

The University conferred degrees on 336 students at its 46th Convocation Ceremony. The first cohort of the Master of Pharmacy Practice programme graduated at the ceremony.



9

30 November 2018

HILLTOP 2018 PHOTO CONTEST

IMU announced the winners of the 'Hilltop 2018 Photo Contest'. The contest was held to commemorate the hill that is now the site of the new hospital. The first, second and third place winners were Muhammad Amirul Asraf (staff, as seen in photo), Tee Yin Suan (student) and Tan Jun Hong (student), respectively.



VISION

IMU shall be an innovative global centre of excellence in learning and research, supporting a community of scholars and professionals committed to serving society, promoting the development of students to reach their true potential in becoming competent, ethical, caring and inquiring citizens and visionary leaders. IMU is committed to academic freedom and the principles of equal opportunity in the pursuit and application of knowledge, the highest standards of intellectual, educational and research productivity; and the establishment of a learning organisation that respects the individual.

EDUCATIONAL MISSION

As an educational institution, our mission is:

- To further strengthen IMU as a centre of excellence for undergraduate programmes in medicine, pharmacy and other health sciences programmes
- To establish IMU as a centre for higher education providing training through multidisciplinary programmes
- To establish IMU as a centre for postgraduate training and Continuing Professional Education
- To train knowledgeable and skilful professionals with high ethical standards who will be dedicated to serve and improve the quality of life of the community
- To train competent professionals with the use of innovative technologies of knowledge especially ICT in the teaching-learning process

CORE VALUES

Our organisational culture is to be based on our value system: We will be an organisation driven by its values. These core values, encapsulated in the acronym **TRUST**, are:

Trustworthy

We are trustworthy and stand for integrity, reliability and commitment

Responsive

To change, and to the needs of individuals and communities

Unity

Of vision and in working towards the achievement of common goals

Service

A commitment to providing outstanding service

Tenacity

In the pursuit of excellence

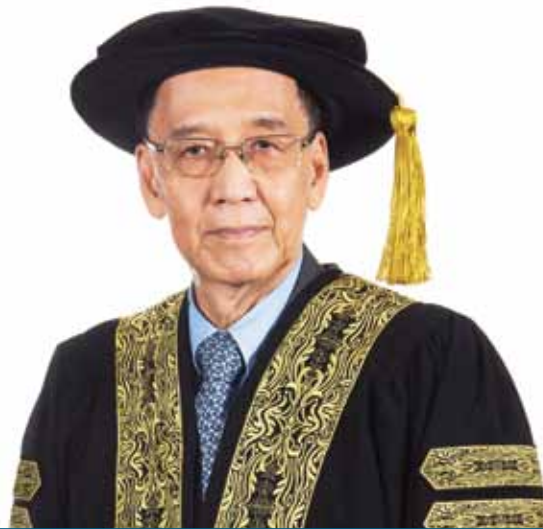
We expect staff and students to embrace, live and demonstrate these values, so that they may become role models. These values are integral to our culture; they underpin our work, communication and interaction, and explain why we do business in the way that we do. Our culture and its embedded values will help us realise our vision of becoming a great organisation, and of producing graduates capable of being leaders.

QUALITY POLICY

We aim to be an innovative centre of excellence in learning and research, producing competent, caring and ethical professionals who are lifelong learners. We are committed to achieving the highest standards of intellectual, educational and research productivity.

CHANCELLOR AND PRO-CHANCELLOR

CHANCELLOR



YBhg Dato' Dr Gan Ee Kiang

BSc (Hon), PhD (UWA), PKT, BCN, JMN, DSPN

PRO-CHANCELLOR



YBhg Tan Sri Dato' Dr Yahya Awang

MBBS (Monash), FRCS (Glasgow), SMJ, KMN,
DPMJ, DMPN, DSAP, PSM, Hon Doct (UKM)

BOARD OF GOVERNORS



**YBhg Dato' Dr Gan Ee Kiang
(Chairman)**

BSc (Hon), Phd (UWA), PKT,
BCN, JMN, DSPN

YBhg Tan Sri Dato' Dr Yahya Awang

MBBS (Monash), FRCS (Glasgow),
SMJ, KMN, DPMJ, DMPN, DSAP, PSM,
Hon Doct (UKM)

**YBhg Tan Sri Dato' Dr Abu Bakar
Suleiman**

MDBS (Monash), MMed (S'pore),
DMEdSc, Hon (UKM), DSc, Hon (UPM),
PhD, Hon (UMS), FRACP, FAMM, FAMS,
FACP (Hon), FRCP, FRCPE,
FRCP (Glasgow), FRCPI, FRCSI (Hon),
FRCSE (Hon), FAFPM, FASc, AMP
(Harvard), Hon DSc (Soton)

YBhg Prof Datin Paduka Dr Aini Ideris

DVM (UPM), MVSc (Liverpool),
PhD (UPM), DSIS, PSK, KMN, FASc,
FIAS, FMCVS, FMSA

YBhg Datuk Dr Yeoh Poh Hong

PJN, MBBS (Mal), MChOrth (Liverpool),
FRCS (Eng), FRCS (Edin),
FRCP (Glasgow), FACP (Hon),
Hon FCS (S. Africa), FAM (Mal),
FAM (S'pore)

Prof Abdul Aziz Baba

MBBS (Melb), MRCP (UK),
MRCP (Ireland), FRCP (Edin), AM

Dr Mei Ling Young

BA, MA (Hons) (Auckland), PhD (ANU),
DSc (Strath), LLD (Dundee)

Prof Victor Lim

MBBS (Malaya), MSc (London),
MRCPath, FRCPPath, FAMM, FASc

SENATE



Prof Abdul Aziz Baba

Vice-Chancellor, IMU Education

Prof Peter Pook

Deputy Vice-Chancellor, Academic

Prof Victor Lim

Pro Vice-Chancellor, Institutional
Advancement

Prof Toh Chooi Gait

Pro Vice-Chancellor, Strategic
Development & International

Prof Vishna Devi Nadarajah

Pro Vice-Chancellor, Education

Prof Nafeeza Hj Mohd Ismail

Dean, School of Medicine

Prof Allan Pau Kah Heng

Dean, School of Dentistry

A/Prof Dr Mohd Zulkefeli Mat Jusoh

Dean, School of Pharmacy

Prof Winnie Chee

Dean, School of Health Sciences

Prof Chu Wan Loy

Dean, School of Postgraduate Studies
& Research

Prof Ong Kok Hai

Advisor, Community Engagement

Prof Ammu Radhakrishnan

Associate Dean, School of Medicine

Prof Azizi Ayob

Associate Dean, School of Medicine

Prof Nazimah Idris

Associate Dean, School of Medicine

Prof Chin Beek Yoke

Associate Dean, School of Health
Sciences

Prof Mallikarjuna Rao Pichika

Associate Dean, School of Pharmacy

Prof Seow Liang Lin

Associate Dean, Oral Clinical Science

Prof Khoo Suan Phaik

Associate Dean, Community
Engagement

Prof Lum Siew Kheong

Head of Department, Surgery

YBhg Prof Dato' N Sivalingam

a/l Nalliah

Head of Division, Surgery

Prof John Arokiasamy

Head of Division, Community Medicine

YBhg Prof Dato' P Kandasami

a/l Palayan

Professor, Surgery

YBhg Prof Datuk Dr Lokman Hakim

Sulaiman

Director, IRDI

Prof Leong Chee Onn

Deputy Director, IRDI

Prof Esha Das Gupta

Professor, Internal Medicine

Prof Zainurrashid Zainuddin

Professor, Obstetrics & Gynaecology

YBhg Prof Dato' Dr Maimunah

A Hamid

Professor, Community Medicine

Prof Er Hui Meng

Associate Dean, Teaching & Learning

Prof Sharifah Sulaiha Hj Syed Aznal

Associate Dean, School of Medicine

Ex-Officio Members

Christy Chiu Lai Heng

Vice President, Finance &
Administration

Zuhanariah Mohd Nordin

Chief Librarian

Secretary

Noraidah Yusoff

Registrar

ACADEMIC COUNCIL

The 29th annual meeting of the Academic Council (AC) was held from 16-17 April. The meeting serves as a platform to bring together the University and its Partner Medical and Dental Schools, and enable representatives to share updates as well as discuss administrative and academic matters.

Discussions typically revolve around entry requirements, intakes and other admissions issues; evaluations of all curricula; issues related to the development of respective faculties; research, strategies, activities and partnerships; and postgraduate training in both medicine and dentistry.

The AC continues to play a core role in ensuring that IMU and our partner institutions remain aligned in our perspectives and motivations. This year's meeting was held at the IMU Bukit Jalil campus.

During the meeting, Partner Medical Schools agreed to exempt medical students applying for transfers to their institutions from the required IELTS examinations. This is in line with the practice of Dental Partner Schools as students would have already sat for the IELTS when entering IMU. The Partner Medical Schools will communicate with the Immigration Home Offices of their respective countries to cease the requirement.

During the two days, delegates were also divided into four breakout sessions based on the overall theme of personalised learning. The aspects discussed were:

- Redefining the role of teachers
- Mastery/competency-based progression
- Flexible, anytime/everywhere learning
- Future trends in clinical training





At the end of these deliberations, members agreed that there was a need to develop a framework for personalised learning that included the revised role of teachers at IMU. This will support the development of institutional cultures and infrastructure to enable and support personalised learning initiatives.

On the second day, the Partner Dental Schools (PDS) concurrently held their meeting. Prof Allan Pau, the IMU Dental Dean, once again took the helm to update the PDS representatives. He was pleased to report that the year saw the smooth transfer of students to Partner Dental Schools; the University of Dalhousie and the University of Glasgow received their first transfers. The University of Dundee will be receiving their first group in 2019.

It was also announced that the Malaysian Dental Council has approved an increase of IMU's international student intake by 25 students.

The representatives were also informed that the Board of Studies meetings for the Postgraduate Diploma in Endodontics and Prosthodontics

programmes were held in March, where feedback on the programmes were received and collated. The team has started work on assessing the recommendations to improve the programmes.

Other news included the full accreditation audit for the Postgraduate Diploma in Implant Dentistry programme which was held in May. The IMU Senate granted the programme a three-year accreditation on 19 September. Acknowledgement was also given to Prof Khoo Suan Phaik and Prof Seow Liang Lin who attended the Membership of the Faculty of Dental Surgery (MFDS) Exam in London as external examiners in March.

Other presentations included:

1. Report on Students' Preparedness by Dr Mandakini Mohan
2. Update on Strengthening Partnership:
 - Dental Wiki by Dr Umer Daood
 - MOOC on Tobacco Cessation by Dr Sobia Bilal
 - A Study on IMU-PDS Partnership by Dr Yeshaswini Thelekkat

29TH ACADEMIC COUNCIL MEETING





PROFESSIONAL EDUCATION ADVISORY COMMITTEE

The Professional Education Advisory Committee (PEAC) embodies IMU's commitment to continuous improvement of our educational programmes. The committee plays an advisory role and works together with all Deans, including those from our partner institutions, to ensure that we evaluate and evolve all aspects of our educational programmes. Our findings are collated in an annual report and submitted to the Board of Governors.

This year, we focused on a review of professionalism. Revisiting Professionalism was conducted by:

- Prof Trudie Roberts, University of Leeds, England
- Prof Richard Hays, University of Tasmania, Australia
- Prof Gary Mires, University of Dundee, Scotland
- Prof Hiroshi Nishigori, Kyoto University, Japan
- Prof Madawa Nilupathi Chandratilake, University of Kelaniya Sri Lanka

At the PEAC meeting in October, delegates discussed:

- Progress Report on the Review of Implementation of Competency-Based Education, 2015
- Progress Report on GTE1 (2017): Seeking the Way Forward for the Mentor-Mentee System at IMU
- Progress Report on GTE 2 (2017): Evaluating Work Readiness of IMU Graduates
- Progress Report on GTE 3 (2017): Value of Online Assessment System (OAS)
- Progress Report on PEAC Review (2017): Faculty Development

Several General Topic Exploration (GTE) papers were also discussed:

- GTE 1: Flexible Work Arrangement Evaluating Work Readiness of IMU Graduates
- GTE 2: Learning Spaces for Enhanced Student Experience
- GTE 3: Peer Evaluation of Faculty



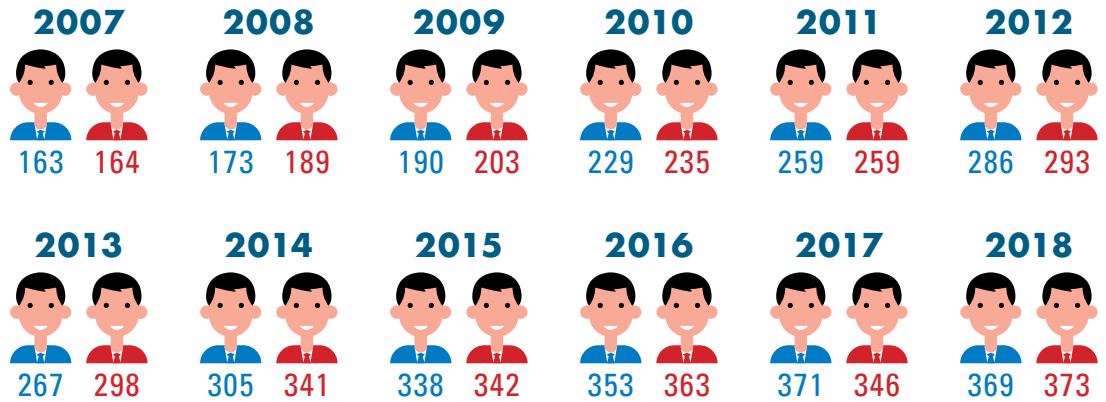
The PEAC also held its Clinic Sessions, which were introduced last year. These sessions are a platform for staff to meet PEAC members to discuss issues that have been brought up by the staff. This year, the Clinic Sessions revolved around the following topics:

- Updates and challenges faced in the review of the Bachelor of Dental Surgery curriculum
- Adult learning principles in Health Sciences programmes
- Updates on the review of the Master of Science in Molecular Medicine programme, 2017
- Challenges affecting the mentor-mentee system in the School of Postgraduate Studies (conflicts of interest, impediments to effective communications and pastoral care)

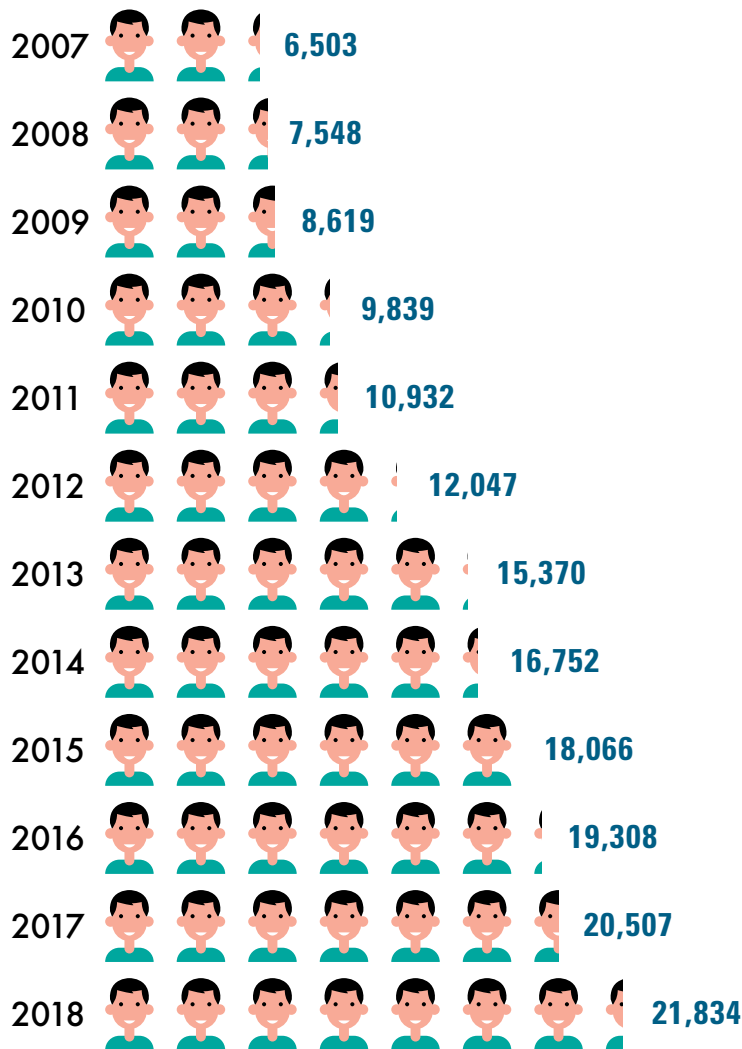
- Challenges faced and the way forward for experiential learning in undergraduate programmes
- People-centred healthcare approach in medical curriculum
- The way forward in bridging current assessment gaps

The discussions generated feedback and recommendations from PEAC members which have been circulated and will be further deliberated in the next PEAC meeting.

STAFF POPULATION



■ Administration Staff ■ Academic Staff

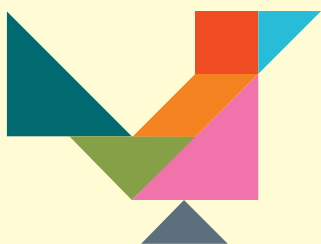


STUDENT POPULATION

 = 3,000 Students

*total includes alumni as of 30 November 2018

EDUCATION



CENTRE FOR
**PRE-UNIVERSITY
STUDIES**



2018

Highlights

- 55 percent rise in FiS student numbers
- 85 percent progression rate to the 2018 and 2019 undergraduate intakes from the 2017 FiS cohorts
- The 2014 pioneer cohort graduated from various three-year IMU undergraduate programmes
- Signing of MoU with the National University of Ireland, Galway, our partner university, for ab-initio acceptance of FiS students into related courses

PROGRAMMES



Foundation in
Science (FiS)

The Centre for Pre-University Studies offers the Foundation in Science (FiS) programme, which prepares students keen on pursuing science-related and other undergraduate programmes. As one of the leading medical universities in the country, we designed the FiS programme to give students a variety of academic opportunities and pathways, while easing their transition to undergraduate studies be it at IMU or at our partner universities.

The Centre for Pre-University Studies had an outstanding year, especially in student enrolment numbers. A total of 358 students enrolled in 2018. Compared to the previous year, our FiS programme saw a 55 percent increase in student numbers from the three intakes—April, July and September—with about 200 students enrolling for the April intake alone.

Another major highlight for us was seeing the pioneer cohort of the FiS programme graduate from various three-year IMU undergraduate programmes. This milestone was an encouraging reminder of how much we had accomplished since we launched the programme with 50 FiS students in 2014.

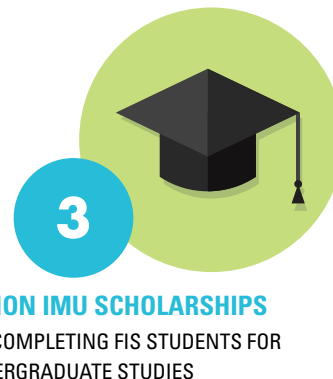
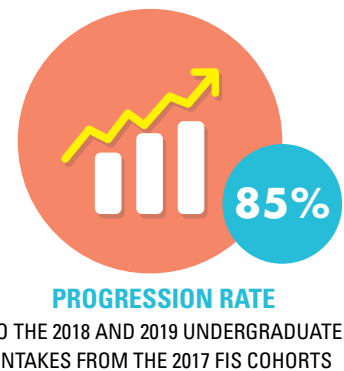
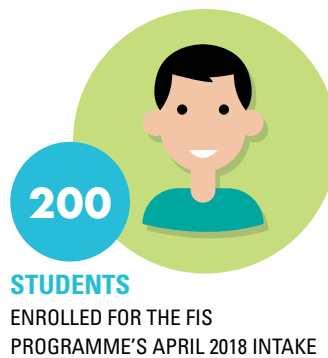
One of our ongoing initiatives in 2018 was to leverage on our partnerships with other institutes of higher education. In this regard, we sought to secure ab-initio acceptance of qualified FiS students to several faculties and programmes run by our partner universities. In September we signed a Memorandum of Understanding (MoU) with the National University of Ireland, Galway, in the presence of the Irish Ambassador to Malaysia, His Excellency Eamon Hickey.

HIGH PROGRESSION RATE OF FIS STUDENTS TO IMU UNDERGRADUATE PROGRAMMES

The FiS programme serves as the ideal pathway for pre-university students to seamlessly integrate with undergraduate programmes at IMU and partner universities. The progression rate of our 2017 FiS students to the 2018 and 2019 undergraduate intakes were at 85 percent. We anticipate that if the progression rate is the same in 2019 for the current FiS intakes, the FiS programme will be providing IMU’s undergraduate programmes with roughly 300 students.

The Centre launched several initiatives to ensure the progression rate remained high. We increased our engagement with Semesters 1 and 3 FiS students through a wider scope of detailed undergraduate briefings that showcased the many undergraduate programmes offered by IMU and its partners. Semester 3 FiS students also

**Centre for Pre-University Studies:
The year in review**



went through degree-specific electives that gave them a better understanding of their chosen undergraduate programmes. These initiatives will provide FiS students with a head start in integrating and interacting with the undergraduate faculty members as well as help them cope better in their programmes. Progression bursaries are offered to all FiS students advancing to IMU degree programmes. Scholarships are also awarded to high-achieving students.

INCREASING STUDENT NUMBERS, INCREASING WORKLOAD

The increasing number of FiS students indicates that our efforts to promote the programme have paid off. To ensure that our high academic standards are not compromised as a result of the growing student population, we employed additional staff and faculty members in areas such as mentoring, teaching and administration in 2018.

The Centre also drew on IMU's departmental cooperation strategy that encourages an integrated and cohesive collaboration between IMU's corporate departments. As a result, our FiS module and faculty evaluations for the year in review were not greatly affected and showed quite similar results to evaluations in the 2017 and earlier cohorts.

MOVING FORWARD

Our chief focus in the upcoming year will be to maintain the FiS student growth as well as to regularly improve the programme's academic content and delivery to ensure an optimal learning experience for our students. We will continue to strengthen our efforts in preparing our FiS students for their undergraduate studies.

As we face increasingly stiff competition in local student enrolments, we will also look into avenues to tap into the international market. We hope to establish more partnerships with foreign universities that will lead to a wider recognition of our FiS programme, which will in turn boost student enrolment.

To ensure that our high academic standards are not compromised as a result of the growing student population, we employed additional staff and faculty members in areas such as mentoring, teaching and administration in 2018.



FiS Open Day

SCHOOL OF
MEDICINE



2018

Highlights

- IMU Medical Curriculum Review
- Development of three new postgraduate programmes, in Counselling, in Business Administration in Healthcare Management, and in Master of Science in Public Health Open and Distance Learning
- District Partnership Initiative with the Negeri Sembilan State Health Department
- Enhancement of the Online Assessment System
- IMU-USMLE Step One and Step Two preparatory courses

At the School of Medicine, we empower students with the skills and knowledge to save lives. We do this by instilling empathy, passion and kindness in our students to prepare them to become doctors who prioritise their patients' wellbeing and interests. Through our extensive curricula, clinical training and partnerships, our students receive academic opportunities that prepare them well for careers in healthcare.

In the year under review, the School saw through its second year of the ongoing curriculum review that began in 2017 for the undergraduate medical programme. The revised curriculum, slated to begin in 2020, will further emphasise people-centred care, a health systems approach, fostering multidisciplinary team work, enhanced communication skills and adaptability.

In 2018, we developed three postgraduate programmes in Counselling, in Business Administration in Healthcare Management (BA-HCM) and a Master of Science in Public Health Open and Distance Learning (MScPH ODL). Our Master of Counselling programme is

PROGRAMMES



Bachelor of Medicine and
Bachelor of Surgery (MBBS)

Bachelor of Medical
Sciences (Hons)



Bachelor of Science
(Hons) Psychology

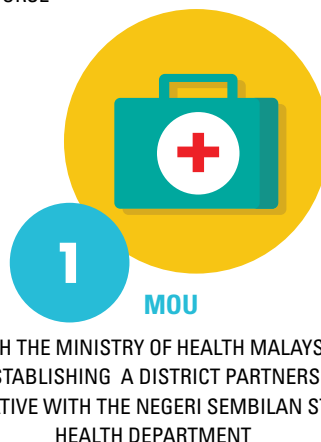
currently awaiting approval from the Malaysian Qualifications Agency (MQA). Meanwhile, under the BA-HCM programmes, the School will offer a Postgraduate Certificate, a Postgraduate Diploma and a Master’s degree beginning in March 2019, having received the Provisional Accreditation as well as the approval from the Ministry of Education (MoE) for all three programmes in 2018.

We also reviewed the Medical programme’s intercalated course—the Bachelor of Medical Sciences (Hons) programme—reducing the duration from three and a half years to three years without compromising the outcome of the programme. We received approval from MoE for the revised programme in March 2018. The review gives students the opportunity to invest more time in conducting medical and biomedical research as well as seek to obtain double degrees of BMedSc and MBBS/MD.

Recognising that some students interested in the Medical programme may benefit from early preparation before beginning undergraduate studies, we developed a pre-med course in 2018 that provides independent online modules and recorded lectures on selected topics such as problem-based learning, professionalism, mentoring and more.

Our faculty members and students were active in research in 2018.

The School of Medicine’s year in review



- BUSINESS ADMINISTRATION IN HEALTHCARE
- MASTER OF SCIENCE IN PUBLIC HEALTH OPEN AND DISTANCE LEARNING (MSCPH ODL)
- COUNSELLING



The School successfully secured RM1.29 million in research grants and published 80 articles in peer-reviewed journals.

Another highlight in 2018 was the establishment of our District Partnership Initiative (DPI) with the Negeri Sembilan State Health Department (JKNNS) to connect IMU's best academic thinkers with JKNNS' healthcare delivery experts to accelerate the development of new approaches, supported by evidence, to improve population and person-centred healthcare. On 19 December we signed a Memorandum of Understanding with the Ministry of Health (MoH) Malaysia which lays the groundwork for our collaboration with JKNNS in areas of research, training and services. The joint team is currently developing activities and programmes.

OPTIMISING TECHNOLOGY IN LEARNING

In response to the rising demand for more flexible postgraduate programmes and in line with the MoE Academic Programme 4.0 framework, we have designed a Master of Science in Public Health Open and Distance Learning (MScPH ODL). In July, our MScPH ODL programme successfully obtained the five-year Provisional Accreditation, with the MoE approval following in October. The programme will be launched in March 2019.

The School is also developing two massive open online courses (MOOCs) on Patient Safety and Travel Medicine, the latter in partnership with the National University of Ireland, Galway. For Patient Safety, we are in discussions with MoH to widen access to existing modules used by MoH for the house-officers' training course, so that other healthcare workers may also utilise these modules via an online platform.

In the area of assessment, we continued to enhance the use of IMU's online assessment system (OAS). The OAS provides the online platform for creating assessment blueprints, uploading tests, online vetting, maintenance of question database, secured exam delivery, post exam analysis, exam report generation and feedback on assessments. In 2018, we administered all one-best answer (OBA) and extended matching questions (EMQ) tests and objective structured clinical examinations (OSCE) through the OAS for the pre-clinical years. We are currently upgrading the OAS to support summative assessments, such as short answer questions (SAQ) and objective structured practical examinations (OSPE).

USMLE STEP ONE AND STEP TWO PREPARATORY COURSE

In August 2017 in collaboration with Becker Professional Education (a US-based professional education provider), we launched the United States Medical Licensing Examination (USMLE) Step One preparatory course. We are the first medical school in Malaysia to provide a USMLE preparatory course. In 2018, we successfully incorporated the preparatory course into the IMU medical curriculum for Semesters 1 to 5.

Our USMLE preparatory course aims to create more pathways for students who intend to pursue residency opportunities or postgraduate studies in the US. With this in mind, we have begun incorporating preparatory materials for USMLE Step Two Clinical Knowledge into our clinical curriculum to help our students excel in both USMLE Step One and Step Two.





The preparatory course enhances our students' confidence and makes them more motivated and competent in their preparation for the exam. The course also provides an opportunity to IMU MBBS students to benchmark their learning with international standards.

ENCOURAGING LIFELONG LEARNING

In 2018, our School conducted 13 continuing professional development (CPD) courses. The highlights include: the 11th Family Medicine Clinical Skills Course, the 8th Family Medicine Fellowship of the Royal College of General Practitioners

Part 2 Examination Preparatory Course, and the 13th IMU-Hospital Tuanku Ja'afar Membership of the Royal College of Physicians Practical Assessment of Clinical Examination Skills—PACES Preparatory Course. We also introduced two new CPD courses—the Preparatory Course for a Career in Surgery, which prepares trainees in surgery for their professional qualifications; and the Housemen Bridging Course, which is a multidisciplinary effort to prepare new medical graduates for their housemanship programme.

MOVING FORWARD

For 2019, we will focus on strengthening networks for the School. We have identified the IMU-Med-Talk, created with our Partner Medical Schools (PMS), as an ideal channel to nurture partnerships. This collaboration will provide a series of lectures made available to students at IMU and at the PMS. The DPI with the JKNNS will be an opportunity for

the School to network and collaborate with service provider experts and the community in strengthening training programmes that support population and person-centred services, conduct comparative effectiveness research and population outcomes research, and provide care delivery models focusing on community-anchored interventions. The School will continue its community focus through IMU Cares (for more on 2018 initiatives, see "Serving the Community"), with the potential for some of them to be carried out under the DPI platform. Finally, we plan to intensify our collaboration with the Ministry of Health and other relevant partners to boost professional development among healthcare providers.

IMU is the first medical school in Malaysia to provide a USMLE preparatory course. In 2018, we successfully incorporated the course into our curriculum for Semesters 1 to 5. The course aims to create more pathways for students intending to pursue residency opportunities or postgraduate studies in the US.



SCHOOL OF
DENTISTRY

2018

Highlights

- All 75 available places filled in the Bachelor of Dental Surgery (BDS) programme's 2018 cohort
- Eight students graduated from the pioneer 2016 cohort of the Postgraduate Diploma in Implant Dentistry programme
- Preparation of two postgraduate diploma programmes in Endodontics and Prosthodontics for MQA provisional approval
- 35 research publications in tiered journals, 32 in Tier 1 and 2
- One successful application for the Fundamental Research Grant Scheme under the Ministry of Education
- Ten Continuing Professional Development (CPD) courses conducted

At the School of Dentistry, our dynamic programmes, well-equipped facilities and experienced faculty members provide students with a comprehensive dental education experience and extensive clinical training that ensure they will be relevant and up-to-date when they enter the workplace. We are committed to producing dental practitioners who are highly-skilled, ethical and patient-oriented in delivering dental healthcare services.

For the year in review, our focus was twofold: to continue to strive for distinction in our Bachelor of Dental Surgery (BDS) programme amid stiff competition from other institutes of higher education; and to further expand our postgraduate programmes and continuing professional development (CPD) courses for dental practitioners seeking to enhance their skills and knowledge.

We achieved our goal for the BDS programme with a full enrolment of 75 students for the 2018 cohort. Equally well-received were the 10 CPD courses we conducted for working dental practitioners and auxiliaries. Following approval granted by the IMU Management Committee in 2017,

PROGRAMMES



Bachelor of
Dental Surgery

Postgraduate Diploma
in Implant Dentistry



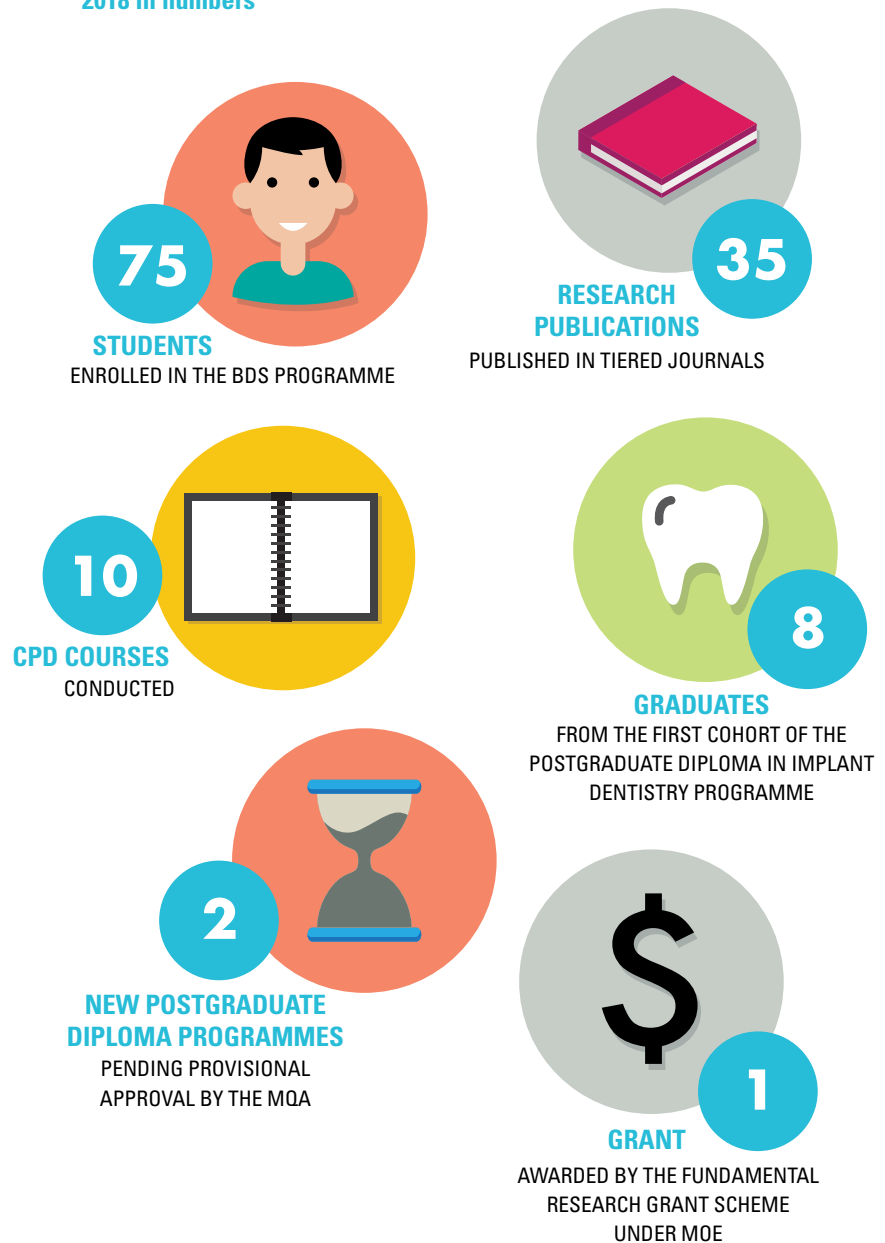
our School completed development of two new postgraduate programmes—the Postgraduate Diploma in Endodontics and the Postgraduate Diploma in Prosthodontics, both of which are now pending provisional approval by the Malaysian Qualifications Agency (MQA). Meanwhile, another key milestone was achieved when eight students graduated from the first cohort of the Postgraduate Diploma in Implant Dentistry programme that was introduced in 2016.

The year proved to be fruitful for our School in the area of research. We had 35 tiered research publications, of which 32 were published in Tier 1 and 2 journals. We were also successful in our application for the Fundamental Research Grant Scheme (FRGS) under the Ministry of Education (MoE) that amounted to RM70,000.

COLLABORATIVE VENTURES

Establishing partnerships with reputable universities abroad is part of our ongoing effort to provide students with more academic opportunities and options. In 2018, three of our students transferred to the University of Dundee in the UK, a new partner school under our Partner Dental Schools programme.

**School of Dentistry:
2018 in numbers**



We are also currently working with Dundee on Dental Wiki, a student-led project to create a comprehensive web-based dental-related encyclopedia. This is a project that involves collaboration from multiple universities. Participants from Dundee were in IMU to conduct training for students involved in this project.

Similarly, with the rising popularity of massive open online courses (MOOC), we have embarked on developing a MOOC on tobacco cessation training for dental students with Canada-based Dalhousie University. This will be reviewed by our Academic Council in April 2019. The full MOOC will be completed by the end of 2019.

In 2018, we conducted, for the second time, the Royal College of Surgeons of Edinburgh Diploma in Membership of the Faculty of Dental Surgery (MFDS) Part Two Examinations. A total of 178 candidates sat for the examinations in March and September led by both local and UK examiners. The MFDS is often considered a requirement for entry into specialist training. IMU is the only centre for such an examination in Malaysia. The examination has brought in candidates from the Middle East, Hong Kong and Singapore.

STUDENT-FOCUSED, STUDENT-LED

As in previous years, our students had the opportunity in 2018 to share the IMU experience with counterparts from other countries. We welcomed students from two Indonesian universities on visits that formed part of their elective programmes. Seven students from the University of Muhammadiyah Semarang came on a three-day elective study visit to our School in July, while 12 students from the Sultan Agung Islamic University joined us in September.

The year proved to be fruitful in the area of research. We had 35 tiered research publications, and we were successful in our application for the Fundamental Research Grant Scheme (FRGS) under the Ministry of Education.



Our students also played a crucial role when the School hosted the 45th Asia Pacific Dental Students Association (APDSA) Annual Scientific Congress 2018 in August. The event was attended by more than 480 delegates from dental schools in 12 member countries.

The second edition of our dental magazine *Teeth Talk* was distributed to delegates on the last day of the APDSA Annual Scientific Congress. The magazine received a RM13,500 sponsorship to cover the cost of printing and distribution and is slated to be distributed to 2,000 dental clinics across Malaysia.

MOVING FORWARD

Under the new Dental Act 2018, CPD course attendance will be a prerequisite for the Annual Practising Certificate. We will therefore

endeavour in 2019 to develop and market our School as a premier CPD course provider to meet the growing need for such courses.

Another major initiative for us will be the further development of our two postgraduate programmes in Endodontics and Prosthodontics to cater to dental practitioners seeking to advance their skills. Lastly, in preparation for MQA re-accreditation in October 2020, we will continue to review and refine the BDS curriculum to reflect contemporary pedagogies and technology-driven curriculum delivery and assessment.



Another major initiative for us will be the further development of our two postgraduate programmes in Endodontics and Prosthodontics to cater to dental practitioners seeking to advance their skills.

SCHOOL OF
PHARMACY



2018

Highlights

- Organised the 6th International Postgraduate Conference in Pharmaceutical Sciences (iPOPS)
- Celebrated the 10th Anniversary of the BSc (Hons) Pharm Chem programme
- New BPharm (Hons) enrollment in 2018 was 72, while new BSc (Hons) Pharm Chem enrollment was 30
- Secured external research funding totaling RM806,000
- Produced 117 ISI/Scopus-indexed publications, of which 100 were in Tier 1 and 2 journals, with FTE at 1.72

With the largest number of faculty members, alumni and students among Malaysian private pharmacy schools, IMU's School of Pharmacy has built a solid track record of offering an environment of excellence and a dynamic learning experience that ensures students graduate well-prepared to enter the workplace. Our goal is to produce pharmacists and pharmaceutical scientists who are leading members of the healthcare profession.

In 2018, our primary focus as always was on ensuring that the academic experience we offered to students remained comprehensive, relevant, stimulating and varied. Efforts to enhance our curriculum were geared towards the work readiness of graduates.

To this end, we revised the Bachelor of Science (Hons) Pharmaceutical Chemistry (BSc (Hons) Pharm Chem) curriculum to include longer durations of internship and research. We also implemented industry project-based learning with CCM Pharmaceuticals in the Bachelor of Pharmacy (Hons) (BPharm (Hons)), BSc (Hons) Pharm Chem and Master of Pharmacy Practice (MPP) programmes. The initiative gave students a taste of

PROGRAMMES



Bachelor of
Pharmacy (Hons)

Bachelor of Science (Hons)
Pharmaceutical Chemistry



the industry’s work environment. In business management studies, for example, student teams developed and presented posters featuring strategies for marketing CCM products. Teams were guided and evaluated by industry experts and School faculty, and awards were presented to the teams with the three best posters. The activity was well received by students, faculties and industry partners.

Other initiatives included the real-world projects in collaboration with Caring Pharmacy and AM PM Pharmacy, in which students were tasked with developing education materials to address real-world issues. The School also engaged experts from various industries to give lectures and workshops to our students.

In 2018 the first Provisional Registration Pharmacist (PRP) training was successfully completed under the R&D Academia track and obtained Full Registration Pharmacist (FRP) status. The Board of Governors also approved the launch of our Master of Healthcare Analytics Programme.

ENRICHING THE LEARNING EXPERIENCE

Throughout the year we sought to create learning opportunities that extended beyond the classroom, for both students as well as professionals keen on continuing professional development (CPD).

School of Pharmacy in numbers



FRGS GRANTS
WORTH RM491,000



ANNIVERSARY
BSC (HONS) PHARM CHEM



RESEARCH PUBLICATIONS
PUBLISHED IN ISI/SCOPUS-INDEXED JOURNALS



In August the School hosted the 6th International Postgraduate Conference in Pharmaceutical Sciences (iPOPS). This major conference, organised in collaboration with Tokyo University of Science (TUS) and Universiti Teknologi MARA (UiTM), brought together 150 participants and speakers from India, Japan, Indonesia, Thailand, Taiwan, Australia, New Zealand, the UK and Denmark. iPOPS was part of the 10th Anniversary celebrations for the BSc (Hons) Pharm Chem programme.

In 2018 we also organised for our BPharm students three lectures on complementary medicine by representatives from Blackmores Institute, a renowned complementary medicine research institution based in Australia. Other events included the Science Discovery Challenge and a "Nobel Prize in Chemistry Prediction 2018" e-poster contest for Pharm Chem and Foundation in Science students.

The IMU Pharmacy Students' Association (IPSA) was formed in March. The School supported IPSA's first public health campaign, themed "Smoking Cessation and Prevention" at Sekolah Sukan Bukit Jalil (SSBJ).

For practitioners already in the industry, the School conducted two CPD courses, and a contract CPD with Evanovik, an international company producing pharmaceutical excipients.

RESEARCH AND CONSULTANCY

The School took concerted measures to support, mentor and encourage the faculty to do their best in research and consultancies, and these efforts paid off. One of our highlights in 2018 was the amount of external research funding we secured, which totaled RM806,000.

The School's faculty, as principal investigators, secured four FRGS grants worth RM491,000, one contract research worth RM300,000 from Hyperwave Pte Ltd; RM5,000 from the Malaysian Rubber Board and RM10,000 from Taylor's University.

We achieved an increase in full time equivalent (FTE) of 1.72 in research publications, and filed one Malaysian patent. We also developed an ICP-MS method for the quantification of Class I heavy metals in creams and herbal products as part of the Institute of Research, Development and Innovation's plan for commercial service.

In 2018 the first Provisional Registration Pharmacist (PRP) training was successfully completed under the R&D Academia track and obtained Full Registration Pharmacist (FRP) status.

ENSURING SUSTAINABILITY

Alongside our emphasis on students' academic experience and excellence in research, we also took measures to ensure the long-term sustainability of the School. Efforts throughout the year in review were focused on improving visibility of the School, faculty and student achievements; and increasing student intake.

In this respect, the many events we organised in 2018 not only enriched students' learning, they also helped to increase the School's visibility, as did other activities where we engaged with prospective students and the general public. Two notable events in this regard were an outreach programme conducted at SMJK Ave

Maria Convent in Ipoh, and a session on the safe use of medications, held for the public through a collaboration with Suvarnamitra Association.

Meanwhile, on the international front, we became an institutional member of the International Pharmaceutical Federation (FIP).

MOVING FORWARD

In the coming year we shall aim to increase the number of articulation/ dual degree arrangements, develop new undergraduate programmes, conduct short courses and CPD programmes, and enhance our curriculum and partnerships to ensure work readiness for the local and global job markets.



Pharmacy Professional Day

SCHOOL OF
**HEALTH
SCIENCES**



2018

Highlights

- SOHS 10th Anniversary
- Conferment of Accreditation by the International Confederation of Dietetic Associations (ICDA)
- Formation of the Graduate Preparedness Advisory Committee (GPAC)
- Various MoUs signed between the faculties and other institutes
- Bachelor of Nursing Science (Hons) Post Registration and Bachelor of Science (Hons) Biomedical Science obtained accreditation renewals for another five years

At the School of Health Sciences (SOHS) we believe in producing accomplished, passionate and committed health professionals who are deeply sensitive to the welfare of their patients. Our School's undergraduate programmes—Nutrition, Dietetics with Nutrition, Biomedical Science, Medical Biotechnology, Nursing and Nursing Science—seek to inculcate lifelong learning and empower students with skills and knowledge-based experiences applicable in their respective industries and fields.

PROGRAMMES



Bachelor of Science (Hons)
Dietetics with Nutrition

Bachelor of Science
(Hons) Nutrition



Bachelor of Science (Hons)
Biomedical Science

Bachelor of Science (Hons)
Medical Biotechnology



Bachelor of
Nursing (Hons)

Bachelor of Nursing Science
(Hons), Post Registration



With continuous hard work, dedication and the joint efforts of faculty members and students, the School had a productive year that included several accomplishments and accreditations. At the prestigious Asian Congress of Dietetics held in Hong Kong in July, our Bachelor of Science (Hons) Dietetics with Nutrition programme gained the International Accreditation for Education Programs for Dietitian-Nutritionists for June 2018 to June 2022 from the International Confederation of Dietetic Associations (ICDA). The ICDA is a global organisation for dietetics professionals with 200,000 members from over 50 countries.

Our university was the first in the world to receive this accreditation and the achievement was the result of our commitment to continuously improving and updating our programmes to meet global standards. The accreditation will also help our dietetics graduates seek employment opportunities in the country and abroad.

Locally, the School's Bachelor of Science (Hons) Biomedical Science programme and Bachelor of Nursing Science (Hons) Post Registration programme received a five-year (2019-2024) accreditation renewal from the Ministry of Education (MoE). We have also completed the curriculum review for the reactivated Bachelor of Nursing (Hons) programme in accordance with updated 2018 standards released by the Nursing Board of Malaysia and the Malaysian Qualifications Agency.

ENHANCING INDUSTRIAL AND INTERNATIONAL LINKAGES

Strengthening linkages with industry was an essential component in SOHS' ASPIRE II goals set in 2017. SOHS formally established the Graduate Preparedness Advisory Committee (GPAC) early in 2018 with six key industry members representing Biomedical Sciences, Dietetics with Nutrition, Medical Biotechnology, Nursing and Nutrition programmes.

The School of Health Sciences in 2018



29

RESEARCH PUBLICATIONS
BY ABSB DIVISION. 24 WERE IN ISI/SCOPUS PUBLICATIONS



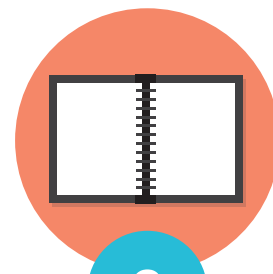
100%

INCREASE IN ISI/SCOPUS PUBLICATIONS COMPARED TO 2017



79%

ISI/SCOPUS PUBLICATIONS APPEARED IN TIER 1 AND TIER 2 JOURNALS



3

MOUs SIGNED



1st

IN THE WORLD
TO RECEIVE ICDA ACCREDITATION

The committee agreed to share knowledge on current best practices, relevant competencies and provide insights into future directions of the employment market for graduates. They also committed themselves to providing feedback on training curricula as well as helping to build a strong foundation of support and communication between the industry and SOHS' programmes.

A forum was held in October at which GPAC members spoke on "Skills and Attributes that Millenials Need to Succeed in the Workplace". The inaugural GPAC meeting was held shortly after the forum concluded, with breakout sessions to discuss perspectives on the future of the professions with identification of key gaps and strengths of each programme.

Annual scheduled meetings are expected to take place between faculty and GPAC members to strengthen the curriculum of all programmes in SOHS and to equip students for future demands of their industries.

Leveraging on our strong ties with various industry players and institutes, the Nutrition and Dietetics (N&D) Division signed MoUs with Rutgers University in the US and Sri Ramachandra University in Chennai, India. These links will widen academic opportunities in the areas of research, student exchange and mobility. The Applied Biomedical Science and Medical Biotechnology (ABSB) Division also signed an MoU with ASIA-International Biomedical Science Consortium in December. This is intended to enable the Division to collaborate with other participating Malaysian universities as well as foreign institutions in Vietnam, the Philippines, Hong Kong and Thailand.

MoUs such as these have enabled the ABSB Division to successfully implement a 1,000-hour practical attachment for its students this year with the participation of various universities from Switzerland, Australia, New Zealand, Taiwan, Singapore and Thailand. Phase One of the module recorded 62 percent of students participating in the outbound



The Graduate Preparedness Advisory Committee is committed to providing feedback on training curricula as well as helping to build a strong foundation of support and communication between the industry and SOHS' programmes.

student mobility programme, with the placements consisting mainly of research attachments.

Under the Bachelor of Nursing (Hons) programme, six students participated in a month-long outbound mobility programme during their final year. Three were attached to the Taipei Tzu Chi Hospital and another three to the Tan Tock Seng Hospital in Singapore.

RESEARCH AND CONSULTANCY OUTPUT

The School regularly encourages faculty members and students to conduct research as a means of contributing to their respective areas of study. To support this, the School organised its inaugural SOHS Research Day in October, which included a variety of activities such as an oral presentation competition and talks on proposal-writing skills and funding opportunities.

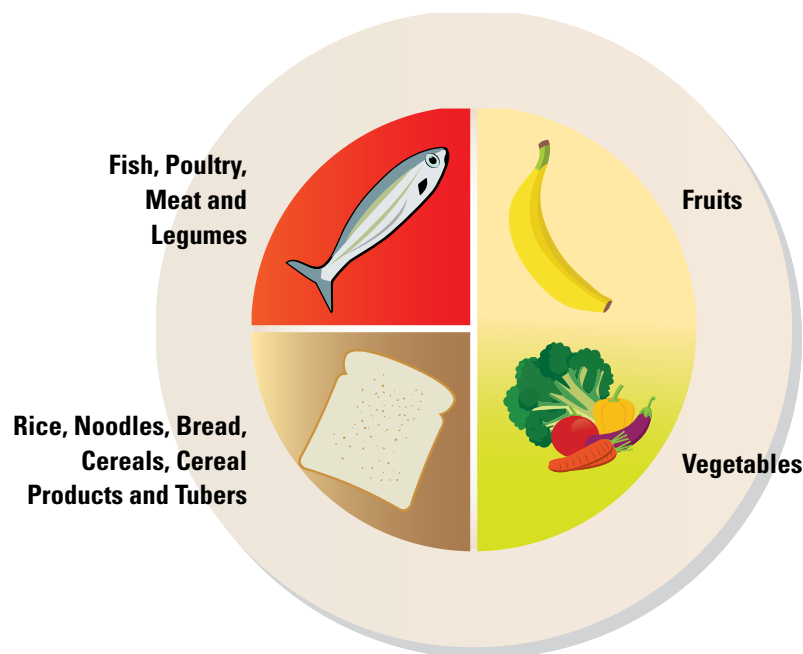
This year, the ABSB Division published 29 articles, 24 of which appeared in ISI/Scopus journals, with 79 percent of these classified as Tier 1 and Tier 2 journals. Of the same 24 journals, five were international peer-reviewed journals. This output has increased our ISI/Scopus publications figure by 100 percent compared to the 12 ISI/Scopus journal publications in 2017. In addition, a total of three research papers by the Nursing Division were published by various research journals.

Members of our faculty also successfully secured several appointments, grants, contracts and consultancy opportunities during the year. The ABSB Division secured one contract and grant respectively amounting to almost RM200,000 in total

and the N&D Division secured three grants worth more than RM600,000 in total.

CONTINUING PROFESSIONAL DEVELOPMENT

Rapidly-developing skills and technologies have meant that healthcare professionals must continue to improve and expand their knowledge and skill sets. This year, we increased our efforts to promote CPD courses to external parties and adopted a strategy of selecting CPD topics that tackled the specific needs of diagnostic laboratory personnel. This successfully attracted external participants and in 2018, 76 percent of participants who attended ABSB CPD courses were from outside IMU.



Objectives of the Nutrition and Dietetics programme include helping Malaysians move towards a healthier diet.

Under the Nursing Division, we now offer CPD courses in teaching methodology for nurses. This is offered as an alternative as it is no longer compulsory for nurses who teach to possess the Post Basic Certificate in Teaching Methodology for Nurses. The division also conducted the first IMU Nursing Colloquium entitled “Embracing Change: Nursing in the 21st Century” as part of its ongoing initiative to promote CPD programmes in nursing.

ENGAGING THE NEXT GENERATION

In order to engage with the younger generation, we organised events such as the inaugural Medical Biotechnology DNA Day. Themed “Helix: The Code of Life”, the event emphasised the importance of medical biotechnology and its effects on and contributions to health and modern medicine. This attracted over 200 secondary school pupils and teachers from the Klang Valley. The DNA model-building competition received overwhelming participation from the schools.

Meanwhile the Nursing Division engaged industry players such as Melorita Sdn Bhd and Hospis Malaysia, which organised promotional activities such as school career talks and also offered bursaries to raise awareness of Nursing programmes. Social media and other online platforms have also been used to reach out to the next generation of students.

MOVING FORWARD

The coming year will see the N&D Division focused on establishing the IMU Food and Clinical Nutrition Centre (IFCN). The Centre will serve as a central research body in clinical nutrition and food environment, and will seek to contribute to the transformation of national policy pertaining to food environment improvement. We hope to make the IFCN a leading centre in Southeast Asia in the field of food and clinical nutrition. Through the centre, we aspire to develop an all-encompassing ecosystem to generate a diverse source of income for the division via research and consultation, as well as help widen our students’ career options and pathways.



SOHS Research Day

Rapidly-developing skills and technologies have meant that healthcare professionals must continue to improve and expand their knowledge and skill sets.

Meanwhile, the ABSB Division will carry on enhancing experiential learning and providing additional skills certification, to increase students' competitiveness once they enter the workforce. The division is also targeting working professionals (particularly diagnostic laboratory personnel) for top-up degree courses as well as additional training via CPD courses.

The Nursing Division will remain dedicated to organising promotional activities such as school career talks and community engagement activities while also intensifying its participation and discussion with industry players. As demand for CPD courses is rising, the division will continue to offer CPD courses for working nurses.



Celebrating a decade of excellence

A DECADE OF EXCELLENCE

The School celebrated its 10th Anniversary in 2018 and organised several events throughout the year under the theme, "Quality Life through Innovation". The events included the **International Biomedical Laboratory Science Day**, which gave attendees hands-on experience in the areas of biochemistry, haematology, histology, forensic science and biochemistry; the **First Diagnostic Lecture Series 2018: Essentials of Cytology**, a CPD workshop for academicians, diagnostic laboratory personnel and students; and the **Inaugural IMU Society of Biomedical Science Symposium (ISBS) 2018: Molecular Diagnostics—Promises and Possibilities**. This symposium sought to raise interest in research and update students on the latest knowledge, progress and challenges in molecular diagnostics.

We also hosted our **Alumni Homecoming Night** to connect the School's alumni with current students and establish an SOHS community; and the **10th Anniversary SOHS Gala Dinner**, which was held in November. The **SOHS 10th Anniversary Logo design competition** saw Medical Biotechnology student Melvin Yong contributing the winning design. His coursemates Hans Lee and Andrew Octavian Sasmita placed second and third respectively.





CENTRE FOR
**COMPLEMENTARY AND
ALTERNATIVE MEDICINE**

2018

Highlights

- Formation of the CCAM in July
- Launch of Master of Science in Acupuncture programme
- First cohort of students admitted to the acupuncture programme
- Reaccreditation of the chiropractic programme by the Council on Chiropractic Education Australasia (CCEA)

PROGRAMMES



Bachelor of Science (Hons)
Chinese Medicine

Bachelor of Science
(Hons) Chiropractic



Master of Science
Acupuncture

The Centre for Complementary and Alternative Medicine (CCAM) is IMU's latest addition to its schools of education, and it attests to the University's drive to keep expanding its range of offerings. Established in July, the Centre focuses on developing world-class education, service and research in complementary and alternative medicine. The Centre offers Bachelor of Science with Honours programmes in Chiropractic and Chinese Medicine, both of which meet regional and international standards as well as requirements for licensure. We also offer a Master's programme in Acupuncture designed for healthcare professionals seeking to broaden their scope of practice.

The CCAM trains future practitioners of Chiropractic and Chinese Medicine in a rigorous and practical setting. Its core vision is to become a world-class provider of education, service and research in complementary and alternative medicine as well as to provide regional leadership in the subject area. Hands-on experience is central to the programmes offered, and students are guided towards clinical internships at IMU Healthcare Centres during their fourth year of study.

THE PROGRAMMES

Besides its own successful establishment, the Chinese Medicine faculty worked hard in 2018 to launch the new Master of Science in Acupuncture, ensuring that the programme complied with all regulations necessary for approval by the Malaysian Qualifications Agency. The first batch of eight students, who are medical doctors, began training in September.

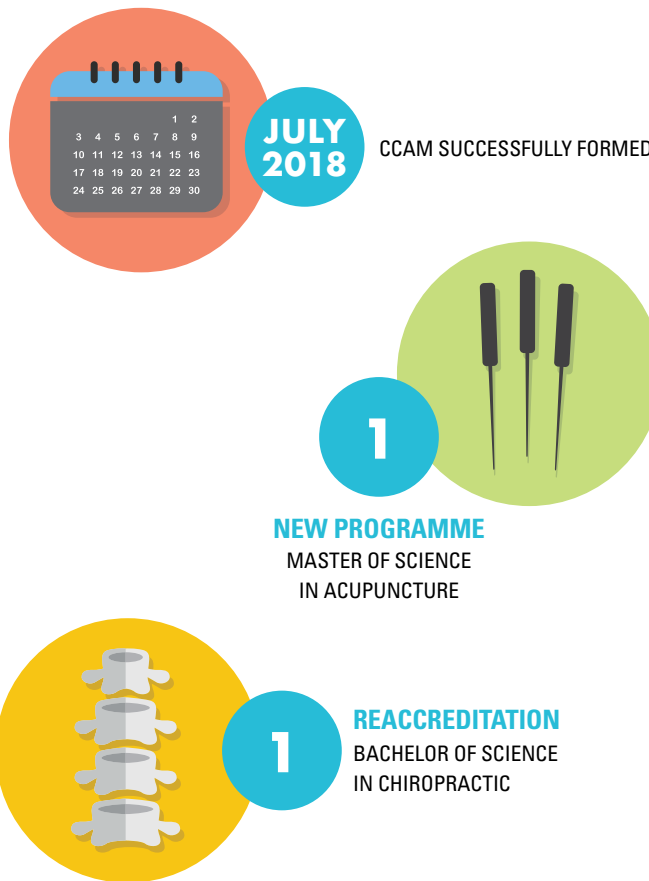
The Bachelor of Science (Hons) Chiropractic programme was reaccredited by its programmatic accreditor, the Council on Chiropractic Education Australasia (CCEA), which oversees chiropractic programmes in Australia, New Zealand, South Korea, Japan and Malaysia. The accreditation period extends to 2023. The IMU chiropractic programme remains the only CCEA-accredited programme in Southeast Asia.

Along with the chiropractic programme, the Bachelor of Science with Honours degree programme in Chinese Medicine is now also part of the CCAM. They were both previously offered under the School of Health Sciences.

GROWTH AND EXPANSION

Both the Chinese Medicine and Chiropractic programmes grew during 2018, with exceptionally large classes in the September intakes and overall student numbers reached an all-time high.

Centre for Complementary and Alternative Medicine: 2018 in numbers



Faculty members have been undergoing additional training to improve their research capacities, and the Centre matched them with accomplished researchers from other schools within IMU to ensure that they were able to gain more experience and learned from their counterparts.

MOVING FORWARD

The CCAM has many exciting plans for the future. Besides the ongoing rollout of new modules for the MSc Acupuncture programme, we are planning a joint Chiropractic/Chinese Medicine Continuing Professional

Development (CPD) event in 2019 that will focus on lower-back pain treatment. This will be the first in a series of regional CPDs in the future.

Also, the Chinese Medicine Division plans to develop a short course in infantile massage (child massage) after the MSc Acupuncture programme has been fully implemented, while the CCAM as a whole will continue to expand its faculty by training local chiropractors for faculty positions. We currently have two Malaysian chiropractors in the IMU Master of Science in Public Health programme

who are scheduled to graduate in April 2019, after which they will join the faculty at the CCAM.

We are also looking towards the expansion of physical facilities for the chiropractic programme and are working with IMU Healthcare to develop another chiropractic centre where chiropractic interns can practice.

Faculty members have been undergoing additional training to improve their research capacities, and the Centre matched them with accomplished researchers from other schools within IMU to ensure that they are able to gain more experience and learn from their counterparts.



SCHOOL OF
**POSTGRADUATE
STUDIES**



2018

Highlights

- SOPGS, previously a part of the Institute for Research, Development and Innovation (IRDI), became a separate entity
- Graduation of the inaugural cohort of the Master of Pharmacy Practice (MPP) programme
- Enrolment of the inaugural student for the Dual Award Doctoral Degree (DADD) programme with the University of Newcastle, Australia
- Obtained approval from the Ministry of Education (MoE) for the launching of two Open and Distance Learning (ODL) programmes—MSc in Molecular Medicine (MMM) and MSc in Public Health (MScPH)

Postgraduate students are vital contributors to the intellectual vibrancy of a university. At IMU, the School of Postgraduate Studies (SOPGS) supports, administers and coordinates the University's higher degrees (Masters and PhD) by research, and taught Masters programmes. The School aims to ensure that all aspects of the postgraduate experience, both academic and social, are of the highest quality.

PROGRAMMES



PhD in Medical & Health Sciences (by Research)

MSc in Medical & Health Sciences (by Research)



MSc in Public Health

MSc in Analytical & Pharmaceutical Chemistry



MSc in Molecular Medicine

Master of Pharmacy Practice



Health Professions Education (Postgraduate Certificate/ Postgraduate Diploma/ Master)

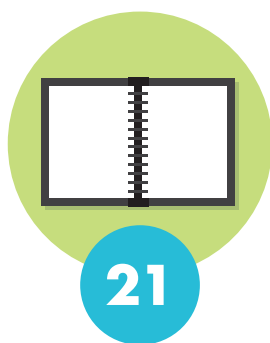
The evolutionary arc of the School of Postgraduate Studies (SOPGS) saw the School undergoing a significant transformation in 2018. Previously the academic arm of IMU’s Institute for Research, Development and Innovation (IRDI), SOPGS became a separate entity effective January following a major organisational restructuring of IRDI.

A paper was also presented to the IMU Senate to clarify SOPGS’ relationship with other schools, especially with regard to the management of the postgraduate (PG) taught programmes. To enable the School to fully focus on managing the postgraduate programmes, SOPGS’ role in managing the Bachelor of Medical Sciences (BMedSc) programme was transferred to the School of Medicine in June.

As a result of these organisational developments, the School’s responsibilities became more clearly focused on the management of the taught PG programmes. This, coupled with a strong team spirit, enabled us to record key achievements in 2018.

The year in review saw the graduation of five PhD and nine MSc by Research students. Additionally, eight graduands from the inaugural cohort of the Master of Pharmacy Practice (MPP) programme received their scrolls at the IMU Convocation in November.

School of Postgraduate Studies’ year in review



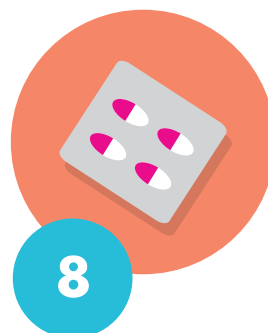
POSTGRADUATE PAPERS
IN TIER 1 AND TIER 2
JOURNALS



PHD RESEARCH STUDENTS
GRADUATED



MSc RESEARCH STUDENTS
GRADUATED



MASTER OF PHARMACY PRACTICE (MPP) STUDENTS
GRADUATED (INAUGURAL COHORT)

In research, SOPGS continued to impress on both supervisors and PG students the importance of publishing in indexed journals. In 2018, there were a total of 21 postgraduate papers from SOPGS, a significant increase from 12 in 2017. All were in Tier 1 and Tier 2 journals:

- 1 Wan JK, Chu WL, Kok YY, Lee CS. Distribution of microplastics and nanoplastics in aquatic ecosystems and their impacts on aquatic organisms, with emphasis on microalgae. *Reviews of Environmental Contamination and Toxicology*. 2019;246:133 – 158.
- 2 Tan SY, Mei Wong JL, Sim YJ, Wong SS, Mohamed Elhassan SA, Tan SH, Ling Lim GP, Rong Tay NW, Annan NC, Bhattamisra SK, Candasamy M. Type 1 and 2 diabetes mellitus: A review on current treatment approach and gene therapy as potential intervention. *Diabetes and Metabolic Syndrome: Clinical Research and Reviews*. 2019;13(1):364 – 372.
- 3 Gan SY, Wong LZ, Wong JW, Tan EL. Fucosterol exerts protection against amyloid β -induced neurotoxicity, reduces intracellular levels of amyloid β and enhances the mRNA expression of neuroglobin in amyloid β -induced SH-SY5Y cells. *International Journal of Biological Macromolecules*. 2019;121:207 – 213.
- 4 Elhassan, SAM, Candasamy M, Chan EWL, Bhattamisra, SK. Autophagy and GLUT4: The missing pieces. *Diabetes and Metabolic Syndrome: Clinical Research and Reviews*. 2018; 12 (6): 1109 – 1116.
- 5 Yang SK, Yap PSX, Krishnan T, Yusoff K, Chan KG, Yap WS, Lai KS, Lim SHE. Mode of action: Synergistic interaction of peppermint (*Mentha x piperita* L. Carl) essential oil and meropenem against plasmid-mediated resistant *E. coli*. *Records of Natural Products*. 2018; 12 (6): 582 – 94.
- 6 Vello V, Umashankar S, Phang SM, Chu WL, Lim PE, Nazia AM, Liew KE, Swarup S, Chew FT. Metabolomic profiles of tropical *Chlorella* and *Parachlorella* species in response to physiological changes during exponential and stationary growth phase. *Algal Research*. 2018;35: 61 – 75.
- 7 Chan LL, Mak JW, Ambu S, Chong PY. Identification and ultrastructural characterization of acanthamoeba bacterial endocytobionts belonging to the alphaproteobacteria class. *PLoS ONE*. 2018;13 (10): art. no. 0204732.
- 8 Choudhury H, Pandey M, Chin PX, Phang YL, Cheah JY, Ooi SC, Mak KK, Pichika MR, Kesharwani P, Hussain Z, Gorain B. Transferrin receptors-targeting nanocarriers for efficient targeted delivery and transcytosis of drugs into the brain tumors: a review of recent advancements and emerging trends. *Drug Delivery and Translational Research*. 2018;8(5): 1545 – 1563.

As a result of these organisational developments, the School's responsibilities became more clearly focused on the management of the taught PG programmes. This, coupled with a strong team spirit, enabled us to record key achievements in 2018.

- 9 Mak KK, Tan JJ, Marappan P, Balijepalli MK, Choudhury H, Ramamurthy S, Pichika MR. Galangin's potential as a functional food ingredient. *Journal of Functional Foods*. 2018;46:490 – 503.
- 10 Mak KK, Rathinasabapathy T, Sankaran S, Kandasamy M, Ling ECW, Balijepalli MK, Sagineedu SR, Pichika MR. Edible foxtail millet flour stabilises and retain the in vitro activity of blueberry bioactive components. *International Journal of Food Science and Technology*. 2018;53 (7):1771 – 1780.
- 11 Vello V, Chu WL, Lim PE, Majid NA, Phang SM. Metabolomic profiles of tropical *Chlorella* species in response to physiological changes during nitrogen deprivation. *Journal of Applied Phycology*. 2018; 1 – 21.
- 12 Wong CH, Gan SY, Tan SC, Gany SA, Ying T, Gray AI, Igoli J, Chan EWL, Phang SM. Fucosterol inhibits the cholinesterase activities and reduces the release of pro-inflammatory mediators in lipopolysaccharide and amyloid-induced microglial cells. *Journal of Applied Phycology*. 2018: 1 – 10.
- 13 Kuche K, Maheshwari R, Tambe V, Mak KK, Jogi H, Raval N, Pichika MR, Kumar Tekade R. Carbon nanotubes (CNTs) based advanced dermal therapeutics: Current trends and future potential. *Nanoscale*. 2018; 10 (19):8911 – 8937.
- 14 Jogi H, Maheshwari R, Raval N, Kuche K, Tambe V, Mak KK, Pichika MR, Tekade RK. Carbon nanotubes in the delivery of anticancer herbal drugs. *Nanomedicine*. 2018;13 (10):1187 – 1220.
- 15 Wong WS, Lee CS, Er HM, Lim WH, Wong SF. Biocompatible palm stearin-based polyesteramide as polymer carrier for solid dispersion. *Journal of Applied Polymer Science*. 2018;135 (8): art. no. 45892.
- 16 Wan JK, Chu WL, Kok YY, Cheong KW. Assessing the toxicity of copper oxide nanoparticles and copper sulfate in a tropical *Chlorella*. *Journal of Applied Phycology*. 2018; pp. 1-13.
- 17 Wong SF, Lim PKC, Mak JW, Ooi SS, Chen DKF. Molecular characterization of culturable bacteria in raw and commercial edible bird nests (EBNs). *International Food Research Journal*. 2018; 25 (3): 966-974.



One of our principal aims in 2018 was to increase the variety of PG programmes and the delivery methods of the programmes to cater to the needs of adult learners.

- 18 Chu WL, Dang NL, Kok YY, Ivan Yap KS, Phang SM, Convey P. Heavy metal pollution in Antarctica and its potential impacts on algae. *Polar Science*. 2018.
- 19 Yeo BS, Chu WL, Wong CY, Kok YY, Phang SM, Tan BK, Mustafa EM. Combined effects of glufosinate ammonium and temperature on the growth, photosynthetic pigment content and oxidative stress response of *Chlorella* sp. and *Pseudokirchneriella subcapitata*. *Journal of Applied Phycology*. 2018.
- 20 Low YM, Chong CW, Yap IKS, Chai LC, Clarke SC, Ponnampalavanar S, Abdul Jabar K, Md Yusof MY, Teh CSJ. Elucidating the survival and response of carbapenem resistant *Klebsiella pneumoniae* after exposure to imipenem at sub-lethal concentrations. *Pathogens and Global Health*. 2018.
- 21 Yang SK, Low LY, Yap PSX, Yusoff K, Mai CW, Lai KS, Lim SHE. Plant-derived antimicrobials: Insights into mitigation of antimicrobial resistance. *Records of Natural Products*. 2018; 12 (4): 295-316.

EXPANDING OUR RANGE OF POSTGRADUATE OPTIONS

One of our principal aims in 2018 was to increase the variety of PG programmes and the delivery methods of the programmes to cater to the needs of adult learners. To this end, we undertook four initiatives.

A major highlight of the year for SOPGS was the launching of the Dual Award Doctoral Degree (DADD) programme in partnership with the University of Newcastle (UoN), Australia, with one pilot candidate commencing her studies at UoN. Under this programme, a candidate will receive doctorate degrees independently from both IMU and UoN upon successfully completing the PhD. The PhD awarded by both institutions will share one research project.

The second initiative involved the delivery of the PG programmes via the Open and Distance Learning (ODL) modes. Three postgraduate programmes, namely the MSc in Molecular Medicine (MMM), the MSc in Public Health (MScPH) and the MSc in Analytical and Pharmaceutical Chemistry (MAPC), were selected for this project. Our team prepared the relevant online content with the support of the eLearning Unit.

Provisional accreditation was successfully obtained for the three programmes. The MScPH and MMM obtained approval from the Ministry of Education (MoE), and are expected to be launched in March 2019.

We also initiated the double award of the Master's degree programme with Queen Mary University of London (QMUL). Upon completion of this double degree programme, students will be awarded with two degrees, i.e. MSc Molecular Medicine (MMM) from IMU and MSc Genomic Medicine from QMUL. There will be sharing of some modules, including the research project, between the two MSc programmes.

Finally, in line with our aspirations to expand the options of our current PhD programme, we submitted a paper to the Senate for a proposed programme for PhD by published work. Under this programme, a candidate would



receive a doctorate degree from IMU based on the merit of his/her selected publications. This programme offers an additional option for PhD candidates who have the proclivity for publishing their research work throughout the period of their doctoral candidature.

Besides enhancing the value and attractiveness of our PG programmes, the dual award/double degree arrangements mentioned above are expected to yield other important benefits for the School. These arrangements with partner institutions will help to promote the sharing of

expertise and technology/knowledge transfer, enhancing research collaboration with opportunities for joint research funding and publication as well as strengthening relationships with our partner institutions. The research findings can also lead to significant developments such as the formulation of policy papers for government consideration.

MOVING FORWARD

In the coming year we expect to continue focusing on three strategic goals: enhancing brand awareness; increasing the variety of PG

programmes; and increasing student numbers and diversity. Plans include the full implementation of the three ODL programmes initiated in 2018, with a focus on ensuring effective marketing and efficient delivery of the online courses. We will also consider emphasising areas related to big data and AI, which have attracted much interest in biomedical research. Another highlight will be IMU's latest postgraduate programme in Business in Healthcare Management (PGCert, PGDip and Master), which has been approved for launching and which will come under SOPGS.

In the coming year we expect to continue focusing on three strategic goals: enhancing brand awareness; increasing the variety of PG programmes; and increasing student numbers and diversity.



2018 PHD AND MSC GRADUATES AND THESIS TITLES

PhD in Medical and Health Sciences (by Research)

Hemavathy A/P Subramaiaam	Immunomodulatory effects of tocotrienol and <i>Spirulina</i> against a mouse breast cancer model: individual and combined effects
Lee Ching Li	Low calorie diet using liquid meal replacements versus conventional food for weight loss in obese Malaysian adults with Type 2 diabetes in an outpatient clinic setting
Ong Teik Hwa	Development of chitosan-propolis nanoparticle formulation as an antibacterial agent for control of biofilms formed by <i>Enterococcus faecalis</i> and <i>Staphylococcus epidermidis</i>
Shonia a/p Subramaniam	Elucidating the effects of gamma-tocotrienol supplementation on the T-helper and T-regulatory cells in a syngeneic mouse model of breast cancer
Siew Wei Fern	Work-injury management and return-to-work in the manufacturing industry in Selangor, Malaysia

MSc in Medical and Health Sciences (by Research)

Chan Chee Shan	Metabolic responses to isomaltulose by Malaysian Chinese adults: a pilot study
Choong Siew Ling	Allergenic potential of three airborne algae and cyanobacteria isolated from an office building in Kuala Lumpur
Folayan Adeola	Indoor air quality and related health impact in an electronic factory, an office and a winery in Malaysia
Lo Sing Gee	Molecular changes induced by in vitro invasion of human bronchial epithelial cell line (BEAS-2B) by <i>Cladosporium sphaerospermum</i>
Mak Kit Kay	Synthesis of novel 4,5,6,7-tetrahydrobenzo[<i>b</i>]thiophene as novel anti-inflammatory agents
Ng Pei Ying	Anticancer property of chiral pairs of ternary copper (II) complexes of 1,10-phenanthroline and alanine
Toh Yien Shin	Comparison of pathogenicity between <i>Vibrio cholerae</i> and its partnership with <i>Escherichia coli</i> or <i>Enterobacter cloacae</i> using <i>in vivo</i> mouse model
Wong See Kiat	Synthesis, characterisation and evaluation of star-branched folate-conjugated PLLA-PEG copolymers as nanocarriers for targeted delivery of doxorubicin
Yeoh Fang Hoong	Production of biocompatible and biodegradable waterborne porous polyurethane scaffolds from palm oil-based polyester polyol for tissue engineering

ACADEMIC ACHIEVEMENTS AND AWARDS

SCHOOL OF MEDICINE

Faculty achievements

- Prof Dr James Koh Kwee Choy became a Fellow of Royal College of Physicians.
- Dr Sunil Pazhayanur was elected a Member of Academy of Medical Educators.
- Dr Ali Mokhtar Pour became a Fellow of the College of Pathologists of Australasia.
- Dr Abdul Rasyid Sulaiman won the Best Oral Presentation Award at the 20th Annual Meeting of the International Society of Addiction Medicine.
- A/Prof Dr Nilesh Kumar won First Prize for his oral presentation on personalised learning at the Malaysian Association of Education in Medical and Health Sciences (MAEMHS).

Student achievements

- Nur Nabila Nasharuddin of ME1/16 and Anushka Suresh Kumar from ME2/16 were part of the IMU delegation of three debating teams and two adjudicators who participated in Universiti Kebangsaan Malaysia's MEDebate. They helped IMU secure a second consecutive annual win.
- Nur Nabila Nasharuddin also won the Best Position Paper Award at the 4th ASEAN Foundation Model ASEAN Meeting 2018.
- IMU School of Medicine team ATLAS (Semester 3) consisting of ME2/17 students Shawn Yeo Shuen Kai, Choi Xian Hung and Chia Tee Hang, came in first for their presentation and Q&A session on the topic, "Splénomegaly due to sickle cell anaemia".
- Humaid Ali won first place for his presentation on "Self-perceived diabetes-related distress among Type 2 diabetic patients attending specialist clinics in Hospital Tuanku Ja'afar" during the Negeri Sembilan Research Day.
- Tang Yita won second place for her presentation on "The burden of emergency general surgery at Hospital Tuanku Ja'afar" during the Negeri Sembilan Research Day.
- Daniel Chin Hong Jeng came in third for his presentation on "Five-year survival rate of colorectal cancer in Hospital Tuanku Ja'afar" during the Negeri Sembilan Research Day.
- The Malaysian Students' Surgical Society (MSSS), the brainchild of IMU's Surgical Society, was launched in October in conjunction with the first Malaysian Students' Surgical Symposium, which seeks to create a platform for student surgical societies to network and exchange experience and knowledge.

SCHOOL OF DENTISTRY

Faculty achievements

- Dr Ranjeet Bapat received an IMU Achievement Award in Research & Publications (individual category) for his publications in the *New England Journal of Medicine*.
- Dr Rohit Pandurangappa was awarded the IMU Achievement Award for Faculty Development for his success at the Faculty of Dental Surgery Royal College of Surgeons of Edinburgh Diploma in Implant Dentistry Examination.
- Prof Khoo Suan Phaik received an IMU Achievement Award for Teaching Excellence. She also won the John Simpson Trophy for Teaching Excellence.
- Dr Naresh Shetty received the Fellowship in Dental Surgery of the Royal College of Surgeons of England (FDSRCS). He was also elected as a Fellow by the Royal College of Surgeons of Edinburgh, and awarded the Digital Smile Design Fellowship by the American Dental Association.
- The 30th annual South East Asia Association for Dental Education Scientific Meeting in 2019 will be held in Malaysia and IMU has been chosen to organise the event. Prof Toh Chooi Gait and Prof Allan Pau Kah Heng will co-chair the Meeting.

- Dr Sultan Omer Sheriff and Dr Sobia Bilal were awarded the inaugural Tan Sri Abu Bakar Award for their Technology Enhanced Learning (TEL) showcase at IMU's Learning Resources Festival.
- In 2018, Dr Pravinkumar Patil was in the top one percent in the field of 'Clinical Medicine' on Publons, a website that offers journal editing and free peer review services. He also bagged the website's Peer Review Award, and was selected to be a Member of Council for Prosthodontic Research by the Indian Prosthodontic Society.

Student achievements

- Tee Yin Xuan of DT1/14 won the Best Presenter award and was the First Runner-Up for Overall Performance at the annual 3M ESPE Fixed Prosthodontics Case Presentation Competition 2017-2018 in Shah Alam.
- Jimmy Lim from DT1/14 took home the First Prize at the National Dentsply Endodontics Competition and will represent Malaysia at the regional level.

SCHOOL OF PHARMACY

Faculty achievements

- Prof Leong Chee Onn received a 2018 Top Research Scientists Malaysia (TRSM) award in the fields of molecular pathogenesis of cancer and drug target discovery. He was also appointed a Fellow of the Royal Society of Biology (FRSB).
- Dr Lee Choy Sin won the IMU Teaching Excellence Award (Second Prize) for excellence in teaching for 2017 in the Individual Category. She was also awarded the Young Scientist Award by the Malaysian Oil Scientists' and Technologists' Association (MOSTA) on 17th October 2018.
- Dr Mai Chun Wai won the 2017 IMU Achievement Award under the Research & Publications group category. He also won the Best Educator award during Faculty Appreciation Week. At the International Pharmaceutical Federation (FIP), Dr Mai was appointed to the Board of Pharmaceutical Sciences of the FIP Young Pharmacists Group. At the Asian Young Pharmacists Group, he won the Professional Excellence Award and was

appointed Vice President. He was also appointed Chairperson of the Malaysian Pharmaceutical Society-Young Pharmacists Chapter; Council Member of the Malaysian Academy of Pharmacy and Malaysian Pharmaceutical Society; and Deputy Editor-in-Chief of IMU's International E-Journal of Science, Medicine and Education.

- Dr Cheong Kok Whye, Dr Lee Choy Sin and Dr Keng Pei Sin won the students' choice award in the BSc Pharm Chem programme during Faculty Appreciation Week.
- Kit-Kay Mak received the Wellcome Trust fellowship for undergoing training in drug discovery at the Wellcome Centre for Anti-Infectives Research at the University of Dundee. She also received two Artificial Intelligence Molecular Screen (AIMS) awards from US-based Atomwise for discovering antitubercular drugs using an artificial intelligence platform.
- Dr Dinesh Kumar Chellappan and Dr Hazwanie Hashim were awarded IMU Leadership Awards for 'Community Partnership' for service and dedication towards the IMU Cares activities. Dr Chellappan also won the Best Educator award during Faculty Appreciation Week.
- Dr Subrat Kumar Bhattamisra won the First Prize in poster presentation at Diabetes Asia 2017 Conference for his poster titled, 'Effect of catalpol in Type 2 diabetes mellitus induced by high fat diet and low dose streptozotocin in mice'.
- Lim Wei Meng won the best poster presentation at the Merck Young Scientist Award 2018.
- Prof Mallikarjuna Rao Pichika was awarded the prestigious Royal Society of Chemistry Fellowship (FRSC).
- A/Prof Mohd Zulkefeli was appointed a member of the Board of Study for Faculty Engineering Technology, Universiti Malaysia Pahang, and Assistant Principal and Council Member of the Malaysian Academy of Pharmacy.
- Dr Sreenivasa Rao Sagineedu was awarded the designation of Chartered Chemist by the Royal Society of Chemistry, United Kingdom.
- Ng Yi Ling, Lee Khei Yan and Yew Wing Yee (BPharm) were champions at the 4th MyPSA National Clinical Pharmacy Challenge.
- Kishen Kunalan and Yong Yu Jing (BPharm) were champions at the 10th MyPSA National Pharmacy Quiz.
- IMU BPharm student teams won the top three prizes at the MyPSA, Young Entrepreneur Programme (YEP) under the theme Innovation in Geriatric Care: Chow Wai Hoong, Tan Yu Xin (first place); Lim Yan Qing, Lim Mou Sern, Hon Chian Ming, Yip Shuen Chi (second place); Lim Chea Hooi, Ho Hui San, Laurena Wong Gui Jin, Ng Eu Ping (third place).
- At the MyPSA Annual General Meeting, BPharm students holding positions included Desmond Yeoh and Tze Wei (Vice Presidents), Jane Lee Jia Jing (Secretary

Student achievements

- Cheng Miaw Chin (BSc (Hons) Pharm Chem) won the Institut Kimia Malaysia (IKM) Graduate Chemistry Medal.

General), Fathin Nadhirah Mohamed Shukri (Public Health Officer) and Wendy Yung She Min (Advocacy Officer).

SCHOOL OF HEALTH SCIENCES

Faculty achievements

ABSB Division

- Dr Tan Boon Hooi won the Best Poster Award at the International Conference of Biochemistry, Molecular Biology and Biotechnology.
- Dr Koh Rhun Yian won the Best Oral Presenter Award at the International Conference on Recent Advances in Medical Science.
- Wong Ying Pei received a bursary at the 2018 International Association for Plant Biotechnology Congress held in Dublin, Ireland.

N&D Division

- Dr Yang Wai Yew won the Second Prize for Best Free Paper Oral Presentation at the 24th Malaysian Dietitians' Association Conference 2018. Dr Yang also won the Publication Award at the 33rd Nutrition Society of Malaysia (NSM) Conference.
- Dr Harvinder Kaur won the Third Prize for Best Dietitian Research Poster at the 24th Malaysian Dietitians' Association Conference 2018.
- Ng Kar Foo won the Second Prize for Best Dietitian Case Study Poster.
- Dr Sangeetha Shyam was awarded the Newton-Ungku Omar Fund Researcher Link Award by the Newton-Ungku Omar Fund. She was also appointed Associate Editor and Guest Editor for the Malaysian Journal of Nutrition and AIMS Medical Science Special Issue respectively.

- Dr Chang Sui Shin was also presented the Newton-Ungku Omar Fund Researcher Link Award by the Newton-Ungku Omar Fund.
- Dr Tan Seok Shin was awarded the Newton-Ungku Omar Fund Researcher Link Award by the Newton-Ungku Omar Fund, funded by the British Council. She was also nominated for the Malaysian Responsible Conduct of Research workshop, funded by the Academy of Sciences Malaysia.

Nursing Division

- Dr Lim Swee Geok completed his PhD at the University of Malaya.

Student achievements

ABSB Division

- Medical Biotechnology student Chan Chin Chun contributed to IMU's second consecutive win at the Universiti Kebangsaan Malaysia's (UKM) Intervarsity Medical Ethics Debate (MEDebate). The annual MEDebate is organised by UKM's Medical Faculty.



- Medical Biotechnology student Joshua Kuruvilla came in second for his oral presentation at the inaugural ISBS Symposium 2018. Biomedical Science student Stefanie Shee Mei En came in third for her oral presentation at the same event.
- Biomedical Science student Thien Vui Kien won the First Prize for an oral presentation at the inaugural SOHS Research Day on 26 October. Quek Xin Fei won the Second Prize.

N&D Division

- Chong Jia Jun won First Prize for Student Case Study Oral Presentation at the 24th Malaysian Dietitians' Association Conference 2018.

Nursing Division

- The entire NU1/14 cohort passed the Malaysia Nursing Board Registration examination.
- Students Dassini Nair A/P Arumugam and Yeoh Min Yan were awarded First Class Honours in their degree of Bachelor of Nursing Science (Hons) Post Registration at the IMU November 2018 Convocation.

CENTRE FOR COMPLEMENTARY AND ALTERNATIVE MEDICINE

Faculty achievements

- Prof Michael Thomas Haneline was awarded the Lifetime Achievement Award by the Chiropractic Health Care (CHC) Section of the American Public Health Association (APHA) in recognition of his significant contributions to the section's activities and improvement.

Student achievements

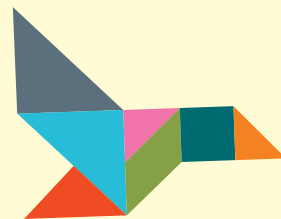
- Wong Pui Mun was awarded the Tun Zahir Merit Award at a prize presentation ceremony held on 2 November 2018.

SCHOOL OF POSTGRADUATE STUDIES

Student achievements

- Chan Chee Shan won the Nutrition Society of Malaysia (NSM) Postgraduate Thesis Prize 2018 for her thesis titled "Metabolic Responses to Isomaltulose by Malaysian Chinese Adults: A Pilot Study." The supervisors of the project were Prof Peter Michael Barling, Dr Sangeetha Shyam and A/Prof Verna Lee Kar Mun.
- Wong Yi Hao won the Best Oral Presentation Award at the 20th International Conference on Medical Bacteriology, Mycology and Parasitology. He also won First Prize in the Poster Presentation Competition at the Malaysian Society of Parasitology and Tropical Medicine (MSPTM) Mid-Year Seminar in honour of Prof Mak Joon Wah.

ENHANCING SERVICES & RESOURCES



2018

Highlights

eLearning Unit

- IMU Basic eLearning License certification for over 40 academic staff
- Launch of the Open and Distance Learning (ODL) Portal
- Enhancement and redesign of the eLearning Portal
- Organised the IMU Learning Resources Festival

Medical Library

- Participation of IMU librarians at international conferences such as CONSAL and IFLA-WLIC
- Introduction of Basic Information Literacy Licence (BILL), a short course on basic skills in retrieving, filtering and organising information
- Implementation of the open-source KOHA Library System at IMU

Medical Museum

- Approximately 800 teaching and learning activities conducted at the Museum by various Schools
- Development of the Museum app

IMU's Learning Resources Department comprises the eLearning Unit, the Medical Library and the Medical Museum. The three departments play unique yet complementary roles in serving the University's students and faculty. From medical journals and anatomy models to online archives and digital learning tools, from conducive physical spaces to interactive and intuitive virtual platforms, we aim to provide users with all the support they need on their journey of intellectual discovery.

The eLearning Unit promotes technology-enhanced learning and creates awareness of the impact of technology on teaching and learning (T&L). In 2018, the Unit pursued three broad objectives: delivering blended learning, Open and Distance Learning (ODL) programmes and Massive Open Online Courses (MOOC); incorporating augmented and virtual reality, as well as simulations and interactive video-based content to enhance T&L; and moving towards personalised and adaptive learning with competency-based assessment.

The Medical Library supports the University's vision of being an innovative global centre of excellence in learning, research and healthcare by providing convenient and effective access to high-quality library services and collections in a variety of formats.

The Medical Museum is both a valuable IMU resource for T&L, and a key attraction for parents and visitors from other institutions. The emphasis is on achieving an optimal balance in which touch-and-feel aspects of learning are complemented with the use of digital resources to produce a stimulating, fun and engaging museum environment.

eLEARNING UNIT

Key initiatives during the year included the ongoing development and redesign of the Virtual Medical Clinic (VMC) launched in 2017. By making accessible information about the cases, history taking, management and diagnostic phases, the VMC enables students to check their knowledge in virtual cases and practice scenario-based learning. The VMC can also be linked to external digital collections.

The eLearning License was another area of focus. Since its launch in 2012, more than 150 staff have gained certification and been awarded the Basic eLearning License, which is a compulsory, self-paced online course for new staff. It covers the fundamentals in Instructional Design, PowerPoint, eLearning Content Development, Learning Management System (LMS) and Classroom Engagement Tools (Interactive Web Tools). In 2018 we certified more than 40 staff.

A third focus area was the Open and Distance Learning (ODL) Portal. ODL continues to be a key delivery method for adult learners. Besides the online lectures, there are online discussions and presentations that allow student-teacher interaction. The ODL was a key achievement for us, with the team helping to set up, design, develop and maintain the ODL Portal, with activity completion tracking and dashboard features for students to enjoy personalised learning experiences.

We also trained IMU faculty to convert their face-to-face content to online delivery, and received accreditation to run three programmes in ODL mode.

Another major achievement in 2018 was the upgrading of the IMU eLearning Portal to Moodle version 3.5, with the team successfully integrating various features and systems to ensure a seamless learning experience for IMU students and staff.

The fifth major initiative was the IMU Learning Resources Festival held from 9-11 October 2018. More than 150 IMU staff and students participated in activities such as the eLearning Showcases, Learning Innovation Talks, e-posters, Workshops, Mobile Apps Competition, video competition and Mobile Game activities. The theme this year was "Using Technology to Design Great Learning Experiences". A total of 56 mobile applications were submitted for the mobile app competition by the Foundation in Science (FiS) students and students from other institutions

By making accessible information about the cases, history taking, management and diagnostic phases, the Virtual Medical Clinic enables students to check their knowledge in virtual cases and practice scenario-based learning.

during the festival. Aside from this, a total of 13 eLearning innovation award projects were submitted.

MEDICAL LIBRARY

One of the year's highlights was the acceptance of our paper on Basic Information Literacy License (BILL) for presentation at the 17th Congress of Southeast Asian Librarians (CONSAL) in Naypyitaw, Myanmar in May. Our poster on the IMU Library Services App for Android users was also accepted for presentation at the 84th International Federation of Library Association – World Library and Information Congress (IFLA-WLIC) in Kuala Lumpur in August.

Our librarians' participation at CONSAL and IFLA-WLIC were proud moments for us as they showed that our work was recognised internationally and that our counterparts in other countries were keen for us to share our experience and expertise.

Another significant initiative in 2018 was the Basic Information Literacy License (BILL) programme. BILL is a unique two-day information literacy session designed to equip both students and faculty members with strong fundamental knowledge in retrieving, filtering and organising information for their lifelong learning. Participants were taught methods to enhance knowledge about library resources, improve strategic information searching skills, identify trusted and non-trusted information from various sources, and apply information found in daily tasks.

The BILL sessions were conducted using a blended learning method to encourage active participation. Ninety percent of total students in Semesters 3 and 4 and eleven faculty members participated in 2018.

The introduction of the KOHA Library System at IMU was yet another milestone for the year. One of the best known systems in the open-source platform, KOHA is a fully featured, scalable library management tool. In light of the ever-changing landscape, many libraries have opted for open-source technology for library systems. The product is supported by the library community worldwide as well as accepted by publishers and other information service providers.

The KOHA Library System was up and running at IMU on a trial basis beginning mid-October, and will be officially implemented in January 2019. It is anticipated that the system will save the University up to RM50,000 per year in annual maintenance costs, compared to the previous commercial system.



IMU eLearning License Workshop

MEDICAL MUSEUM

The Medical Museum continued to be a key support facility for teaching and learning (T&L), with approximately 800 T&L activities being conducted at the Museum by the various Schools. We also supported three Open Days, four Info Days, the Malaysia Brain Bee Competition, the Students Exploratory Workshop (SEW), the Foundation in Science (FiS) engagement activity and activities requested by the Marketing department.

With regard to facilities, we took steps to ensure the availability of relevant and complete anatomy models, including those frequently used in Medical Museum Sessions (MMS), examinations and independent study. We achieved our quality objective of ensuring that 90 percent of the models were in full form. In line with the IMU core value of responsiveness, we responded to student feedback on incomplete anatomy models by restoring 39 models. We also purchased real specimens of the digestive tract and other body parts and models to support and ensure sufficient resources to support T&L activities.

On the technology side, we initiated a collaboration with the FiS programme to develop a Museum app that will function as an interactive digital tool for visitors. Proposed features include a Museum directory, historical data and other content. Meanwhile, various digital resources available in the

market were explored and tested as a replacement for the Virtual Medical Museum, which was put on hold in 2018 due to copyright issues.

We worked to become a more interactive facility not just for IMU students and staff but also for the public, for example by organising hands-on informative activities during the IMU Open Day such as quizzes designed to engage potential students, parents and other visitors.

We received more visitors and participants during the 2018 Learning Resources Festival compared to previous years. We also managed to attract visitors to try the ADAM (Animated Dissection of Anatomy for Medicine) Interactive Anatomy online quiz and explore the database on a big interactive touch-screen panel.

The Medical Library supports the University's vision of being an innovative global centre of excellence in learning, research and healthcare by providing convenient and effective access to high-quality library services and collections in a variety of formats.



150 staff have gained certification and been awarded the Basic eLearning License

We also invited faculty members from various disciplines such as parasitologists, pathologists and anatomists to be involved in activities for Museum Open Day.

Their contribution made the activities livelier and more varied. Meanwhile, IMU students who helped with the activities had the opportunity to communicate to the general public what they had learnt in their courses.

In another faculty-related highlight, A/Prof Nilesh Kumar, with the support of the Medical Museum and the eLearning Unit, won the best oral presentation award for his project titled “I-MMS: An Aid To Personalised Learning In Anatomy” at the Malaysian Association of Education in Medical & Health Sciences (MAEMHS) Conference 2018. The project illustrated how e-content developed by a faculty member was used together with models and study guides in the i-MMS, which could then be accessed anytime, anywhere.

In 2018 the Museum also supported visits by pre-medical and pre-dental students from Sunway College, and exchange students from Prince Sattam Abdul Aziz University. We also collaborated with the Institute for Research, Development and Innovation in providing the venue and other resources for their IMU Cares activities with children from Rumah Victory.

At the Medical Museum

Finally, we took steps to improve our systems, including introducing a logbook to record all T&L sessions, revising the Museum loan form to ensure models borrowed were returned, and training our part-time students to encourage professionalism and commitment to their duties.

MOVING FORWARD

The eLearning Unit’s future plans include: helping the Schools of Medicine and Dentistry launch two MOOCs; launching the e-Training Portal to cater to demand for short courses and CPD workshops for external partners; working with the School of Medicine and the Ministry of Health (MoH) to launch short courses for MoH staff; and further developing the eLearning Portal.

The Medical Library will focus on strengthening the BILL programme by adding a digital literacy syllabus to the current content; adding more modules in KOHA for better functionality; and creating a library services app for IOS users.

The Medical Museum is expected to remain a popular attraction for visitors to IMU as well as a vital T&L resource for the IMU community, and its upkeep and enhancement will remain our focus. We hope to further position the Medical Museum as a centre for public education.



2018

Highlights

- 82 workshops and training sessions conducted
- 12 faculty members appointed as ICE Fellows
- Pioneer cohort of the Postgraduate Diploma in Health Professions Education (PGDHPE) commenced studies
- Three-year accreditation approval received for PGDHPE
- Organised IMEC 2018



The IMU Centre for Education (ICE) promotes excellence in teaching and learning at IMU. Besides offering a wide range of faculty training activities, ICE aims to organise at least one international conference on health professions education every year. ICE is also tasked with conducting various forms of evaluation to ensure continuous improvement in teaching and learning. Meanwhile, research and innovation in teaching methods and curriculum development are spearheaded by the Centre for Health Professions Education Research (CHPER).

In 2018, initiatives at the IMU Centre for Education (ICE) targeted three key areas. First, we diversified and aligned Faculty Development Activities (FDA) to the eight roles of the teacher and curricula needs of academic programmes. Second, we increased capacity and expertise in health professions education (HPE) via postgraduate programmes in HPE as well as through the appointment of ICE Fellows. Third, we enhanced research activities via the Centre for Health Professions Education Research (CHPER) through international engagement, writing retreats and research projects.

PROMOTING TEACHING EXCELLENCE

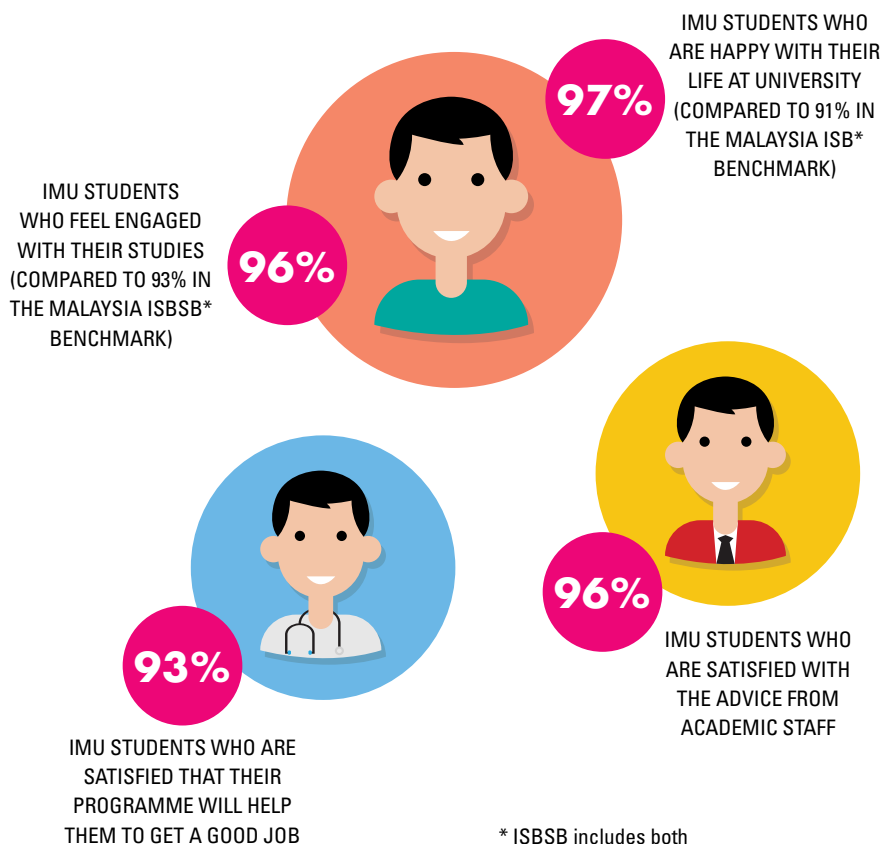
Our programme of Faculty Development Activities (FDA) for the year comprised a total of 82 workshops and training sessions. The themes and topics covered eight distinct roles played by faculty members: (1) Information Provider and Guide; (2) Role Model as Teacher and Practitioner; (3) Facilitator and Mentor; (4) Assessor; (5) Curriculum Developer and Evaluator; (6) Manager and Change Agent; (7) Scholar and Researcher; and (8) Professional and Enquirer into Own Competence.

IMU faculty also had the opportunity to exchange knowledge and insights with visiting faculty from other universities who participated in the delivery of various academic programmes.

The Ronald Harden Visiting Professorship (RHVP) for 2018 was Prof Richard Hays, Professor of Medical Education at the University of Tasmania. Prof Hays made two visits to IMU, in October and November. He facilitated modules in our Health Professions Education programmes (Certificate and Diploma); conducted a workshop on Assessment in Health Professions Education (intermediate and advanced levels); delivered an Academic Plenary on “Globalisation and Artificial Intelligence: Impact on Curriculum Development”; and was involved in Advisory Clinics with various Schools and Centres.

Prof Ray Peterson from the University of Adelaide visited IMU in June and facilitated modules in the Health Professions Education Programmes (Certificate and Diploma). He was also involved in Advisory Clinics with Schools and Centres. Prof Ian Wilson from the University of Wollongong visited IMU in November. Besides facilitating modules in Health Professions Education Programmes

Centre for Education: Highlights from the 2017 i-Barometer Survey



* ISBSB includes both foreign and local students

* ISB includes foreign students only

(Certificate and Diploma) and Advisory Clinics, he also delivered the Academic Plenary on "Digital Professionalism".

Dr Rebecca O'Rourke and Dr Helen Bradbury from the University of Leeds visited us in September. They conducted a workshop on Research Writing for Publication with one-to-one consultations, explored linking the IMU Postgraduate Certificate in Health Professions Education (PGCHPE), and facilitated face-to-face sessions of the PGCHPE module.

POSTGRADUATE PROGRAMMES IN HEALTH PROFESSIONS EDUCATION

The first cohort of the Postgraduate Certificate in Health Professions Education (PGCHPE) successfully completed the programme in February 2018 while the second cohort started in March 2018. The PGCHPE was awarded a three-year accreditation approval in 2017.

Meanwhile, the first cohort of the Postgraduate Diploma in Health Professions Education (PGDHPE) commenced studies in May 2018. Accreditation of the PGDHPE was conducted in August 2018 and the programme received a three-year

accreditation approval in December 2018.

In 2018 Dr Sarmishtha Ghosh was appointed Programme Director of PGCHPE, while Siti Suriani Abd Razak was appointed Programme Director of PGDHPE and Master of Health Professions Education (MHPE).

IMEC, ICE FELLOWS AND i-BAROMETER

The 13th International Medical Education Conference (IMEC) was held from 13-15 April, attracting a total of 376 local and international delegates.

The theme was "From Personalised Learning to Mastery of Competencies: Impact of Technology and Simulation on Health Professionals" (see feature article on page 77).

At IMEC 2018, 20 teams of students from 11 local and four international universities participated in the first ever Global University Medical Challenge (GUMC). The team from Chulalongkorn University, Thailand, took home a trophy and a cash prize of US\$2,400. Sponsored and co-organised by Global Education in Medicine Exchange (GEMx), the Challenge



Trying out new technology at the IMEC pre-conference workshops

The first cohort of the Postgraduate Diploma in Health Professions Education (PGDHPE) commenced studies in May 2018. Accreditation of the PGDHPE was conducted in August 2018 and the programme received a three-year accreditation approval in December 2018.

brought together students of various clinical disciplines and nationalities to form new bonds, establish networks for their future careers and exchange ideas, knowledge and experience.

The appointment of ICE Fellows was another highlight of the year. A total of 12 faculty members were appointed for a period of one year effective 1 July 2018, with the remit of enhancing activities in faculty development and research in health professions education.

The i-Barometer Survey conducted in 2017 recorded a 66 percent response rate, the highest among the participating institutions with a total of 2,648 students' participation. The results were published in December 2017 and the presentation of results was held on 21 February 2018. The overall satisfaction score has risen over the years, going from 83.5 in 2013, to 86.9 in 2015 to 91.5 in 2017.

CENTRE FOR HEALTH PROFESSIONS EDUCATION RESEARCH (CHPER)

Key publications in 2018 from the Centre for Health Professions Education Research (CHPER) included the following:

- Peters H, Zdravkovic M, João Costa M, Celenza T, Ghias K, Klamen D, Mossop L, Rieder M, Nadarajah VD, Wangsaturaka

D, Wohlin M, Weggemans M. Twelve tips for enhancing student engagement. *Medical Teacher*. 2018 Apr 22;1 – 6. doi: 10.1080/0142159X.2018.1459530.

- Er HM, Kuek MJM, Pei SK, Nadarajah VD. Pharmacy Students' Perceptions of Reflective Portfolios, and the Effect of the Portfolio on Students' Deep Information-Processing Skills. *American Journal of Pharmacy Education*. (Accepted March 2018, in press.)
- Callwood A, Kotronoulas G, Schneider A, Jeevaratnam K, Lewis L, Nadarajah VD. Personal domains assessed in multiple mini interviews (MMIs) for healthcare student selection: a narrative synthesis systematic review. *Nurse Education Today*. 2018 May;64:56 – 64. doi: 10.1016/j.nedt.2018.01.016. Epub 2018 Jan 31.
- Er HM, Nadarajah VD, Radhakrishnan AK. Development of an Institutional Assessment Framework. *Medical Education*. (Accepted January 2018. Mar 24. doi: 10.1111/medu.13568)
- Wong PS, Hasan SS, Ooi JL, Lim LSH, Nadarajah VD. Assessment of attitudes for interprofessional team working and knowledge of health professions competencies for final year health professional

students. Published online. *TAPS*. 2018 Jan 2;3(1): 27 – 37.

- Fong JYM, Tan VJH, Lee JR, Tong ZGM, Foong YK, Tan JME, Parolia A, Pau A. Clinical audit training improves undergraduates' performance in root canal therapy. *Eur J Dent Educ*. 2018 Aug;22(3):160 – 166.

MOVING FORWARD

In 2019 we aim to continue expanding our range of Faculty Development Activities, while also pursuing an active programme in research at CHPER. While we remain focused on promoting excellence in teaching and learning at IMU, we will also strive to play a more prominent role in shaping the field of health professions education in Malaysia.



IMEC pre-conference workshops



TECH AND TEACHERS

Can Technology Enhanced Learning (TEL) produce better healthcare professionals?

Technology Enhanced Learning (TEL) took centre stage at the 13th International Medical Education Conference (IMEC) in 2018. Designed around the theme “From Personalised Learning to Mastery of Competencies: Impact of Technology and Simulation on Health Professionals”, IMEC 2018 explored the significance of technology in healthcare and healthcare education.

“It is clearly important for us as educators to examine how to leverage on technologies to deepen and enhance learning among health professional students and professionals,” said Prof Abdul Aziz Baba, Vice-Chancellor of IMU, in his welcoming message.

Held from 13-15 April, the conference featured more than 20 speakers from seven countries who shared their knowledge of the integration of TEL into various aspects of healthcare education such as clinical training, assessment, flexible learning, lesson delivery, inter-professional learning, mastery of competencies and so forth.

In classrooms around the world, the application of technology in lesson plans, courses and teaching methods is already occurring at a rapid pace. Benefits such as flexible and personalised learning, as well as comprehensive resources, are well known.

Additionally, for healthcare education providers, TEL offers the possibility of an unprecedented experiential component in hands-on learning for medical students and future healthcare professionals, for example through the practice of medical procedures on high-fidelity manikins and virtual simulations.

SIMULATIONS

The utilisation of simulation such as Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR) is a rising trend in mobile and video games, but the same technology could also be used to help patients.

In his workshop, “Learning through the Virtual Reality Continuum (Mixed Reality) in Healthcare Education”, Dr Arkendu Sen explained the versatility and practicality of 3D-digital modeling and VR, AR and MR technology in teaching and learning practices. These simulations create a safe and relatively risk-free space for medical and healthcare students to hone their skills and familiarise themselves with medical and clinical procedures before graduating to real-life applications.

Another IMEC event that highlighted the growing role of technology in healthcare was A/Prof Thiruselvi Subramaniam’s workshop entitled “Keep to Reality: Enhance Inter-Professional Learning Using Simulation”. The workshop offered participants a taste of technology-driven learning via demonstrations using high-fidelity manikins and scenarios that reflect real-life situations.

Innovative assessment is another potentially exciting aspect of TEL. Increasingly, universities across the globe are incorporating the use of smart phone apps in lessons. At IMEC 2018, participating teams of the first ever Global University Medical Challenge (GUMC) were

impressed with the use of Socrative, an assessment app that enables teachers to create quizzes, questions and other assessment tests for students in real time. For many, it was their first experience with such technology.

As in previous years, IMEC participants were also given the opportunity to check out the four innovations shortlisted for the prestigious IMU-Ron Harden Innovation in Medical Education (RHIME) Award. The innovations pertained to augmented and virtual reality tools; an app-based tool for dengue management; an affordable kidney phantom; and inquiry-based learning for millennials. First introduced at IMEC 2008, the IMU-RHIME Award honours Prof Ronald Harden,



Technology Enhanced Learning (TEL) took centre stage at the IMEC

who played a crucial role in the inception of IMU and is a globally recognised guru in medical education.

TECHNOLOGY IN PLACE OF A TEACHER?

Technology's impact on education is evident and as technology continues to advance rapidly, some wonder whether teachers will one day be replaced entirely. Prof Harden does not think so. "Looking ahead, there remains an important role for the teacher but this too is changing. Technology has an important part to play in the teacher's roles as an information provider, as a facilitator, as a curriculum planner, as an assessor, as a role model, as a manager and a leader, as a scholar and as a professional," he said in his keynote address at IMEC 2018.

Technology will support and complement, but not replace, human educators. Even if the technology for this existed, people may not wish to avail themselves of it if it involves too great a disconnect from the human experience.

It is possible, for example, for an entire global conference to take place virtually, and yet many people prefer to fly halfway across the world to converge at a single location. This is perhaps one of the reasons IMEC as

a platform for knowledge exchange continues to generate significant interest: at IMEC, participants get to fulfill their human need to interact in person.

Initiated in 2004 as the Medical Education Colloquium, IMEC is today one of the premier international events in health professions education. Previous IMEC conferences have addressed themes such as distributed

learning, quality assurance, innovation, assessment of competence, inter-professional education, work preparedness, integrating culture and values into health professions education, and health professions education without borders. IMU continues to invest in IMEC and the IMU-RHIME award as part of our commitment to support and enhance the standards of medical education regionally.

Technology will support and complement, but not replace, human educators. Even if the technology for this existed, people may not wish to avail themselves of it if it involves too great a disconnect from the human experience.



At the IMEC 2018

2018

Highlights

- Rollout of the first short course offered by the School of Dentistry, entitled “Demystifying Molar Endodontics”
- Organised 31 CPD events
- Organised the International Postgraduate Conference on Pharmaceutical Sciences (iPOPs)



In healthcare, there is no end to the learning process. To continue meeting the needs of patients in the long term, healthcare communities must constantly keep up with advances in their fields. As the continuing professional development (CPD) and training arm of IMU, the IMU Centre for Lifelong Learning (ICL) offers courses in research, medicine, dentistry, pharmacy and health sciences. We aim to support healthcare professionals’ personal and career growth through learning opportunities that develop their professional skills. We also offer courses for the general public.

At ICL, our overall focus for 2018 was on growing and expanding our range of innovative continuing professional development (CPD) programmes that meet the requirements of healthcare professionals and the community. With the ever increasing number of graduates joining the healthcare workforce each year, there is a growing demand for CPD among practitioners wishing to hone their skills and update their knowledge to better equip themselves to face the competition.

Throughout the year, ICL and the IMU Programme Development Unit worked with various schools and centres to identify market needs and develop relevant new short courses, in particular those with an assessment component to ensure participants were able to competently apply the new skills learned. We also worked to ensure the delivery mechanisms were sufficiently flexible and brought value to the learners.

One of the main highlights of 2018 was the rollout of the first short course offered by the School of Dentistry, entitled “Demystifying Molar Endodontics”. The course comprised two modules with four sessions of mentorship. The aim was to develop the skills of general dental practitioners and guide them in the provision of root canal treatment of molar teeth using the latest technology of rotary instrumentation and microscope.

Attendance was limited to ensure each candidate received sufficient attention and mentorship. Besides receiving close supervision during the hands-on sessions, participants were supported by a series of online as well as face-to-face sessions. Another aspect of the short course was participants’ submission of a completed case for assessment to confirm their ability to apply the knowledge and skills learned.

The course received positive feedback. In addition to its smooth and efficient organisation, participants highlighted the balanced mix of lectures, demos and hands-on sessions that combined to create a beneficial and effective learning environment.

Hands-on demonstrations



ICL: Growing numbers of external CPD participants

YEAR	EXTERNAL (% OF TOTAL PARTICIPANTS)	INTERNAL (% OF TOTAL PARTICIPANTS)
2016	57	43
2017	64	36
2018	79	21

Focus areas in 2018 included preparatory workshops for professional examinations, and the creation of bite-sized CPD short courses by subject matter experts, as well as advocating lifelong learning among working professionals and communities.

Besides dentistry, we also continued to tap the wealth of experience of IMU's pool of experts in other fields, with a view to addressing current issues and needs of the healthcare profession and industry. Focus areas in 2018 included preparatory workshops for professional examinations, and the creation of bite-sized CPD short courses by subject matter experts, as well as advocating lifelong learning among working professionals and communities.

We remained focused on improving quality and efficiency, and were gratified to see our efforts pay off this year. When asked to assess their overall learning experience, 85 percent of participants in our CPD programmes rated their experience "good" or better.

Another highlight of 2018 was the International Postgraduate Conference on Pharmaceutical Sciences or iPOPs. Since its inception in 2013, iPOPs has distinguished itself as a major forum where participants get the opportunity to keep abreast of the latest research trends in pharmaceutical sciences (see "School of Pharmacy").

Internally, we implemented strategies to create a sustainable, results-driven culture geared for success. We overcame resource challenges by centralising resource management, balancing tasks with interdepartmental staff, optimising resource utilisation in correlation to priorities, and ensuring portfolio planning was aligned with manpower skills and capacity.

MOVING FORWARD

We anticipate that the CPD landscape will remain a challenging one, with competition arising from the growing number of CPD providers in the industry as well as the ever-expanding range of learning modes made possible by technology. In the coming year we aim to increase the visibility of our ICL programmes and reach out to new target audiences. We hope to increase customer engagement by promoting our programmes via conventional and non-conventional ways including maximising the use of digital marketing channels.



CPD courses advocate lifelong learning among working professionals and communities

2018

Highlights

- Two programmes received IMU Full Self-Accreditation
- Two programmes obtained IMU Provisional Self-Accreditation
- IMU's risk-based Quality Management System was certified to ISO 9001:2015 standards

As a leading health education provider in Malaysia, we continuously strive to improve ourselves and offer the highest quality of education to our students. Each year, IMU undertakes a variety of check-and-balance exercises, renews accreditations and certifications, and engages with external partners to ensure that student satisfaction and the quality of programmes and curricula remain high and are benchmarked against global standards.

Since 2013, IMU has engaged i-graduate, which is an international organisation that tracks and benchmarks student and stakeholder opinions for universities and other institutions. i-graduate produces the i-Barometer Student Survey, a biennial survey that provides insight and information on student experiences from arrival to graduation at IMU, which allows for international and local benchmarking.

We have consistently implemented changes based on feedback received from this survey in order to boost student satisfaction, which has been steadily increasing. Based on the results of the 2017 survey (using a 4-likert scale instrument), IMU student satisfaction levels were much higher in the areas of arrival, teaching, learning and living in IMU compared to 2013 and 2015 (see page 83). Thus, our primary objective in 2018 was to achieve consistent growth and development in these areas.

In 2018, we also concentrated on strengthening the efficiency of programme management accreditation activities in compliance with the self-accreditation status accorded to us in 2017 by the Malaysian Qualifications Agency (MQA), which is an organisation under the Malaysian Ministry of Education. IMU made full use of this status and completed self-accreditation activities for four programmes in 2018, with two achieving full accreditation (i.e. the Postgraduate Diploma in Health Professions and Master of Pharmacy Practice) and two others achieving provisional accreditation (the Postgraduate Diploma in Endodontics and Postgraduate Diploma in Prosthodontics).

Also in 2018, we applied a more risk-based approach to quality management through the IMU Quality Management System, and we successfully revised our ISO 9001:2008 standards to meet the needs of ISO 9001:2015 certification.

STRENGTHENING SELF-ACCREDITATION ACTIVITIES

IMU is the first and (to date) only private medical university in Malaysia to be granted self-accreditation status by the MQA. We were accorded the status in 2017. Besides maintaining the status, IMU has gradually grown our pool of qualified programme accreditation assessors. Three percent of the IMU academic staff were qualified assessors in 2017. This

Quality Improvement in numbers



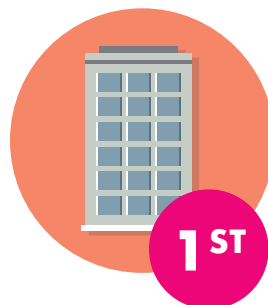
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PROGRAMMES
PROVISIONAL ACCREDITATION
VIA SELF-ACCREDITATION



4

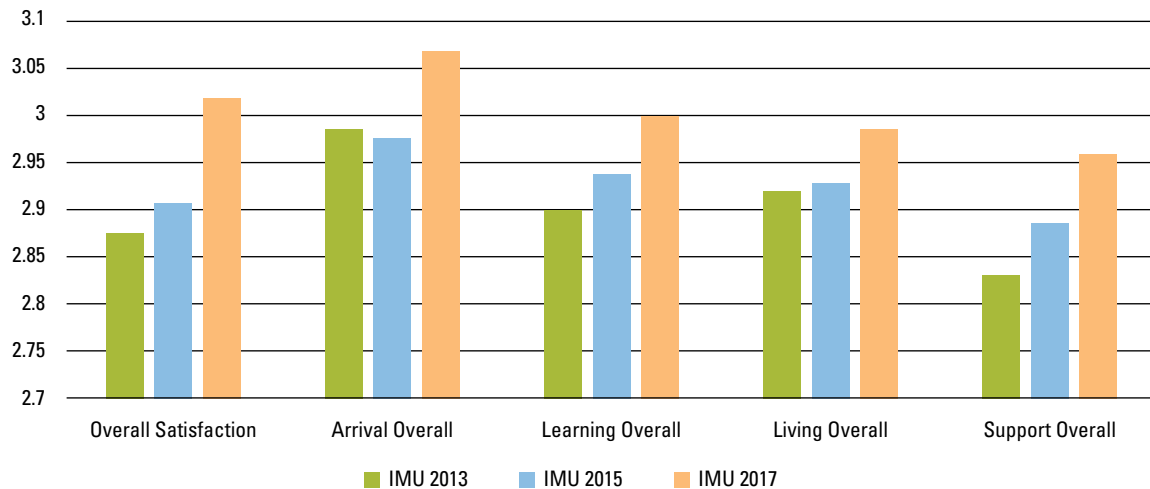
PROGRAMMES
FULL ACCREDITATION
VIA SELF-ACCREDITATION



1ST

PRIVATE UNIVERSITY
GRANTED SELF-ACCREDITATION
STATUS BY MQA

i-Barometer Student Survey Trend, 2013, 2015 and 2017



increased in 2018 to 12 percent and we are aiming to reach 20 percent by 2019.

Since April 2017, IMU has successfully completed self-accreditation activities for a total of 13 programmes (inclusive of the four that were completed in 2018) with four programmes achieving Full Accreditation and nine others achieving Provisional Accreditation. Each self-accreditation process consists of six key milestones—the appointment of a panel of assessors; submission of documentation to the panel; an accreditation visit or briefing to the panel; presentation of the panel's report; the Academic Quality Committee's decision; and the Senate's decision. Each part must be completed before a programme can be awarded accreditation.

MOVING FORWARD

In the coming year, IMU will focus on strengthening health and safety measures and ensuring that the University has a proper safety protocol in place. The IMU Safety and Health Committee was established in 2003 in accordance with the Malaysian Occupational Safety and Health Act 1994, and with the introduction of the

We have consistently implemented changes based on feedback received from the i-Barometer Student Survey in order to boost student satisfaction, which has been steadily increasing.

new ISO 45001:2018 Occupational Health and Safety Management System (OH&SMS) in 2019, the Committee intends to establish a comprehensive system that will:

- reduce, manage and identify potential health and safety concerns
- identify and monitor compliance with statutory and regulatory requirements
- employ a risk-based approach to the management of safety, health and occupational hazards

- conduct external and independent certification
- continue to develop the quality of occupational safety and health of IMU staff.

Lastly, our Research Laboratories have received ISO/IEC 17025:2005 Test Laboratory accreditation since 2014 and we are working towards incorporating a stronger risks-and-opportunities approach in compliance with the new requirements of ISO/IEC 17025:2017.

In the coming year, IMU will focus on strengthening health and safety measures and ensuring that the university has a proper safety protocol in place.

Panel of the Provisional Accreditation of the Postgraduate Diploma in Endodontics with Associate Professor Dr Zeti Adura Che, Deputy Dean of Undergraduate, Faculty of Dentistry, University Malaya as the chair of the panel (front row, 6th from left)



2018

Highlights

- Formation and inaugural meeting of the Industry Partnership Steering Committee
- Annual industry seminar to facilitate interaction of staff and students with industry leaders
- Development of a database on graduate employment statistics
- Launching of the Career Development Unit website



IMU is not merely about academic studies—we also strive to ensure that we mould our students to become productive members of society long after they leave our halls, clinics and labs. The Industry Partnership office maintains strong ties with leading industry players in order to open doors for our students and to help equip them with industry-relevant skills and knowledge. The Career Development Unit (CDU) on the other hand supports students in their career planning and development. Together, these initiatives bridge the gap between academic studies and professional practice.

For the past two years, IMU has worked to formalise student development platforms beginning with the establishment of the Career Development Unit (CDU) in 2017 and followed by the formation of the Industry Partnership Steering Committee in 2018. While we have always maintained a strong focus on both career development and industry linkages, formal infrastructure will help to streamline and enhance outcomes for our students when they graduate.

BEGINNINGS

The inaugural meeting of the Industry Partnership Steering Committee brought together key industry representatives to establish an effective and efficient system to promote engagement between IMU and the healthcare industry generally. Industry representatives included Azran Osman-Rani, CEO of Naluri Hidup Sdn Bhd; Hareef Muhammed, CEO of Pantai Premier Pathology; Nadiah Wan, CEO of Thomson Hospital Kota Damansara and Woon Tien Ern, Senior Consultant at Matrix Paradigm. The committee is led by IMU Vice-Chancellor Prof Abdul Aziz Baba.

This collaboration will enhance knowledge exchange and combine research infrastructure and expertise from both sides, which will in turn help create better opportunities for research and development, as well as support for commercialisation activities.

KEY INITIATIVES

In 2018 the CDU organised an industry seminar titled “Stay Connected with Industry Employers”, which brought together staff, students and industry leaders under the theme “Brand Yourself for Employability”. Topics discussed included personal branding, emotional intelligence and global graduate employability.

Other talks and workshops organised throughout the year included the “Master Your Curriculum Vitae” writing workshop for students, as well as talks on job opportunities with external stakeholders who provided valuable insights into current job opportunities.

The CDU has also established a database on graduate employment statistics to allow IMU to monitor its graduate employability rate. This will be an important indicator of IMU’s success in training students and will help us refine our future initiatives and strategic direction.

THE INDUSTRY PARTNERSHIP OFFICE

The Industry Partnership Office coordinates:

1

training and industrial pupillage for IMU undergraduate and postgraduate students

2

IMU staff consultancy for the industry

3

external quality control for the industry

4

collation of feedback from the industry to ensure that the IMU curriculum remains relevant

5

collaborative research opportunities with industry partners for product development and product improvement

It also provides encouragement and support for healthcare professionals seeking Continuing Professional Development (CPD) at IMU; opportunities for healthcare professionals to undertake part-time postgraduate studies on projects relevant to their fields; commercialisation support for IMU research findings; and support for IMU staff seeking to engage specific industry partners

Besides these efforts, the CDU also focused on developing its services, gaining more exposure and boosting online engagement with the IMU community and external stakeholders. Over the course of 2018, the unit created a strong brand presence and developed its own webpage, which was launched in August. "This unit was created to provide services to our students to help develop their readiness for the job market," said Prof Aziz at the launch.

MOVING FORWARD

The Industry Partnership Steering Committee meets quarterly to ensure that the unit remains on track to achieve its targets. We will continue to organise talks with leaders and

entrepreneurs, as well as strengthen ties with employers, recruitment agencies and the industry generally.

In 2019, we will focus on maximising the exposure of the CDU especially in boosting online engagement with the IMU community. The year ahead will be an exciting one for us as we further develop our internal and external resource databases.

The CDU also focused on developing its services, gaining more exposure and boosting online engagement with the IMU community and external stakeholders.



Nutrition and Dietetics Career Day 2018

2018

Highlights

- Developmental and preventive programmes to enhance the wellbeing of students
- Groundwork on the Student Portal project
- Increased alumni participation by 53 percent
- Mental Health Forum 2018
- First alumni community get-together outside of Malaysia, in Singapore

At IMU we believe that each student can achieve his or her full potential if given the right guidance and support. This belief has fuelled the commitment of the Student Services Hub (SSH) towards developing a holistic educational experience at IMU, focusing on 'out-of-classroom' learning. The Self Development Unit (SDU) which is part of SSH, works to help students gain mental and emotional strength and balance, which are crucially important for professionals in the healthcare industry. Alongside this, the Alumni Relations Office (ARO) develops and manages connections with former students, drawing on them as resources to support various areas and initiatives in IMU while also supporting their career development.

Throughout the year, the SDU continued to cater to the overall wellbeing of students through its activities with an emphasis on the developmental and preventive aspects of mental and emotional healthcare.

The SDU made an exciting addition to its range of activities with a new programme in expressive art therapy for self-management. This programme helps students discover themselves through art and sand-tray therapy as well as through counselling sessions. The SDU also collaborated with other departments such as the Library to organise fun ways to introduce students to self-help resources.

UNITED AGAINST BULLIES

In October, the SDU, IMU Peer Support Club and IMU Psychology Club organised the annual Mental Health Forum 2018 in conjunction with Mental Health Awareness Week. This year, the theme was "Take A Stand—United Against Bullying".

"Bystanders who merely observe from the sidelines may experience psychological struggles from witnessing someone being bullied," said IMU Psychology Lecturer and Programme Director Alexius Cheang in his presentation. "What bystanders don't realise is that simple actions like

recording such incidents as evidence or even trying to pacify the bully can go a long way towards reducing the chances of bullying recurring. We should empower bystanders to build the confidence to take a stand and become 'upstanders' instead."

ALUMNI ENGAGEMENT

Every year, the ARO looks for new ways to engage alumni and provide activities that are of value to them. In 2018, the ARO held five successful alumni gatherings both within Malaysia and abroad, which helped increase alumni participation by 53 percent compared to the previous year. The number of alumni actively following the IMU Alumni Facebook page has also increased by 75 percent since the ARO was established in 2016.

A strong alumni network strengthens the IMU community and their contributions and support over the years have been invaluable to the University. During this year's Singapore Alumni gathering, an alumnus from the pioneer cohort (ME1/93) Dr Goh Hsien Ming pledged to give RM30,000 to the Alumni Association Committee.

The ARO also organised 11 talks where 17 alumni from various partner schools, namely Barts and The London School of Medicine and Dentistry, the Universities of Manchester, Exeter, Aberdeen and Strathclyde, volunteered their time to share their experience and knowledge.

STUDENT ENGAGEMENT

Our Student Ambassador (SA) team initiated a total of 15 projects aimed at developing the IMU community. Working with the Student Representative Council (SRC) and IMU scholars, the team continued to play an important role in campus activities and events throughout the year.

The groundwork has also been put into place for the 'World without Plastic' initiative. The SRC together with the Eco-Friendly Club plan to launch the project in March 2019 and take the first step towards turning IMU into a plastic-free campus. The initiative is expected to drive IMU towards becoming a 'Green Campus'.



Talks by alumni

Also in 2018, 16 external companies ran various types of events at IMU. These companies were drawn from the cosmetics, food and beverage, stationery, book and app industries.

MOVING FORWARD

2019 promises to be an exciting year for the Student Services Hub. Two major online portals will be launched, namely the Student and the Alumni Portals, which will enhance the experience of students and alumni and serve as platforms to encourage engagement within the two communities. The SSH will also continue to enhance its services so that it can guide students to be independent and prepare them for entry into the job market.

A strong alumni network strengthens the IMU community and their contributions and support over the years have been invaluable to the University.



Aflame Student Award winner Mohd Firdaus Abdullah



IMU'S AFLAME STUDENT AWARD

Created in 2012, the annual Aflame Student Award honours a graduating student who has best embodied humane principles and practices while at the University. The individual is chosen based on his or her commitment to peer support—that is, a person who is a caring, compassionate and collaborative learner who provides positive reinforcement to peers. The recipient must also demonstrate a high level of community engagement and service. The recipient receives a cash prize of RM1,000 and the opportunity to nominate the beneficiary of a RM5,000 donation.

This year's award went to Pharmacy graduate Mohd Firdaus Abdullah for his dedication as a volunteer at various non-governmental organisations serving the deaf and disabled communities. He nominated Majudiri 'Y' Foundation for The Deaf as the recipient of the donation. "Deaf culture has always been rather misunderstood by the public, and deaf people in Malaysia are often discriminated against in the workplace and also in the education system," said Mohd Firdaus.

ALUMNI ACHIEVEMENTS

Programme and Name	Achievement
Biomedical Science Sean Wei Xiong Wen	Clarendon Fund & Oxford-Radcliffe Scholarship in conjunction with Weatherall Institute of Molecular Medicine (WIMM) Prize PhD Studentship.
Chinese Medicine Sng Kim Sia	China Government Scholarship (CGS) for Post Graduate Programme.
Chinese Medicine Wong Pui Mun	China Government Scholarship (CGS) for Post Graduate Programme.
Medicine Dhivya Dhyana Suppiah	Selected as one of the top three students for the IMU Humanitarian Award in 2018.
Medicine Gandhi Nathan Solayar	American Orthopaedic Society for Sports Medicine (AOSSM) Fellowship.
Medicine Shawn Yeo Shuen Kai Choi Xian Hung Chia Tee Hang	First Prize, Inter-Medical School Clinical Anatomy Competition.
Medical Biotechnology Andrew Octavian Sasmita	International Max Planck Research School Scholarship.
Nursing Chong Mei Sin	Inspiring Nurse Leader Award 2018 (Parkway Pantai Holdings—Pantai Hospital Cheras).
Pharmacy Nicholas Hing Yee Liang	Chevening Scholarship recipient.
Pharmacy Khor Wei Ping	Chevening Scholarship recipient.
Pharmacy Devi Shantini Rata Mohan	Chevening Scholarship recipient.
Pharmacy Mai Chun Wai	Pharmaceutical Federation (FIP) Foundation for Education and Research Travel Scholarship.
Pharmaceutical Chemistry Cheng Miaw Chin	Malaysian Institute of Chemistry (IKM) Graduate Chemistry Medal.
Psychology Immanuel Tan Zhen Miin	Represented Malaysia at WFUNA International Model UN Conference (WIMUN).

STUDENT AWARDS FROM ACADEMIC CONFERENCES AND COMPETITIONS

Name	Achievement
Dietetics with Nutrition Chong Jia Jun	First Prize, student case study oral presentation, 24 th Malaysian Dietitians' Association National Conference
Medicine Aravinthan Kadraavelo	Third place, National Medical Students Basic Surgical Skills Competition.
Medicine Bryan Chang Wei Lim	Winner, 2018 Dr Dorn Colbert Medal in Travel Medicine, National Essay Prize, Ireland. Essay title: "Leaving Light Footprints – the Importance of Promoting Responsible International Travel"
MSc in Medical and Health Sciences (by Research) Chan Chee Shan	2018 recipient of the Postgraduate Thesis Prize from the Nutrition Society of Malaysia (NSM). Thesis Title: "Metabolic Responses to Isomaltulose by Malaysian Chinese Adults: A Pilot Study".
MSc in Medical and Health Sciences (by Research) Wong Yi Hao	Best Oral Presentation, 20 th International Conference on Medical Bacteriology, Mycology and Parasitology. First Prize, Poster Presentation Competition, Malaysian Society of Parasitology and Tropical Medicine (MSPTM) Mid-Year Seminar.
Pharmacy Lee Khei Yan Yew Wing Yee Ng Yi Ling Lim Kar Ying Low Li Tian Esther Teo Yong Xuan	First place, 4 th National Clinical Pharmacy Challenge (NCPC) hosted by SEGi University in association with the Malaysian Pharmacy Students' Association.
Pharmacy Low Li Tian Esther Teo Yong Xuan Kishen Kunalan Yong Yu Jing Yew Wing Yee Lim Kar Ying Heng Li Lin How Chiu Her	Champion of Piala Aishah (compounding event). First and Second Runners-Up of Piala Tariq (Rx quiz), 10 th National Pharmacy Quiz, Universiti Kebangsaan Malaysia.
PhD, MSc in Medical and Health Sciences (by Research), Medical Sciences Lim Wei Meng Hii Ling Wei Tan Yuen Fen Wong Li Zhe Yee Zong Yang Tan Chia Howe	Cancer research presented at The World Cancer Congress (WCC) 2018, KLCC. The findings in their posters were accepted into the special edition of the <i>Journal of Global Oncology</i> . The titles of the presentations were: <ul style="list-style-type: none"> • Lim Wei Meng—<i>Identification of new molecular targets for the treatment of endometrial cancer.</i>

Name	Achievement
	<ul style="list-style-type: none"> • Hii Ling Wei—<i>Identification of inhibitors synergizing chemotherapeutic sensitivity in the breast cancer stem cells and non-stem breast cancer cells.</i> • Tan Yuen Fen—<i>Systemic delivery of siRNA-based therapeutics using single walled carbon nanotubes.</i> • Wong Li Zhe—<i>Targeting the tumour specific spliceosome through in silico virtual screening for discovery of new SF3B1 small molecule inhibitors.</i> • Yee Zong Yang—<i>p53 silencing and mammosphere formation in breast cancer cells harbouring p53 gain-of-mutations trigger epithelial-mesenchymal transition.</i>

STUDENT AWARDS FROM EXTRA-CURRICULAR ACTIVITIES

Name	Achievement
<p>Medicine Nur Nabila Nasharuddin Anushka Kulkarni</p> <p>Medical Biotechnology Chan Chin Chun</p>	<p>First place, Universiti Kebangsaan Malaysia MEDebate (Debate competition). Anushka Kulkarni also won the best speaker award.</p>
<p>Pharmacy Mohd Firdaus Abdullah</p>	<p>IMU Aflame Student Award 2018.</p>
<p>Pharmacy Nermesh Singh</p>	<p>Best Photo Presentation, Flicks Fiesta International Awards 2018</p>
<p>Pharmacy Tay Yuan Shen How Wei Jie Lee Jia Qing Yip Hong Yang Nermesh Singh Chan Jun Yi</p>	<p>IMU placed sixth among 15 participating universities at the National Pharmacy Sports Carnival with a total of five medals.</p> <p>Gold:</p> <ul style="list-style-type: none"> • Tay Yuan Shen, Badminton Men's Singles • How Wei Jie, Men's 100m freestyle swimming and Men's 100m breaststroke <p>Silver:</p> <ul style="list-style-type: none"> • Lee Jia Qing, Yip Hong Yang, How Wei Jie, Nermesh Singh, 4 X 50m freestyle swimming <p>Bronze:</p> <ul style="list-style-type: none"> • Chan Jun Yi, Women's 50m freestyle swimming

EMPLOYEE ENGAGEMENT AND DEVELOPMENT

2018

Highlights

- Departmental Teambuilding Away Days
- Successful completion of 2018 staff i-Barometer Survey
- 14 senior management staff sent for external leadership programmes
- Sponsored four faculty members in Health Professions Education
- Sponsored three clinicians pursuing sub-specialty training

The strength of IMU lies in its people and we believe that the University plays a key role in providing a conducive environment in which employees can grow professionally. The Human Resources Department (HR) helps to implement this mandate and endeavours to develop not just individuals but a community within the University where employees can share experiences, find support and grow together.

CREATING BETTER TEAMS

To foster team spirit and give staff an avenue to engage with department heads, the departmental Teambuilding Away Days were held for individual schools and support departments. The initiative provides a safe space for staff to express themselves constructively and learn to be productive team players. It also gives teams the opportunity to align themselves with departmental key result areas and visions. The programme had a 90 percent participation rate.

Also in line with our goal to build up the IMU community, we organised the third IMU staff trip, to Bangkok, Thailand, in September and October. The 138 staff enjoyed group activities and forged a renewed sense of belonging and camaraderie.

HR DEVELOPMENT

The Department has also continued to focus on grooming future leaders of IMU. This year, we selected 14 senior management staff to attend external leadership programmes locally and abroad. These included prestigious programmes such as the Melbourne Business School's Leading for Strategic Success, Harvard-Macy Institute's Programme for Leading Innovations in Healthcare and Education, Singapore

Management University's Excel Leadership Programme, iCLIF's Leading Leaders Programme and BFM-Edge's Emerging Leaders Programme.

Besides sponsoring the studies of four faculty members in Health Professions Education (one Masters, one Diploma and two Certificates), we also sponsored three clinicians who are pursuing sub-specialty training.

HEALTH IS WEALTH

At IMU, health is of the utmost importance and we have organised two intakes of the IMU HEAL Programme (Healthy Eating Active Living) in April and July. The programme gave 31 staff the opportunity to learn how to achieve better health through healthy eating and regular physical activity.

IMU also partnered with booking app BookDoc in the app's Activ programme, where individuals can track their physical activity. Activity goals were then used to claim gifts from BookDoc's list of reward partners. More than 222 staff signed up as members on the app.

Our Wellness Ambassadors also took the initiative to organise a Biggest

Losser competition, a Walkaholic challenge, an Eye Wellness Day and a Hiking Day at Gunung Angsi, among other activities.

EMPLOYEE ENGAGEMENT

The 2018 Staff i-Barometer was successfully completed with an 85 percent participation rate from IMU employees. The survey compiles feedback from staff on various aspects of working at IMU. The results show that IMU's overall staff engagement rate is at an 87 percent high. Overall results were commendable with high ratings in the various categories.

Every year, regular Town-Hall meetings provide a platform for top management to engage with employees. At these sessions, the Vice-Chancellor updates employees on achievements and current initiatives as well as the University's business direction for the coming year. Employees are also provided opportunities to give feedback to management and pose relevant questions. This year, two town-hall sessions were held.

Besides this, staff also enjoyed the festivals held to mark major



The IMU HEAL programme gave staff and families the opportunity to learn healthy eating habits

Teambuilding Away Days give teams the opportunity to align themselves with departmental key result areas and visions. The programme had a 90 percent participation rate and has strengthened teams across the campus.

Malaysian celebrations such as Chinese New Year, Hari Raya, Diwali as well as Christmas. Other employee engagement initiatives included staff movie nights, a bowling tournament and a fruit festival.

MOVING FORWARD

In 2019, HR will continue to strengthen our talent pool with developmental programmes for our staff. We will work closely with internal training departments such as the Centre for Lifelong Learning (ICL), the Centre for Education (ICE) and the Institute for Research, Development and Innovation (IRDI) to ensure that initiatives remain relevant and effective.

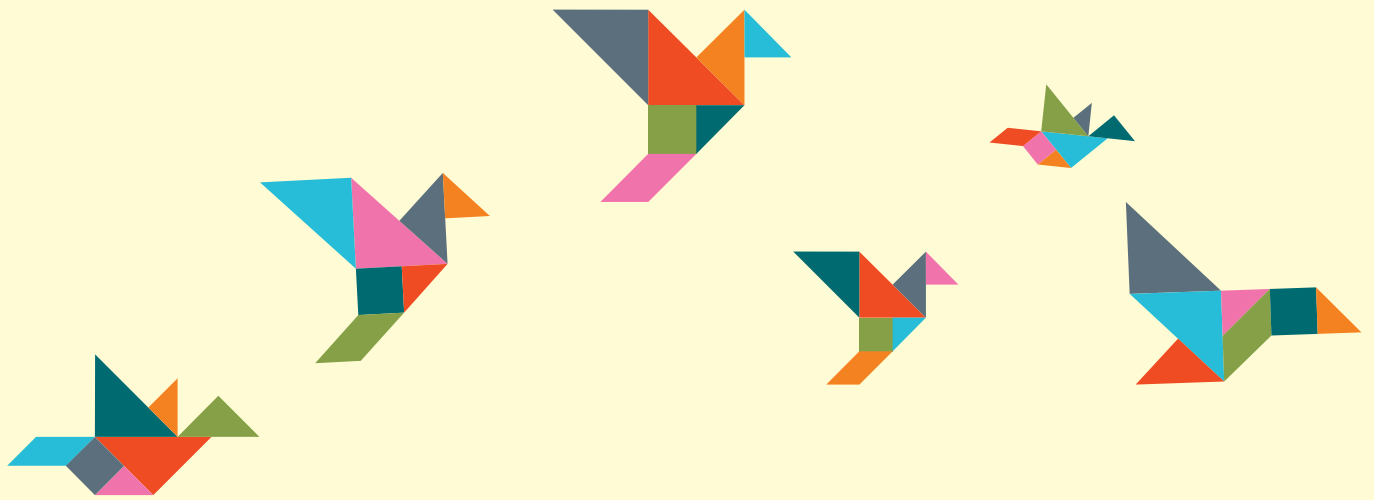
As with 2019, we will continue to find different ways to engage and strengthen teams as well as to instil a sense of team spirit within each department. We aspire to remain an employer of choice and hope that our workplace is one that is professionally stimulating and inspiring.

Health awareness will remain central to our activities and we hope to collaborate with more partners including the Ministry of Health to help keep our staff healthy and productive.

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Staff celebrating Chinese New Year



HEALTHCARE

2018

Highlights

- Expanded and enhanced the range of services at the Medical Clinic, Bukit Jalil by
 - Offering gastroenterology, dermatology and orthopaedic services
 - Adding four new paediatricians, one new gynaecologist and two mental health practitioners to the Paediatrics, Obstetrics & Gynaecology and Mental Health services respectively
- Strengthened the Chiropractic and Chinese Medicine services through the addition of practitioners with specialised skills
- Started work on IMU Hospital Phase 1
- Created more teaching bays and practice rooms for the Chiropractic and Chinese Medicine programmes

Established in 2010, IMU Healthcare (IMUH) brings together the disciplines of allopathic and complementary & alternative medicine (CAM). IMUH clinics and centres provide a wide range of outpatient healthcare services including medical, dental and chiropractic services as well as Chinese medicine. We are committed to helping patients attain optimal health whether through the provision of basic primary healthcare or through advanced specialties and sub-specialties. While providing our patients with quality care, our clinics and centres also play a key role in developing IMU students' clinical skills.

The IMUH medical clinic is the first private outpatient centre in Malaysia to be accredited by the Malaysian Society of Quality in Health (MSQH). This took place in 2011 and we have successfully maintained this accreditation since then. IMUH began by providing only dental services but in the years that have followed, we have grown to provide outpatient services in general and specialist medicine, as well as in CAM. The success of our centre in Bukit Jalil has led to the establishment of a satellite Chiropractic centre in Puchong and a Dialysis Centre in

Sri Petaling. We are currently building a hospital that will enable us to provide inpatient services in 2021.

GROWTH AND EXPANSION

We earmarked 2018 for growth and we were able to expand the range of services on offer at our clinics/centre in Bukit Jalil. We launched gastroenterology, dermatology and orthopaedic services in our Medical Clinic; and introduced additional talents to our Paediatrics, Mental Health, Gynaecology as well as CAM teams. Another small but important move was to extend our operating hours on Saturdays from 9am-1pm to 9am-5pm. This will help us to serve more patients and increase access for our clients.

SUPPORTING ACADEMIC PROGRAMMES

Besides ensuring that patients received the best treatment possible, one of the main goals for IMUH in 2018 was to support the growth of academic programmes, particularly the Chiropractic and Chinese Medicine programmes. The newly established Centre for Complementary and Alternative Medicine spurred the growth of student numbers in these areas, leading to a need for more teaching facilities.

In view of this, we renovated our CAM centres to increase the number of teaching bays for the Chiropractic programme as well as practice rooms for the Chinese Medicine programme.

IMUH ORAL HEALTH CENTRE

Our Oral Health Centre (OHC) remains dedicated to providing dental health services to the community. The Centre, which can handle up to 150 patients a day, continued to see high demand in 2018. We are also proud that the OHC is now a provider of Invisalign clear aligners— a transparent, plastic form of dental braces used to adjust teeth. For those seeking to correct dental problems, clear aligners are a more comfortable and convenient option compared to conventional



Signing Ceremony between IMU Education and Pembinaan Mitrajaya

metal braces. The OHC was proud to be elevated to the status of Invisalign Silver Tier provider in less than two months. This status is accorded to those who show commitment to intensive training while delivering consistent results.

The OHC was also accorded special mention in its first poster presentation at the IHH Quality Summit 2018 under the theme “Partnerships that Fly: Building a Legacy”. The summit is an annual convention that gathers IHH Healthcare Bhd employees to renew their commitment to quality. IMU is a wholly-owned subsidiary of IHH Healthcare, which is one of the largest integrated healthcare providers in Asia.

COMMUNITY ENGAGEMENT

IMUH continued to play a role in the community with complimentary health talks and health screenings for corporations and the public. Topics covered included the role of nutrition and dietetics in children’s health and mental health in the workplace. We continue to foster community engagement through participating in many local exhibitions. IMUH made its first foray into regional exhibitions by participating in a Malaysia Healthcare Pavilion in Indonesia organised by the Malaysian Healthcare Tourism Council.

We engaged with the media, namely with *The Star* and BFM to help build awareness of the importance of paediatric health and early dental care for children. In support of World Kidney Day, IMUH organised a Media Roundtable, which covered topics in the areas of nephrology, endocrinology, rheumatology, nutrition and dietetics, and mental health to highlight the importance of comprehensive care.

THE IMU HOSPITAL

The IMU Hospital remains a key project under IMU Healthcare. The hospital is being built on land adjacent to IMU, and we are happy to report that building works on the hospital’s Phase 1 began in October. This phase consists of a block that will house 96 inpatient beds with three operating theatres, an emergency room, 22 specialist clinics and two wellness clinics. Construction of Phase 1 will be completed by the end of 2020, and we expect the hospital to be operational in 2021. Pembinaan Mitrajaya Sdn Bhd, the contractor appointed by IMU, will also oversee the construction of a multi-storey carpark.

In 2018, IMUH continued to play a role in the community with complimentary health talks and health screenings for corporations and the public.

Dr Chong Su Lin, CEO of IMU Healthcare, said that the RM150mil hospital would further enhance existing healthcare services that the residents of Bukit Jalil and its surrounding neighbourhoods have enjoyed since 2010. This will be the first private hospital in the Bukit Jalil area, and it promises affordable and high-quality patient-centric medical services. The KL Sports City is located nearby and it is expected that the hospital will support the sports fraternity as well.

The IMU Hospital will be the first private hospital in the Bukit Jalil area, and it promises affordable and high-quality patient-centric medical services. The KL Sports City is located nearby and it is expected that the hospital will support the sports fraternity as well.

TIMELINE OF SITE WORKS*



* as of 30 November 2018



IMU Vice-Chancellor Prof Abdul Aziz Baba says that “the Hospital will be staffed by IMU clinicians, focused on patient-centred and team-based care. The IMU Hospital forms the inpatient hub of the IMU Academic Health ecosystem to complement the existing university as well as outpatient-based healthcare services. The Academic Health System combines and integrates clinical practice with education and research for the betterment of health and wellbeing of the community.”

MOVING FORWARD

With community at its core and care as its motto, IMUH will continue to put patients first. “IMUH is focused on continuous patient care, reinforced by our core values of integrity, teamwork, respect and compassion, all of which are reflected in our medical and healthcare programmes and services to the community,” said Prof Aziz.

This philosophy will guide the healthcare team in all its activities and initiatives in 2019.

Model of the IMU Hospital



SHAPING UP FOR THE FUTURE

Prof Abdul Aziz Baba, Vice-Chancellor of IMU on the future of hospitals, the IMU Academic Health Centre and what the nation must do in education and healthcare.

The IMU Hospital is slated to open in 2021. Will the role of hospitals remain unchanged?

The IMU Hospital will be a crucial component of the Academic Health Centre. It will serve as the hub for our network of clinics. At the same time, we foresee a future in which hospitals as an institution will no longer be places where the bulk of healthcare is delivered. In 10 to 15 years' time, as much as 80 to 90 percent of healthcare may be delivered outside hospitals.

In this scenario, the clinics will play the principal role within communities. A patient may go from a clinic to a hospital for acute care. He or she may then go back to the community for continuing and chronic care. Increasingly, healthcare will also extend to the home environment, with patients being managed at home.

In this decentralised scenario, what is needed to hold things together?

Technology and data will play a crucial role in the interaction between the hospitals, the clinics in the community, and the patients and caregivers at home. Even more important is the ability of healthcare practitioners across the spectrum to work collaboratively as a team.

Which of the following will the IMU Academic Health Centre require most—educators, clinicians or researchers?

We will need people who can transcend these boundaries—multi-skilled, but more importantly, able to generate synergy and extract the insights visible to those in a multidisciplinary space. We do not foresee having a place for pure educators, pure

clinicians or pure researchers. Everyone will have to have some combination of these three roles that is suited to individual strengths.

Who benefits from this approach?

At the end of the day, it is about how we can best serve patients—whether directly at our hospital and clinics, or indirectly through the quality of our graduates and research. There is plenty of evidence to show that where there is a strong education ethos in a hospital, patient outcomes are improved. Similarly, the level of scholarship in a university is elevated when faculty members engage in clinical practice or research.

Will the focus of healthcare change in the future?

It is constantly evolving. It used to be focused on treating patients, but we have moved beyond treatment. Now it's about preventive measures and promoting wellness. In this regard, we at IMU believe that we must also go beyond our immediate context and build bridges with government to help shape policies for a healthier Malaysia.

From Partner Medical Schools to industry tie-ups in research—what makes a good partnership?

It goes without saying that partners should know each other well. Besides that, I would say the following are essential: a clear vision of what you want to do, expectations that converge, an agreed upon plan of action, and the will to support the initiative with the right resources.

In education and health, what can the nation do?

On the education side, we need to embrace lifelong learning—this is not just a nice idea, it is a matter of survival in a competitive global environment.

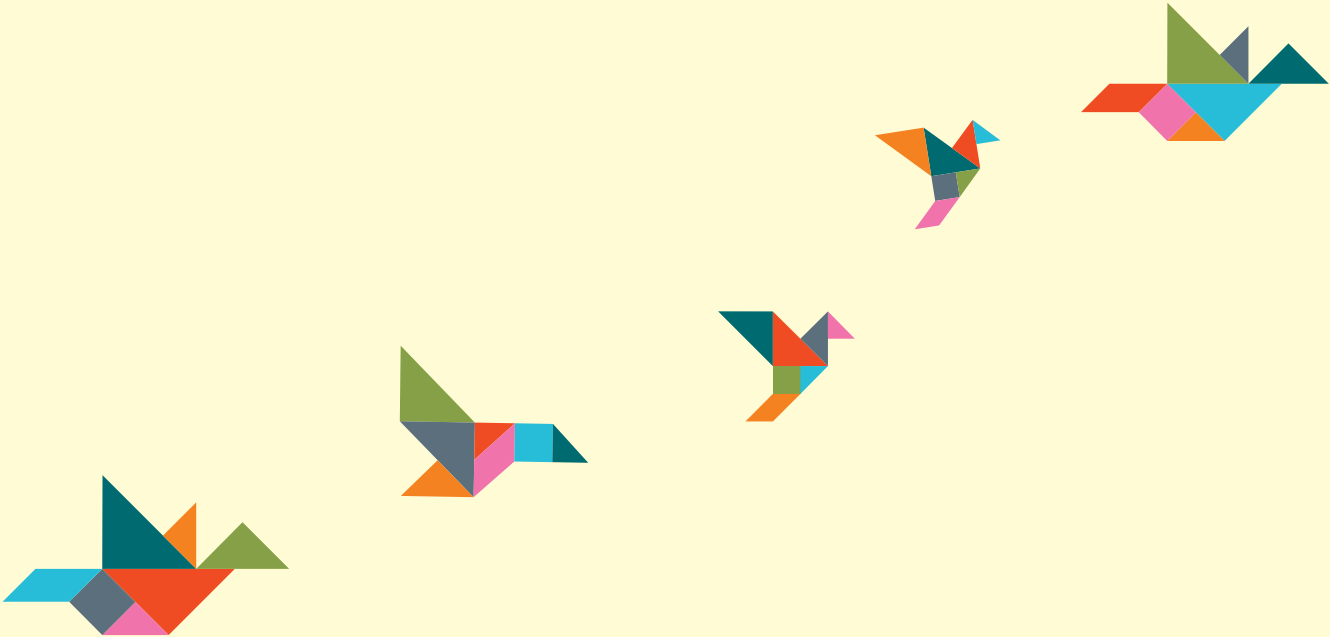
We need to look at the continuum, and ensure that at every level we are preparing students to adapt to the kinds of changes that are happening out there. We also need to look at the social standing of teachers. How do we value our teachers? We must ensure they are adequately respected, supported and rewarded.

On the health side, we need a sense of urgency about matters such as managing non-communicable diseases and the nation's escalating healthcare bill. The general public must play their part where lifestyle choices are concerned.

Now it's about preventive measures and promoting wellness. In this regard, we at IMU believe that we must also go beyond our immediate context and build bridges with government to help shape policies for a healthier Malaysia.



RESEARCH



2018

Highlights

- Three research priorities established (diabetes and obesity; pancreatic cancer; and infectious diseases)
- Total research funding increased by 35 percent to more than RM3.2 million
- Research funding from external sources increased by 137 percent (compared to 2017) to more than RM1.34 million
- A total of 256 original and review articles published, with more than 82 percent in Tier 1 and Tier 2 journals
- Enhanced research capacity with three new strategic alliances (with the National Institutes of Health, the University of Southampton and Fusionex AI Laboratory)
- Established two new Core Facilities (Biostatistics Core Facility and Microbial Repository Core Facility)

A sustained commitment to research is essential if IMU is to remain a leader in education and healthcare. The Institute for Research, Development and Innovation (IRDI), which leads research at IMU, comprises five centres with their own focus areas: bioactive molecules and drug delivery; cancer and stem cell research; environmental and population health; translational research; and health professions education research. The emphasis is on cross-disciplinary thematic research that leverages on the collective expertise of the IMU research community. Also emphasised are partnerships with government, industry and academia.

Structure and strategy were the focus of some of our most important endeavours in 2018. A key initiative was the organisational restructuring of IRDI, resulting in a more streamlined institute consisting of two main divisions: research and development; and commercialisation and support. Guided by our commitment to producing research that is relevant, we also identified three priority areas moving forward: diabetes and obesity; pancreatic cancer; and

infectious diseases (dengue, multidrug resistant organisms, tuberculosis and leptospirosis).

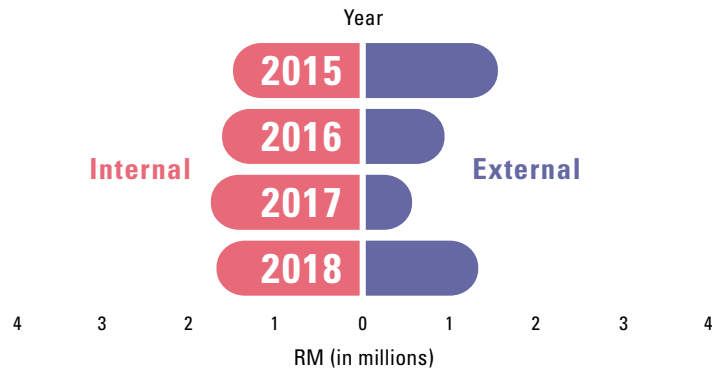
Accelerating research in these areas is in fact one of five strategic initiatives under the new IRDI Strategic and Action Plan (2018-2023), along with: increasing research funding and productivity; attracting and retaining the best brains; increasing commercialisation activity; and improving business processes and ensuring compliance.

SUPPORTING RESEARCHERS, ADVANCING RESEARCH

Among the initiatives we undertook to accelerate research in 2018 was the launch of the IMU Innovation Challenge Grant, a programme offering grants for integrated, multi-project research. Each project is eligible for support of up to RM50,000, and must contribute or be directly related to the common theme of the total research effort, thus forming a system of research activities and projects directed toward achieving the programme goal.

In 2018 we also organised two public health policy roundtable discussions. The first, co-hosted with the Malaysian Society of Public Health Physicians, focused on the use of regulation and taxation to control sugar sweetened beverages. The second roundtable addressed next steps in the inclusion of Pneumococcal Conjugate Vaccine (PCV) in Malaysia’s national immunisation programme.

Total research funding secured, 2015 – 2018



Research publications in IMU, 2015 – 2018

YEAR	NO. OF SCOPUS-INDEXED PUBLICATIONS	% OF PUBLICATIONS IN TIER 1 & 2 JOURNALS
2015	202	67.82
2016	237	69.20
2017	250	73.60
2018	256	82.35

Revenue from testing and analytical services, 2014 – 2018

YEAR	REVENUE (RM)
2014	76,489
2015	56,960
2016	71,883
2017	20,046
2018	63,144

Other events during the year included the IMU-University of Strathclyde Dengue Modelling and Epidemiology Research Workshop, and a seminar on the “Relevance and Importance of Tropical Medicine”. The latter, organised in collaboration with the Malaysian Society of Parasitology and Tropical Medicine (MSPTM), was in honour of Prof Mak Joon Wah and his outstanding contributions to the field.

IRD I also launched the Translational Research Seminar Series to foster talent, excellence and creativity in research. The series is sponsored by leading biotechnology companies and academia. The eight seminars organised in collaboration with various Schools were attended by more than 1,000 IMU staff, students and collaborators.

At IRDI’s Core Facilities, IMU researchers and their collaborators can avail themselves of state-of-the-art technology and consultancy at an affordable cost. We now offer five Core Facilities, having added two new Core Facilities in 2018: the Biostatistics Core Facility and the Microbial Repository Core Facility.

Throughout the year we also continued to support the development of new skills among IMU researchers. A total of 15 workshops were organised, and more than 400 professionals were trained.

STRATEGIC PARTNERSHIPS

Our three strategic partnerships established in 2018 were significant milestones in the year. The first, a Memorandum of Understanding (MoU) signed with the National Institutes of Health (NIH), will enable us to deepen our cooperation with NIH on health research and medical education. NIH is a network of six research institutions under the Ministry of Health.

The second, the IMU-University of Southampton (UoS) Advanced Microbiology & Infectious Diseases Laboratory, will foster cross-disciplinary research on infectious diseases. The aim is to capture the full potential for synergy at the interface of microbial genomics, ecology and functional genetics to address major challenges in infectious diseases in developing countries.

The third collaboration, the IMU-Fusionex MoU, will enable both parties to jointly develop research and training focused on innovation in data science and big data analytics, evidence-based decision making, and education and healthcare services.

FUNDING

In 2018, the total amount of external funding that IRDI received increased to RM1.34 million from RM0.49 million in 2017 (see page 107). Eleven new projects were supported by external grants from the Ministry of Education (MoE) under the Fundamental Research Grant Scheme (FRGS), the World Health Organization (WHO), the Wellcome Trust MRC Newton Fund and the Yayasan Penyelidikan Antartika Sultan Mizan (YPASM) Research Grant. Meanwhile, internal funding from the University totalling RM1.84 million went to supporting faculty, postgraduate and undergraduate research.

RESEARCH PUBLICATIONS

While the total number of Scopus-indexed publications remained largely unchanged from 250 in 2017 to 256 publications in 2018 (see page 107), the quality of publications improved significantly. This is reflected in the

Participants at the IMU-University of Strathclyde Dengue Modelling and Epidemiology Research Workshop



percentage of articles published in Tier 1 and Tier 2 journals, which rose from 73.6 percent in 2017 to 82.35 percent in 2018.

COMMERCIALISATION AND SUPPORT

In 2018, IRDI's Commercialisation and Support arm continued to provide technical support to the IMU research community. The Research Lab provided testing and analytical services, with income generated for the year amounting to RM63,144 [infograph 3].

The Research Lab also:

- developed six training videos to ensure proper and safe handling of laboratory equipment.
- reorganised the various Microbiology Labs as a centralised facility to strengthen biosafety procedures and achieve optimum usage of facilities (the new lab will also serve as the IMU-UoS Joint Laboratory for Infectious Diseases Research).
- developed two new tests (to be commercialised) for ICPMS detection of heavy metals in cosmetics and herbal compounds.
- organised a continuing professional development (CPD) course on "Technical Seminar and Workshop on Principles of Biosafety & Helpful Hints for Better Aseptic Techniques in Cell Culture" to promote biosafety among staff and students.

ACADEMIC ACHIEVEMENTS AND AWARDS

As with previous years, IRDI researchers in 2018 were recognised for outstanding work in their respective fields.

Prof Leong Chee-Onn was among the 2018 recipients of the prestigious Top Research Scientists Malaysia (TRSM) Awards, which recognise recipients' accomplishments as role models of excellence, mentors to the next generation and leaders of the nation's science, technology and innovation agenda. He was also elected as Fellow of the Royal Society of Biology (UK) for his contribution to the advancement of the biological sciences, and as Active Member of the American Association for Cancer Research (AACR) for substantial contributions to cancer research.

Dr Mai Chun Wai was awarded the International Pharmaceutical Federation (FIP) Congress Travel Scholarship to attend the FIP Congress in Glasgow. He was also awarded the Asian Young Pharmacists Group (AYPG) Professional Excellence Award. Dr Mai was elected as the FIP Young Pharmacists Group Board of Pharmaceutical Sciences, Vice President of AYPG, Chairperson of the Malaysian Pharmaceutical Society Young Pharmacists Chapter, Council Member of the Malaysian Academy

of Pharmacy as well as of the Malaysian Pharmaceutical Society, and Affiliate Member of the Young Scientist Network, Academy of Science Malaysia (YSN-ASM).

Dr Felicia Chung Fei Lei was awarded the IARC International Fellowship at the International Agency for Research on Cancer (IARC), Lyon, France. Dr Kenny Voon Kah Leong was elected as Affiliate Member of the YSN-ASM. Ms Tan Si Hoey, MSc candidate, was offered the RIKEN International Internship at the RIKEN Centre for Developmental Biology, Japan.

MOVING FORWARD

As we enter the second year of the IRDI Strategic and Action Plan in 2019, we expect to face familiar challenges, notably in terms of funding. Nevertheless, we remain confident that our strategic plan will enable us to weather the funding climate and remain highly competitive. We will continue to seek strategic collaborations with existing and new partners to ensure the IMU research community remains at the forefront of groundbreaking research that yields real solutions for the world.

CENTRE FOR BIOACTIVE MOLECULES AND DRUG DELIVERY

In 2018, the Centre for Bioactive Molecules and Drug Delivery (CBMDD) continued to focus on becoming a centre of excellence for research in drug discovery and drug delivery in the areas of metabolic disorders and infectious diseases.

Contract research projects were the year's highlight, with CBMDD securing contract research work amounting to RM400,000 in 2018. This included a project worth RM300,000 from Hyperwave Sdn Bhd for research on porcupine bezoar. In 2018 CBMDD also received FRGS grants.

Our researchers successfully developed an analytical (ICP-MS) method for analysis of Class I metals in herbal products and cosmetics, and we aim to offer this service commercially in 2019. Throughout the year we also initiated collaborations to kickstart research in tuberculosis, which has been identified as a focus area at IRDI.

The collaborations were with:

- Wellcome Centre for Anti-infectives Research, University of Dundee, Scotland—for technology transfer in DMPK studies and assay development for important proteins in *M. tuberculosis*

- Infectious Diseases Research Institute, Washington, USA—for testing the antitubercular activity of test substances
- National Institute of Allergy and Infectious Diseases, Rockville, USA—for testing the antitubercular activity of test substances
- NGH institute of Dental Sciences and Research Center, Belgaum, India—for testing the antitubercular activity of test substances
- National Institute of Immunology, New Delhi, India—for testing the antitubercular activity of compounds
- Drug Delivery System Excellence Center, Prince of Songkla University, Thailand—for developing inhaler formulations
- Integrative Pharmacogenomics Institute (iPHARM), UiTM, Malaysia—for developing inhaler formulations and LC-MS/MS analysis of test substances

CENTRE FOR CANCER AND STEM CELL RESEARCH

At the Centre for Cancer and Stem Cell Research (CSCR), work on cancer and stem cells is guided by four principles: (1) strengthening research quality and clinical impacts; (2) empowering the researchers to conduct impactful research; (3) building the research capacity to support cancer and stem cell research; and (4) improving collaboration and interdisciplinary interaction through organisational strategies.

In 2018 CSCR established a research framework focusing on pancreatic cancer research. Researchers worked on advancing knowledge across a dynamic continuum of discovery, development, and delivery, with the ultimate aim of reducing the burden and eliminating the adverse outcomes of pancreatic cancer.

CSCR researchers submitted more than RM2.2 million research grant proposals in 2018 to various national and international grant calls. Dr Ho Ket Li secured RM180,000 for an FRGS project entitled "The Influence of Pancreatic Ductal Adenocarcinoma (PDA) Cells and Pancreatic Stellate Cells (PSC)

on Myeloid Derived Suppressor Cells (MDSC) Immunosuppressive Properties". Dr Chan Kok Keong secured RM91,000 for his research project entitled "Deconvoluting the Molecular Mechanisms of Kinase Inhibitor Induced Cardiotoxicity". A/Prof Cho Min Naing secured RM207,900 from FRGS for a project entitled "The Role of Cytokines and the Gene-Gene Interaction in Helicobacter pylori Infected Gastric Cancer: A Hospital Based Case-Control Study".

In 2018, we strengthened our collaborations with Universiti Malaya, Universiti Kebangsaan Malaysia, Universiti Putra Malaysia and Multimedia University as well as the Institute for Medical Research (IMR), Malaysian Palm Oil Board (MPOB), Malaysian Genomics Resource Centre (MGRC) and Clinipath Sdn Bhd. We also expanded our international collaborations with researchers from UK-based universities such as Cambridge, Strathclyde, Leeds and Huddersfield; the University of Zaragoza (Spain); and Shanghai University of Traditional Chinese Medicine and Jiangxi University of Traditional Chinese Medicine (China).

CSCR Founding Head Prof Leong Chee Onn and CSCR Head Dr Mai Chun Wai both received recognition in 2018 for their achievements. CSCR researchers published 40 papers in ISI peer-reviewed publications (based on the Scopus database) with a total impact factor of 177.07.

CENTRE FOR ENVIRONMENTAL AND POPULATION HEALTH

In 2018, the Centre for Environmental and Population Health (CoEPH) laid the groundwork for an upcoming programme focusing on indoor air quality at primary healthcare settings (i.e. community clinics) at various locations in Malaysia. The aims are to:

1. investigate the temporal changes of indoor air quality indicators associated with the number of patients at clinics in rural, suburban and urban allocations
2. quantify and identify various indoor air pollutants
3. postulate the potential risk of transmission and exposure to a particular disease from one patient to another using disease transmission modelling

- 4. recommend appropriate interventions in identifying and regulating potential indoor air pollutants and ensuring patient safety.

To this end, CoEPH together with Datuk Lokman Hakim Sulaiman initiated discussions with the Engineering Services Division of the Ministry of Health. There is currently no indoor air quality (IAQ) index for public hospitals in Malaysia, while private hospitals follow guidelines by the Department of Occupational Safety and Health (DOSH) and the National Institute of Occupational Safety and Health (NIOSH). One study conducted in 2009-2010 investigated the IAQ of hospital wards. Possible next steps

include investigating the operating theatre (OT) and post-OT outcomes, comparing current-year IAQ with year 2009-2010 for the same hospital/ward, and comparing IAQ at inpatient wards and outpatient clinics.

CoEPH also initiated a meeting with the Department of Veterinary Services for potential collaboration and joint-supervision under the One Health approach, especially with regard to zoonotic disease transmission. A visit was made to the Veterinary Research Institute in Ipoh, Perak to discuss potential areas of collaboration.

CENTRE FOR TRANSLATIONAL RESEARCH

For 2018 the Centre for Translational Research (CTR) identified two major research focus areas: diabetes and infectious disease.

A research framework for Type 2 Diabetic Mellitus was established, targeting various aspects of disease prevention, diagnosis and treatment. With regard to diabetes-related research papers, 16 Scopus-indexed journal papers were published. We were also awarded one FRGS grant.

To further promote research interest and as an enabler to motivate IMU researchers in diabetic research, a grant for diabetes was called under the IMU Innovation Challenge Grant. A total of two projects were selected and awarded RM50,000 each.



Workshops bring together relevant parties to share knowledge and encourage future collaborations

CTR also embarked on discussions on a possible research collaboration with Komuniti Sihat Perkasa Negara (KOSPEN), a community-based NCD early intervention programme from the Ministry of Health. A field trip was organised to visit the KOSPEN site at Kampung Sungai Panchor, Negeri Sembilan.

With regard to infectious diseases, a key initiative in 2018 was the IMU-University of Southampton (UoS) Advanced Microbiology & Infectious Diseases Laboratory. The lab was conceived to conduct world-class research, particularly in respiratory tract infection, and to provide training in advanced microbiological techniques.

Also in 2018, the Centre offered, for the first time, an antibiotic testing service for Pharmaniaga.

For 2019, CTR will be more active in applying for international research grants. With the establishment of the IMU-UoS laboratory, we expect that projects related to infectious diseases will increase. Together with UoS, CTR will organise training workshops in the area of bacterial isolation, genome sequencing and bioinformatics.

For the Centre for Health Professions Education Research (CHPER), see IMU Centre for Education, page 76.



Signing of MoU between IMU and the National Institutes of Health (NIH)

We will continue to seek strategic collaborations with existing and new partners to ensure the IMU research community remains at the forefront of groundbreaking research that yields real solutions for the world.



THE ULTIMATE PUZZLE-SOLVING ACTIVITY

Looking for a university that best matches your needs? Choosing between two attractive job offers? Shopping around for a house? In any major undertaking in life, the first step is as obvious as it is critical: **do your research.**

For an individual, research is a handy skill. For IMU, it is a defining characteristic, a core aspect of its identity alongside education and healthcare. Research has always been a priority, but it will now play an even greater role as the IMU community evolves into the IMU Academic Health Centre.

Those involved in healthcare at IMU are well aware of how the fruits of research lead to real improvements for patients. Meanwhile, as an educational institution, IMU is passionate not just about how research benefits society, but also how it benefits those closer at hand: students and faculty.

“We are not training students to be researchers as such,” said IMU’s Vice-Chancellor Prof Abdul Aziz Baba. “Nevertheless, everyone must be research-competent and appreciate the value of research in the healthcare professions.” It is widely accepted that students gain from having a research component in their studies, but there is greater ambivalence when it comes to faculty members undertaking research.

One misperception among students, parents and even faculty members themselves is that when professors do research work, the quality of their teaching inevitably suffers, along with their students’ learning experience. This need not be so if the right balance is struck. “Research actually has a direct impact on the quality of teaching that students can expect,” said Prof Datuk Lokman Hakim Sulaiman, Director of IMU’s Institute for Research, Development and Innovation (IRDI).



Prof Leong Chee Onn

RE: SEARCH FOR KNOWLEDGE

How does research improve teaching? Firstly, teaching staff who undertake research are closer to their subject matter, and this helps them maintain a firmer grasp of what they teach. Insights obtained from being at the forefront—what's new, what's been debunked—are passed on to students.

Second, students get used to the idea that knowledge is ever expanding, and that not everything is etched in stone. The aim is also to get students to believe the next big breakthrough may come from them. "Through research, students take the first step from being passive consumers of knowledge to being active producers of knowledge," said Prof Datuk Lokman.

Third, when a university commits itself to research, it invests in research infrastructure: laboratories, equipment, libraries, and so on. When these facilities are made available not just to senior researchers but to students at all levels, their learning experience is enhanced.

Fourth, research turns professors back into students—and this is a good thing. "The quest for knowledge is the basic principle behind research," noted IMU's Prof Leong Chee Onn, founding head of IRDI's Centre for Cancer and Stem Cell Research (CSCR). If the message to young students is that continuous learning is vital, there is no better way to drive home the point than for seasoned professors to embody the notion themselves. By staying in touch with the learning process, faculty members are also better able to empathise with their students.

RESEARCH AT IMU

In 2018, nine IMU researchers received grants under the Ministry of Education's Fundamental Research Grant Scheme (FRGS). Prof Datuk

Lokman believes this feat is attributable to three common factors, besides the fact that the recipients are dedicated to their research, and that they challenge accepted ways of thinking: "First, they work on real-world problems and the application of research. Second, they interact extensively with faculty and peers globally. Third, they have exposure to diverse ideas through multidisciplinary collaborations."

In addition, at IMU they are supported by the institutional culture of innovation and academic excellence that permeates research-driven universities. IMU offers a high concentration of faculty and student talent; significant resources that help create conditions for pursuing cutting-edge research; and the development of leadership skills and strategic vision.

When he was considering his next steps after his tenure at Harvard Medical School, Prof Leong visited many labs and institutions in Malaysia and neighbouring countries. In the end, "it was the open concept of the IMU lab, and also the research culture,

"The greatest moment for researchers is when we obtain the results from our experiment, be it positive or negative."

that attracted me to join IMU. I was able to start my research on my very first day, thanks to the shared facilities and support given by the university.” Prof Leong noted that “the unique feature of the IMU lab is that no single PI [principal investigator] owns the equipment. It is all provided by the university and every user has equal access to the facility.”

When asked about his research, Prof Leong may use words such as “epithelial tumorigenesis” and “molecular targets” and “p63 and p73 pathways”. Once the jargon is rendered in plain English, however, the significance—especially for those battling the sub-group of breast cancers known as triple-negative breast cancers—is clear: “Our discovery has provided new therapeutic avenues for treatment and the significant improvement of the outcome of this disease that affects more than 170,000 patients annually, worldwide.”

WHAT DRIVES RESEARCHERS?

At the national level, if a country aspires to build a culture that values research, it is important to recognise specific achievements as well as entire careers dedicated to advancing knowledge. Every year, the Academy of Sciences Malaysia (ASM) bestows the Top Research Scientists Malaysia (TRSM) Awards to research scientists

who have distinguished themselves as role models of excellence, mentors to the next generation and leaders in the nation’s science, technology and innovation (STI) agenda. It is based on the accumulation of research impacts, societal contribution and research excellence.

“It is equivalent to a lifetime achievement award,” said Prof Leong, who was among the 2018 recipients of the prestigious TRSM Awards.

External validation is important, but ultimately, motivation must come from within. “On a personal level, my number one motivation is surely passion and curiosity,” said Prof Leong. “I love nature, and I want to make a humble contribution towards unlocking some of its many secrets. I find puzzles thrilling and challenging, and science is the ultimate puzzle-solving activity.”

Inner motivation is crucial since research work is not without its challenges and uncertainties.

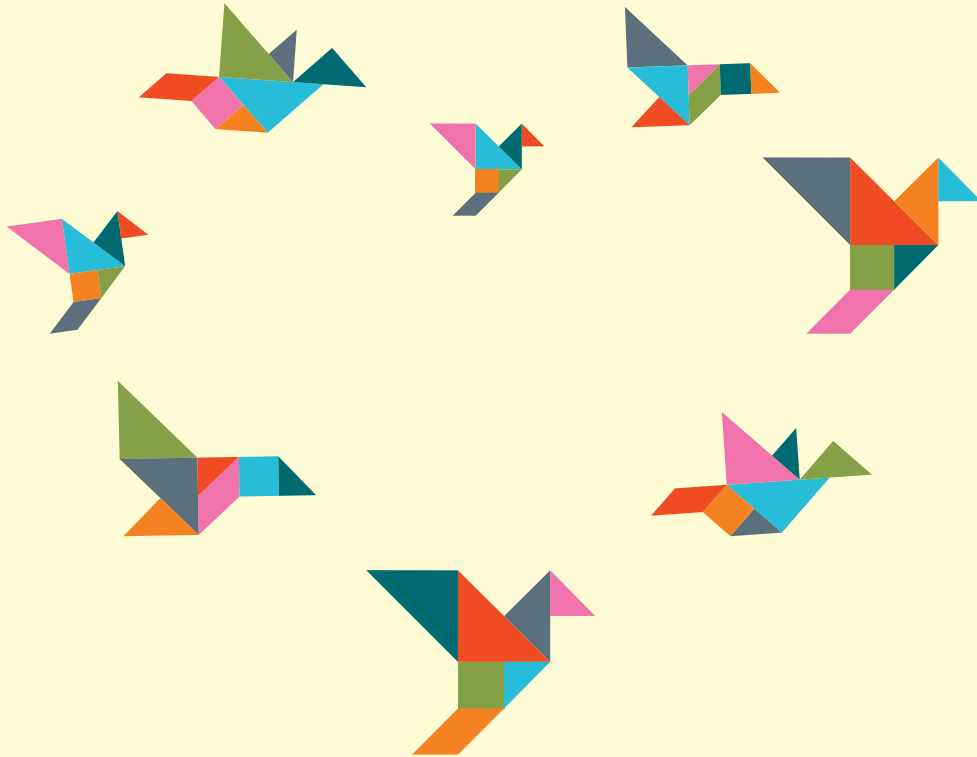
Researchers must be prepared to juggle tasks and engage in the continuous fight for grant money. “The biggest challenge facing scientists and researchers is to balance the administrative and research roles of being a principal investigator. To succeed in science today means doing well in many non-research-related activities,” Prof Leong said.

WHAT MAKES IT ALL WORTHWHILE?

Accolades aside, what is the ultimate thrill for a researcher? “The greatest moment for researchers is when we obtain the results from our experiment, be it positive or negative. That’s the moment when you know a little bit more than other people about nature, because at that point you are still the only one in the whole world who has seen those results. That, I think, is the greatest feeling every time we go into the lab.”

Nine IMU researchers received grants under the FRGS





**SERVING THE
COMMUNITY**

2018

Highlights

- Dental screening and treatment for refugee children
- Immunisation for refugee children
- Recycling of toiletries
- Chariofare 2018



Serving the Community

IMU takes pride in playing a meaningful part in community life, and IMU Cares is the University's platform from which students and staff have the opportunity to engage and reach out to society and share valuable resources, particularly time, knowledge and experience. In 2018, IMU Cares continued to focus its activities on improving the health and wellbeing of communities with the aim of promoting self-sustaining lifestyles and sustainable living.

The bulk of IMU Cares' activities are focused around health awareness through education, health screenings and primary medical management in both urban and rural communities. This year, however, we rolled out new initiatives to support one of our central pillars: the environment and sustainable living. These activities centred on recycling activities and tree-planting exercises.

CORE PROJECTS**Dental screening and treatment.**

This project has been running since 2014 and continues to be the mainstay of IMU Cares. Inspired to contribute to the betterment of oral health, which is often neglected in underserved communities, staff and students of the School of Dentistry have been volunteering their services to rural and urban poor communities, the elderly at old folks' homes, as well as children in schools and refugee learning centres. This year, we screened a total of 278 refugee children from four refugee learning centres. Of this number, 237 children were referred to IMU's Oral Health Committee for dental treatment. We also partnered with dental companies, which sponsored toothbrushes and toothpaste for the children.

Immunisation for refugee children.

In 2017, IMU collaborated with UNHCR and the Institute of Migration (IOM) as well as NGOs such as Tzu Chi, the Islamic Medical Association of Malaysia's Response and Relief Team (IMARET) and ElShaddai to provide free vaccination to refugee children. Immunisation is essential for this community as refugees must be declared disease-free prior to being transferred to a third country. This was the first time such an initiative was carried out in Malaysia, and IMU Cares was proud to play a meaningful role in it.

Children from six refugee learning centres were vaccinated against hepatitis B (sponsored by IMU Cares), tetanus, diphtheria, whooping cough and haemophilus influenza Type B. Combinations of these vaccinations were provided to a total of 1,122 children, who also received booster shots.

The initiative was a success because of the good working collaboration that was set up with UNHCR and IOM. Through the project, IMU Cares provided benefits to refugee children, received more referrals from UNHCR, and volunteers were able to assess the nutrition of the refugee children.

Recycling of hotel toiletries.

IMU Cares worked with hotels to collect partially-used bottles of toiletries such as shampoo, body wash, conditioner and body lotion. IMU staff and students then hygienically extracted the contents to be sent to the Caring Community Centre (CCC) while the empty bottles were sent for recycling.

The CCC is an NGO that serves about 60 urban poor families in the town of Kapar, Klang, including single mothers and orphans. To date, it has accumulated a total of 63kg of liquids and approximately 30kg (body wash and shampoo) has been distributed to beneficiaries of the centre.

Chariofare 2018.

Themed "Igniting Paths", the annual run and carnival was held for the seventh time this year. Chariofare 2018 successfully raised a total of RM290,282 through the overwhelming support of 116 sponsors, well-wishers, IMU students and staff. The funds will go towards the IMU Cares Humanitarian Fund, which will be



Chariofare 2018



Dental screening and treatment

used to reach out to aid deserving underprivileged communities in the areas of healthcare, education and disaster relief. In the past, money raised from Chariofare has benefited victims of the Aceh Tsunami, Typhoon Haiyan in the Philippines, the Nepal Earthquake and, closer to home, flood victims in Kuala Krai, Kelantan.

CHANGE, CHALLENGES AND OPPORTUNITIES

This year also saw the successful transition of leadership of IMU Cares from Prof Ong Kok Hai, who has served IMU Cares since 2006, to Prof Khoo Suan Phaik who took the helm in July 2018.

In 2018, IMU Cares also faced the discontinuation of support from IHH Khazanah Funds, which ceased at the end of the year. This brought new challenges with regard to planned projects and the utilisation of funds. However, with the cooperation of project leaders and university administrative staff, existing funds were well-coordinated and efficiently utilised.

MOVING FORWARD

IMU Cares will continue to focus on its pillars of wellness and disease prevention targeting the B20 communities, youths and mental health, healthy aging and sustainable living. We intend to achieve our goals in these areas through service learning, volunteerism and community-engaged research.

In this regard, we have identified two flagship initiatives: the Social Innovation Lab and the Sustainable Livelihood Project. The Social Innovation Lab encourages project leaders to innovate to provide solutions to social issues and challenges, while the Sustainable Livelihood Project encourages self-sustainability in all projects.

This year, we rolled out new initiatives to support one of our central pillars: the environment and sustainable living.

Besides these, IMU Cares will seek ways to benefit society with the expertise and disciplines available to a healthcare university, and we hope to engage with more external communities to address societal issues together.

We are also looking at ways to optimise digital tools to bring about change in the implementation, delivery and evaluation of our projects.

2019 will also be about changing the mindsets of planners and implementers who will have to be more innovative in running projects with less funding.

However, IMU Cares remains committed to making community engagement a part of each individual, and we will continue to make service learning an experience for every student in the university.

IMU Cares will seek ways to benefit society with the expertise and disciplines available to a healthcare university, and we hope to engage with more external communities to address societal issues together.



Immunisation for refugee children

IMU IN THE WORLD PARTNER UNIVERSITIES



IMU's pledge to offer only the best educational experiences for its students extends far beyond its borders. With a secure and long-established global network of 32 partner institutions of higher learning, IMU is committed to opening doors to education and training opportunities outside Malaysia via our credit transfer programmes. These collaborations in

health professional education cover most of the undergraduate programmes offered at the University which makes the dream of studying overseas more accessible to Malaysians. Similarly, IMU is unique in fostering and establishing collaborations for the training of practitioners in complementary therapies. Building and developing these worldwide

relationships also strengthens the University's ability to secure global talent, which in turn helps attract the brightest and the best to come and study at IMU. Since 1995, IMU's Partner Schools have conferred more than 3,000 individuals. Having established itself as a household name in Malaysia, IMU is well on its way to international recognition.

AUSTRALIA



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