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RESILIENT



RESPONSIVE

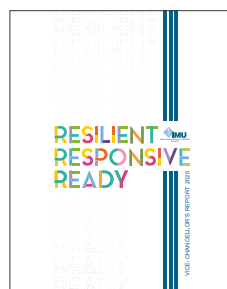
READY



VICE-CHANCELLOR'S REPORT 2020

READY
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READY

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IMU is resilient.

Our years of experience ensure that we are here to stay no matter the situation.

IMU is responsive.

We are committed to responding in the here and now, especially in times of crisis.

IMU is ready.

Always forward-looking and future ready.

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MESSAGE FROM THE VICE-CHANCELLOR



Dear Readers,

Since the emergence of COVID-19, people everywhere have had to deal with unprecedented loss – of human life, livelihood, mobility, a sense of community and a sense of security.

Meanwhile, frontliners have had to risk their lives and work past exhaustion. It would be understandable if, under such conditions, some of them were to conclude: “This is not what I signed up for.”

At IMU, we have been shaping future frontliners for 28 years. We also provide healthcare services at our clinic and centres. And we conduct medical research in our laboratories. So as difficult and uncertain as 2020 has been, it is what we signed up for.

In a year in which almost nothing was “business as usual”, the IMU community came together and met numerous challenges. We kept one another safe while also protecting our shared vision and purpose. Here are my reflections on a year unlike any other.

Clarity amid uncertainty

The past 12 months took us into uncharted territory, but through it all we remained clearly focused on two priorities as an educational institution: first, ensuring the safety of our students and staff, and second, maintaining the quality of the IMU teaching and learning experience. These priorities – safety and quality – were also our focus in Healthcare and Research.

At IMU, we have been shaping future frontliners for 28 years. We also provide healthcare services at our clinic and centres. And we conduct medical research in our laboratories. So as difficult and uncertain as 2020 has been, it is what we signed up for.

Teamwork and communication proved vital

COVID-19's advance was rapid and wide-reaching, necessitating a response that was equally swift and extensive. We couldn't have done it without teamwork. Our Crisis Management Team (CMT) met daily, incorporating into their decision-making important input from students, staff and other stakeholders. The CMT led our overall response, but everyone in the IMU community played a role.

Along the way, we learned the value of over-communicating in a crisis. Besides ensuring messages cascaded down repeatedly in a single, clear voice, we kept avenues open for staff and students to voice concerns and share feedback.

Combating COVID-19 on all fronts

In addition to maintaining a safe campus, we also provided support for staff and students experiencing anxiety and stress. To help students whose families had been severely impacted financially, we established two funds. The RM3 million IMU COVID-19

Hardship Assistance Fund (ICHAF) was for students unable to complete their studies, while the RM2 million IMU COVID-19 Welfare Assistance Fund (ICWAF) addressed needs beyond tuition fees and extended into day-to-day welfare support.

Aside from other aid items we also donated two ventilators to partner teaching hospitals, and masks for frontliners in Sabah. Our research laboratory served as a diagnostic testing centre to help ease congestion at government centres. The Institute for Research, Development and Innovation developed a new strategy for cost-effective, large-scale diagnostic testing for COVID-19. IMU experts contributed input into government policymaking.

The pandemic disrupted some plans, and fast-tracked others

Needless to say, the pandemic caused multiple disruptions. Travel restrictions prevented our international students from joining us as scheduled, while the postponement of Sijil Pelajaran Malaysia (SPM) examinations will likely affect our future student intake.

Healthcare and Research staff had to manage Standard Operating Procedures (SOPs) as well as closures of centres and laboratories, with the latter resulting in delays in research projects. The opening of the IMU Hospital has been pushed from mid-2021 to early 2022.

But COVID-19 was not all about plans delayed or derailed. For example, IMU is now very much a blended learning institution, combining face-to-face with online learning. This transition was something we had been planning, and had already embarked on, even before COVID-19; the pandemic simply accelerated our journey to the future.

A better normal

The lockdowns and social distancing of 2020 pushed human interaction online. For us, of course, this centred on our teaching and learning. The real challenge here is not changing IT equipment but changing mindsets, and I am pleased to say that the IMU community responded well. Students adjusted to the new “classrooms”, while teaching staff worked to ensure that in moving content online, as little as possible was lost in translation.

Of course, some skills can only be taught and learned in person, hands-on, face-to-face; this is the nature of healthcare. Nevertheless, virtual learning will remain at IMU not because it is a new normal forced upon us, but because it offers students a better normal, with the

advantage of flexibility and customisation. For the same reason, we will likely be exploring micro-credentialing, not just for continuing professional education but as an alternative to traditional degree programmes.

More tech-enabled, no less human

Like education, healthcare has become increasingly technology-enabled. To provide the best patient care, healthcare professionals will need to possess digital competency and be able to handle data. For this reason, our plans for 2021 will include new programmes in big data and health analytics.

At the same time, we believe that with increasing technology, the patient will seek the human touch more than ever. So we will continue to emphasise the vital importance of soft skills and serving with compassion, empathy, humility and integrity – qualities also needed by doctors and nurses today who must communicate with, treat and comfort patients across the barriers of personal protective equipment (PPE) gear and social distancing.

SOPs for excellence

The pandemic did not stop us from excelling. In 2020, IMU attained a six-star rating in the SETARA 2018/19 for the second consecutive year. The SETARA rating system was introduced by the Malaysian Ministry of Higher Education in 2017 to improve the focus on four core functions of higher education institutions (HEIs) – general, teaching and learning,

Virtual learning will remain at IMU not because it is a new normal forced upon us, but because it offers students a better normal, with the advantage of flexibility and customisation.

research, and services – where their strengths in diversity as well as in each core function are measured vigorously.

In addition to this, IMU also attained a QS rating of 5, a year earlier than targeted. This was a proud moment, and it showed us that our formula for success not only works, but is pandemic-proof. In Research, our researchers again fared well in their FRGS grant applications, with 14 being awarded close to RM1.9 million in the 2020 grant cycle. IMU also won four of the eight awards at the South East Asia Association for Dental Education (SEAADE) Scientific Meeting.

We also successfully hosted the Ottawa Conference, a major medical education conference organised in partnership with Association for Medical Education in Europe (AMEE). It took place in early March, just as COVID-19 was picking up steam, forcing us at the last minute to switch delivery of the conference to a hybrid mode. Our efforts yielded not just appreciative feedback from delegates but perhaps also a template for other pandemic-era conference organisers.

2021 will mark the start of the IMU Strategic Plan 2021-2025, also known as ASPIRE III. The year ahead will no doubt bring continued uncertainty and multiple challenges, but 2020 brought us clarity of vision and many lessons that will guide us going forward. Thank you everyone. Stay safe, strive for excellence and serve with humility.



Prof Abdul Aziz Baba
Vice-Chancellor
International Medical University

UNIVERSITY HIGHLIGHTS 2020

27 March

IMU begins diagnostic testing for COVID-19. IMU was invited by the Malaysian Ministry of Health to perform this service under an initiative to recruit diagnostic laboratories to help the Government cope with the rising number of COVID-19 cases.



11 August

IMU signs a Memorandum of Understanding with the Malaysian Institute of Road Safety Research (MIROS), InciSioN Malaysia and DriveMark to formalise a collective effort to promote a Nationwide Road Safety Campaign. The campaign will take place in the form of an interactive challenge called the National Safest Driver Challenge (NSDC). The NSDC aims to reduce road accidents through better understanding of drivers' behaviour, which is recorded by DriveMark, an interactive app that tracks common driving patterns including braking, acceleration, speeding and cornering. Other education and awareness programmes will also be held across various platforms.

7 September

IMU virtually welcomes the pioneer cohort of students into the Master of Counselling programme.



STARSTM
RATING SYSTEM



5 October

Following a three-month audit, IMU is rated a five-star institution by Quacquarelli Symonds' QS Stars, the world's leading provider of services, analytics, and insight to the global higher education sector.



18 December

IMU is awarded the SETARA 2018/19 six-star rating for the second consecutive term under the Mature University category. IMU is the only local private university among the Top 8 Universities that received this recognition by the Ministry of Higher Education.



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

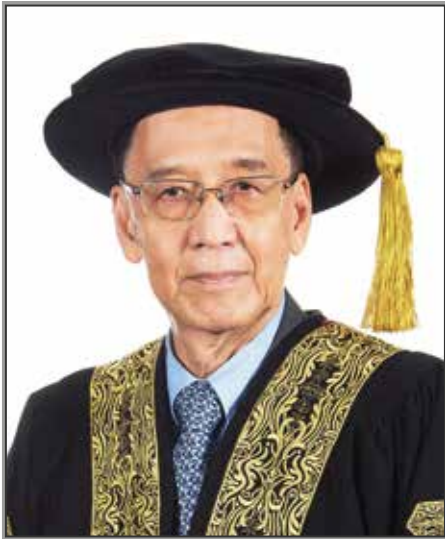
We expect staff and students to embrace, live and demonstrate these values, so that they may become role models. These values are integral to our culture; they underpin our work, communication and interaction, and explain why we do business in the way that we do. Our culture and its embedded values will 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.

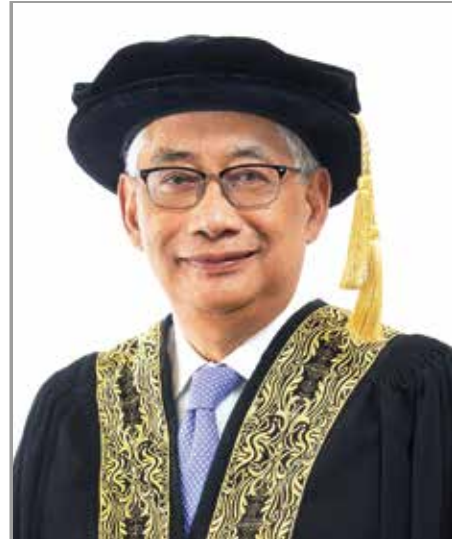
CHANCELLOR & PRO-CHANCELLOR



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)

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

YBhg Tan Sri Dato' Dr Abu Bakar Suleiman

MBBS (Monash), MMed (S'pore), DMedSc (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), Hon MD (Qld)

YBhg Tan Sri Dato' Dr Yahya Awang

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

YBhg Prof Datin Paduka Dr Aini Ideris

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

YBhg Prof Dato' Dr Abu Bakar Abdul Majeed

BPharm (Egypt), MBA (USM), PhD (Neurophysiology) (Sheff)

YBhg Prof Dato' Mafauzy Mohamed

MBBS (Adelaide), MMSc (Sheffield), MRCP (UK), FRCP (Edin), HonDoc (IMU)

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), MRCPPath, FRCPPath, FAMM, FASc

SENATE

Prof Abdul Aziz Baba

Vice-Chancellor

Prof Dr Zabidi Azhar Mohd Hussin

Pro Vice-Chancellor, Academic

Prof Vishna Devi V Nadarajah

Pro Vice-Chancellor, Education & Institutional Development

Prof Toh Chooi Gait

Pro Vice-Chancellor, Engagement and Industrial Partnership

Prof Datuk Dr Lokman Hakim Sulaiman

Pro Vice-Chancellor, Research

Prof Victor Lim

Pro Vice-Chancellor, Special Functions

A/Prof Dr Tan Eng Lai

Dean, School of Postgraduate Studies

Prof Dr Nafeeza Hj Mohd Ismail

Dean, School of Medicine

Prof Allan Pau Kah Heng

Dean, School of Dentistry

A/Prof Mohd Zulkefeli Mat Jusoh

Dean, School of Pharmacy

Prof Winnie Chee Siew Swee

Dean, School of Health Sciences

Prof Er Hui Meng

Dean, Teaching & Learning

Prof Khoo Suan Phaik

Associate Dean, Community Engagement

Prof Azizi Ayob

Deputy Director, Commercialisation & Support

Prof Leong Chee-Onn

Deputy Director, Research (IRDI)

Prof James Koh Kwee Choy

Associate Dean, School of Medicine

Prof Nazimah Idris

Medical Director, IMU Healthcare

Prof Dato' Dr Maimunah A Hamid

Professor, School of Medicine

Prof Sharifah Sulaiha Hj Syed Aznal

Associate Dean, School of Medicine

Prof Mallikarjuna Rao Pichika

Associate Dean, School of Pharmacy

Prof Chin Beek Yoke

Associate Dean, School of Health Sciences

Prof Seow Liang Lin

Associate Dean, Clinical Oral Sciences

Prof Zhou Wenxin

Professor, Chinese Medicine

Prof Dato' Dr Kew Siang Tong

Professor, Internal Medicine

Prof Esha Das Gupta

Professor, Internal Medicine

Prof Dr Ong Chin Eng

Associate Dean, School of Pharmacy

Prof To' Puan Safurah Ja'afar

Professor, School of Medicine

Prof Dato' P Kandasami Palayan

Professor, Surgery

Prof Dato' N.Sivalingam Nalliah

Professor, Surgery

Ex-officio Members**Christy Chiu**

Chief Operating Officer & Chief Financial Officer

Zuhanariah Mohd Nordin

Chief Librarian

Noor Azlinda Aripin

Legal Counsel, Legal & Secretarial

Secretary**Noraidah Yusoff**

Registrar

ACADEMIC COUNCIL

Every year, the Academic Council (AC) meets to discuss the issues involved in running the University. It serves as a platform to bring together the University and its Partner Medical and Dental Schools, and to enable representatives to share updates as well as discuss administrative and academic matters. Areas reviewed 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 its partner institutions remain aligned to the core foundational strategy.



This year's 31st annual AC meeting was held on 5-6 March at the IMU Bukit Jalil campus. Not all members were able to attend the meeting on-site due to the COVID-19 pandemic. Eighty percent of the AC representatives attended the meeting physically while 20 percent attended virtually.

During the two days, **Partner Medical Schools (PMS)** were updated on changes to be made to the new medical curriculum in 2020. The delegates also divided into four breakout sessions based on student-centred themes in support of IMU's goal to enhance the student experience. The aspects discussed were:

- student professionalism
- student wellness
- student enrichment for transition into various settings
- undergraduate research skills.

At the end of these deliberations, members agreed on the steps needed to meet the outputs of each discussion.

At the same time, the **Partner Dental Schools (PDS)** also held their annual meeting, which was chaired by Prof Richard Logan, Dean of the University of Adelaide Dental School. Prof Allan Pau, Dean of School of Dentistry, IMU, updated PDS representatives on the dental programme at IMU.

Prof Pau reported that the Professional Education Advisory Committee (PEAC)

31st ACADEMIC COUNCIL MEETING





review of the Bachelor of Dental Surgery (BDS) curriculum was completed in October 2019. Re-accreditation documentation was submitted to the Malaysian Qualifications Agency in the same month and the site visit was carried out in March 2020.

Prof Pau also reported that students had transferred smoothly to Partner Dental Schools in 2019 and early 2020. Dr Debora Matthews of Dalhousie University informed the meeting that the first batch of IMU students who had transferred into the Dalhousie Dental School would be graduating in 2020.

Other presentations included:

1. "Dental Wiki" by Dr Umer Daood
2. "MOOC on Tobacco Cessation" by Dr Sobia Bilal



3. "Experience of PDS Partnership" by Dr Mandakini Mohan
4. "Ask the Expert: Unbundling the Curriculum through Videopedia" by Dr Rohit Kunath Menon.

PROFESSIONAL EDUCATION ADVISORY COMMITTEE (PEAC)



The PEAC was held with strict SOPs. PEAC members from abroad attended the meeting virtually.

The Professional Education Advisory Committee (PEAC) is a sign of IMU's commitment towards the 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 IMU Board of Governors.

This year's PEAC was scheduled for 12-13 October 2020. At the time of the meeting, Malaysia was under the Recovery Movement Control Order (RMCO) which restricted the entry of overseas visitors into the country. Taking this into consideration, the PEAC meeting was held virtually for PEAC members with IMU staff attending either physically or online. This was the first time the PEAC meeting was held via a hybrid model.

The PEAC members are:

- Prof Trudie Roberts, University of Leeds, UK
- Prof Richard Hays, University of Tasmania, Australia
- Prof Gary Mires, University of Dundee, Scotland
- Prof Tan Sri Salleh Yassin, Universiti Kebangsaan Malaysia
- Prof John J. Norcini, Past President, Foundation for Advancement of International Medical Education and Research (FAIMER), USA
- Prof Nairn Wilson, Queen Mary University of London, UK

At the main PEAC meeting, delegates discussed the topic “Transformation from Face-to-Face to Remote Learning During the COVID-19 Pandemic” with all the Schools. Commendations were received in the following areas across Schools and Programmes:

- IT support for faculty who had to move to online teaching
- Training and support for teachers from the IMU Centre for Education (ICE) on new ways of working
- Engagement with students
- Teamwork and commitment demonstrated by all staff
- IMU staff’s ability to embrace different ways of working (e.g. synchronous and asynchronous online lecture delivery)
- The adaption from examinations to open book assessments for knowledge tests, and the evaluation of the feasibility of online delivery of other assessment tools (e.g. objective structured clinical examinations in the School of Pharmacy)
- Support by Schools for students who had to embrace new ways of learning and assessment
- Imaginative ways of teaching clinical skills which helped prepare students to return to the clinical environment
- Use of video to support practical science learning (e.g. in the School of Pharmacy).

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

- GTE 1: Work from Home
- GTE 2: Faculty Development
- GTE 3: Assessment Strategies of the Future
- GTE 4: The Future of Skills-based Training

Due to time constraints, there were no clinic sessions this year. This is usually held as a platform for staff to meet PEAC members to discuss issues that have been brought up by the staff. We hope to reinstate this in 2021.

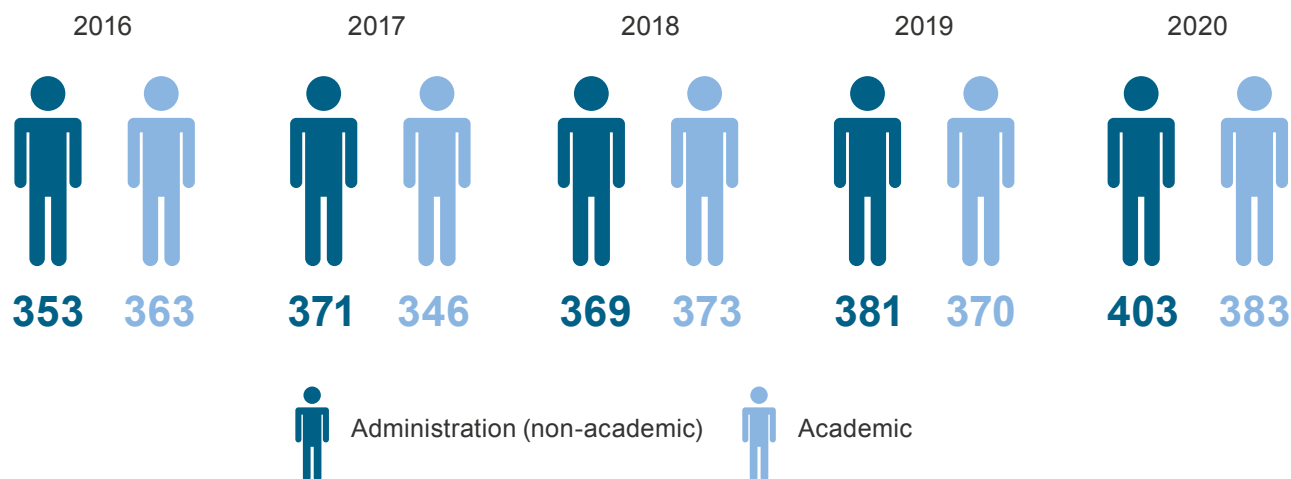


The PEAC members were appreciative of the hard work that the IMU staff had put into the preparation for the meetings and felt that the IMU staff had stepped up to the mark in delivering a high-quality student experience despite the difficulties posed by the pandemic.

The discussions of the PEAC generated feedback and recommendations which have been circulated and will be further deliberated at the next PEAC meeting.

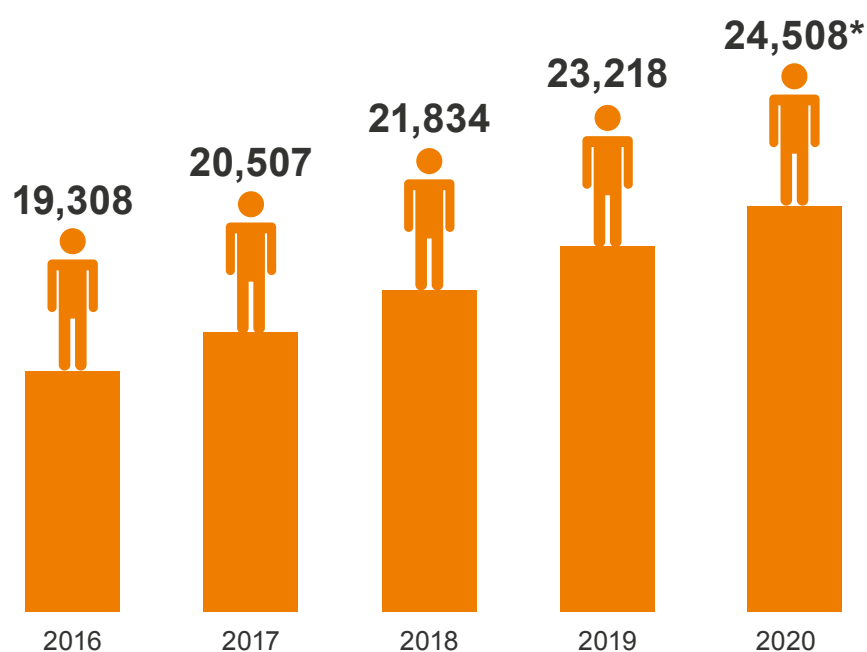
IMU STAFF POPULATION

as of 30 November 2020



IMU STUDENT POPULATION

as of 31 December 2020



* Total includes alumni as of Dec 2020



EDUCATION

CENTRE FOR PRE-UNIVERSITY STUDIES

Launched in 2014, our one-year Foundation in Science (FiS) has become the top choice for pre-university students considering undergraduate studies in the University's medical and health sciences programmes. By providing a solid introduction to scientific method and other broader areas of study, FiS helps school-leavers transition smoothly to the undergraduate level. Whether at IMU or at our partner universities, FiS students enjoy a variety of academic opportunities and pathways.

2020 highlights

- Design and implementation of rigorous online teaching, learning and mentoring to accommodate COVID-19 restrictions
- 14% increase in student numbers, with 428 new students enrolled
- 87% progression of FiS students to the 2019 and 2020 undergraduate intakes, resulting in over 280 new enrolments
- Three FiS staff received awards at the IMU Teaching and Learning Festival

COVID-19

In compliance with the Government's Movement Control Order (MCO) announced in March, we transferred the entire Foundation in Science (FiS) course online. The FiS programme content lends itself well to online teaching, as there is relatively little skills-based teaching at this level apart from chemistry and biology laboratory sessions.

We encountered some difficulties in converting some of the younger students straight from SPM and IGCSE to the discipline of online teaching and university-oriented education. Fortunately, the FiS staff, already very tech-savvy prior to the MCO, were able to adapt well to online teaching and learning as well as mentoring.

Strength in numbers

Our biggest achievement in 2020 was the 14 percent increase in student numbers across the three FiS intakes. Thus, in spite of the COVID-19 restrictions on conventional student recruitment, a total of 428 new students enrolled in FiS.

PROGRAMME



Foundation in Science (FiS)

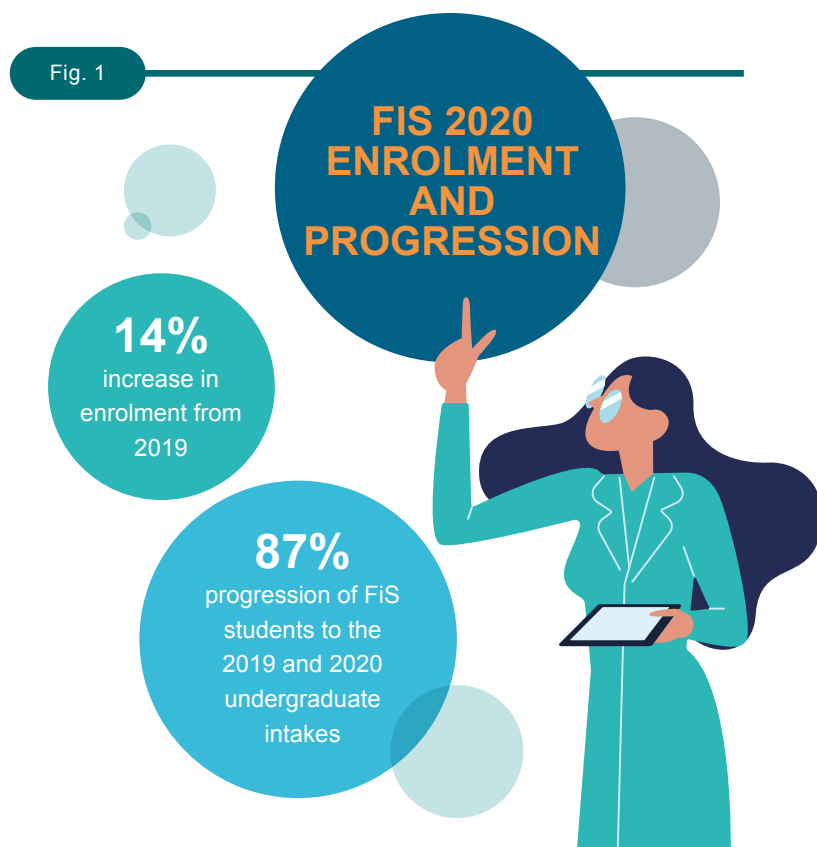
The FiS, Marketing, Admissions and Student Services teams worked tirelessly to ensure that IMU was FiS students' top choice for their undergraduate education. We achieved an 87 percent progression of FiS students to the 2019 and 2020 undergraduate intakes, resulting in over 280 new enrolments (Fig. 1).

In another highlight of the year, three FiS staff received awards at the IMU Learning Resources Festival for their innovative online chemistry and biology laboratory teaching resources.

Moving forward

In the year ahead, we plan to continue our broad-based team effort to build FiS recruitment and undergraduate progression. We will also be working on embedding key elements of the online teaching experience in the FiS course.

Fig. 1



“It is with great pride that I am involved with teams across IMU that adapted so well to the New Normal for the greater benefit of students and the reputation of the University. In particular, I wish to thank my FiS colleagues who were so proactive, innovative and supportive during the switch to online teaching. Finally, my respect to the students who adapted so quickly to the new learning environment.”

– Dr James Edward Walsh
Head, Centre for Pre-University Studies.

SCHOOL OF MEDICINE

Our aim is to nurture doctors and psychologists who will distinguish themselves with their expertise, passion and compassion. We empower students with professional skills and knowledge while instilling empathy, team spirit and a sense of community service. Our extensive curricula, clinical training and partnerships ensure that students are well prepared for fulfilling careers and leadership roles in healthcare.

2020 highlights

- Successful switch from conventional teaching and learning (T&L) to online modes
- Completion of new curriculum
- Phase 1 in the unbundling of the curriculum, with links to Harvard Medical School and Chang Gung University
- IMU Senate approved the SOM Enhanced Professional & Personal Development Programme for students
- 147 papers published and RM1.1 mil secured in research grants

COVID-19

At the School of Medicine (SOM), we directed much of our focus in 2020 towards implementing measures to keep our students safe while also maintaining the quality of their education (see pages 24-25). Our faculty worked hard to acquire the requisite skills for effective online teaching, while students adapted well to the many changes.

In the local MBBS programme, the dates of progression to the next semester were delayed by four to eight weeks, but credit hours and clinical experiential learning were not compromised. Meanwhile, the transfer of students to Partner Medical Schools (PMS) was unaffected, with PMS closely monitoring those students who might lack clinical exposure this year.

PROGRAMMES



Bachelor of Medicine and Bachelor of Surgery (MBBS)



Bachelor of Medical Sciences (Hons)



Bachelor of Science (Hons) in Psychology



Master of Counselling

The SOM Enhanced Professional & Personal Development (PPD) Programme

This programme aims to build students' interpersonal skills to enable smoother transition from pre-clinical to clinical phases and housemanship, with a focus on strengthening four attributes:



ACTIVITIES IN 2020:

- Alumni workshop for ME119 (Semester 4)
- Bridging Course – Phase 1 virtual talk by alumni for ME219 (Semester 3)
- Interpersonal skills workshop during orientation for ME118 (Semester 6)

Progress despite the pandemic

Some student and faculty development activities had to be put on hold, but we made good progress on several key initiatives.

New curriculum. In 2020 we completed work on our new curriculum. Slated for implementation in 2021, the new curriculum emphasises community training in addition to hospital placements. It will also continue to offer personalised training through T&L modalities such as case-based learning and team-based learning.

Unbundling the curriculum. Increasingly, universities are looking at flexible alternatives to conventionally structured degree programmes, with digital forms of T&L playing a key part. In Phase 1 of our initiative to unbundle the SOM curriculum, we linked up with Harvard Medical School, Chang Gung University, Taiwan, and several PMS to build online learning resources for students.

Ensuring adaptability in students.

The SOM Enhanced Professional & Personal

Development (PPD) Programme received Senate approval this year. The programme aims to ensure students are able to transition smoothly into various professional settings (Fig. 2).

Community and industry collaborations.

In late 2019, SOM signed a Memorandum of Understanding with a new partner, the Kobe University Graduate School of Medicine, Japan, for collaboration in staff and student mobility and research.

More recently, our webinar on the impact of road accidents on the healthcare system was part of IMU's partnership with InciSion Malaysia, DriveMark and the Malaysian Institute of Road Safety Research (MIROS). InciSion Malaysia, which advocates for global surgery, was founded by students from IMU and other universities.

CPDs. Over the course of 2020, SOM conducted 21 continuing professional development events (CPDs) with stakeholders including the Ministry of Health, NGOs,

A comprehensive response to the pandemic

With guidance from IMU's Crisis Management Team (CMT) and Senior Management Team (SMT), the School was able to operate with minimal disruptions while adhering to advisories issued by the relevant ministries and authorities. The first Movement Control Order (MCO) in March necessitated changes in four domains.

1

Teaching and Learning (T&L)



1. T&L shifted online with asynchronous lectures, synchronous lectures with recordings, and live-interactive lectures
2. Academic Calendar reorganised to deliver theory components first
3. Timetables personalised for students stranded abroad
4. Selected clinical sessions replaced with online assignments and discussions
5. Simulation facilities used to simulate clinical scenarios
6. Students in senior semesters prioritised for clinical experiential learning

2

Assessments and examinations



1. Continuous assessments (CA) moved online with unproctored and proctored approaches
2. Number of questions adjusted to allow for connectivity issues¹
3. Questions re-vetted into Higher Order Thinking Skills (HOTS) questions
4. Objective structured clinical examination (OSCE) in the Medical Sciences (MS) replaced with Modified OSCE, and later with Virtual OSCE²
5. Selected clinical skills assessments deferred
6. Automatic progression to following semester³
7. Number of portfolios reduced due to limited clinical case mix available at teaching hospitals
8. Participation of External Examiners (EE) online
9. No Detriment Policy adopted by the University

¹ E.g. One Best Answer (OBA) questions were reduced from 60 to 40 for First Professional Examinations Part 1 & 2.

² The VOSCE enabled testing of clinical skills such as history taking, communication skills and counseling/advice skills.

³ Automatic progression was from Semesters 7 to 8 for the ME117 cohort as the OSCE could not be conducted at the time. Similarly, the OSCE for Final Professional Examination Part 2 for the ME116 cohort was deferred to the end of Semester 10 to replace the usual clinical long case.

3

Research



1. Laboratory-based research converted to theory-based research (e.g. meta-analyses and systematic reviews)
2. Research deadlines extended
3. Research submissions converted to soft copy
4. Presentation and defence of theses conducted online

4

Activities affected by travel restrictions



1. Massive Open Online Courses (MOOCs) and online modules offered in place of electives abroad
2. Alternatives offered for affected PMS transfers⁴

⁴ Due to travel restrictions to Australia, students transferring in January 2021 will either have to defer the transfer to 2022 or take up online modules/clinical placements in IMU-affiliated hospitals/clinics. Those who do not wish to defer will be matched with a UK PMS and will transfer in September 2021.

BACK ON CAMPUS: SOCIAL DISTANCING SOPs

Group sizes of sessions were reduced, with higher frequency of sessions. The number of examiners in the Final Professional Examination Part 2 was reduced from three to two for the portfolio viva and clinical long case, and SOPs were introduced for the conduct of clinical examinations. Students conducting research were required to access laboratory facilities in limited numbers and at scheduled times.

professional societies and colleges. The online webinars and workshops attracted local and international participation.

Other initiatives. 2020 also saw activities involving a structured peer mentoring programme, strengthening of the faculty

mentoring programme, a structured professionalism framework (at School level), an E-newsletter highlighting faculty research achievements and a series of webinars on global healthy lifestyles for students, lecturers and the general public.

Student-led initiatives. Despite the pandemic, our students were able to take the lead in various activities including the Consultoid programme (peer learning at clinical campuses) with its peer lecture series, as well as other presentations and webinars.

Students engaging with the world

In a year of travel bans and border closures, SOM continued to emphasise the importance of students gaining an international perspective.

Three ME216 students were partially sponsored to do clinical electives in the South Texas Health System in McAllen, Texas, USA, via an arrangement through Alpha Med Omega in February 2020. The initiative was aimed at boosting student recruitment from the ME119 cohort, which was offered 40 places in the programme.

The webinars by Prof Gordon Williams of Harvard Medical School (Fig. 3) gave our

students the opportunity to enhance their professional skills with an international perspective. An undergraduate lecture series by Harvard Medical School, Imperial College London and other renowned institutions is in the pipeline.

The Psychology Department held a collaborative CPD with Oregon-State University (OSU), USA. OSU's PhD Counselling students conducted a one-week workshop at IMU, as well as talks and workshops at NGOs and local schools. The IMU workshop persuaded several students to enrol in the Master of Counselling programme.

Research

The substantial work involved in shifting T&L online this year left SOM faculty and students with less time for research and publications. The pandemic also restricted laboratory-, hospital- and community-based research, and faculty members had to rethink and redesign their research work.

Fig. 3

Knowledge-sharing at SOM

Webinars			Workshops
 <p>"Road Traffic Accidents (RTA) – The Neglected Epidemic" (various speakers) (10 Sep)</p>	<p>"Aldosterone and Blood Pressure" and "Developing a Medical Career: The Art of Adapting; The Role of Science Training", by Prof Gordon Williams, Harvard Medical School (7 Oct)</p>	<p>"What Research is Worth Doing?" by Prof Teng Cheong Lieng, and "How to Retrieve Data from MoH?" by Prof Dato' Dr Sivalingam Nalliah (the first webinar in a series organised by the Research Advisory Committee for SOM faculty) (23 Oct)</p>	<p>"The Art of Writing Case Reports" by Prof Dr Irfan Mohamad, Universiti Sains Malaysia (7 Dec)</p>

Despite these obstacles, SOM members published 147 papers (as of mid-November), or 0.95 publications per full-time equivalent (FTE). We secured RM1,144,624 in research grants (with external grants amounting to RM774,096). As of December, 19.7 percent of SOM members were involved in various research projects as principal investigators (Fig. 4).

Moving forward

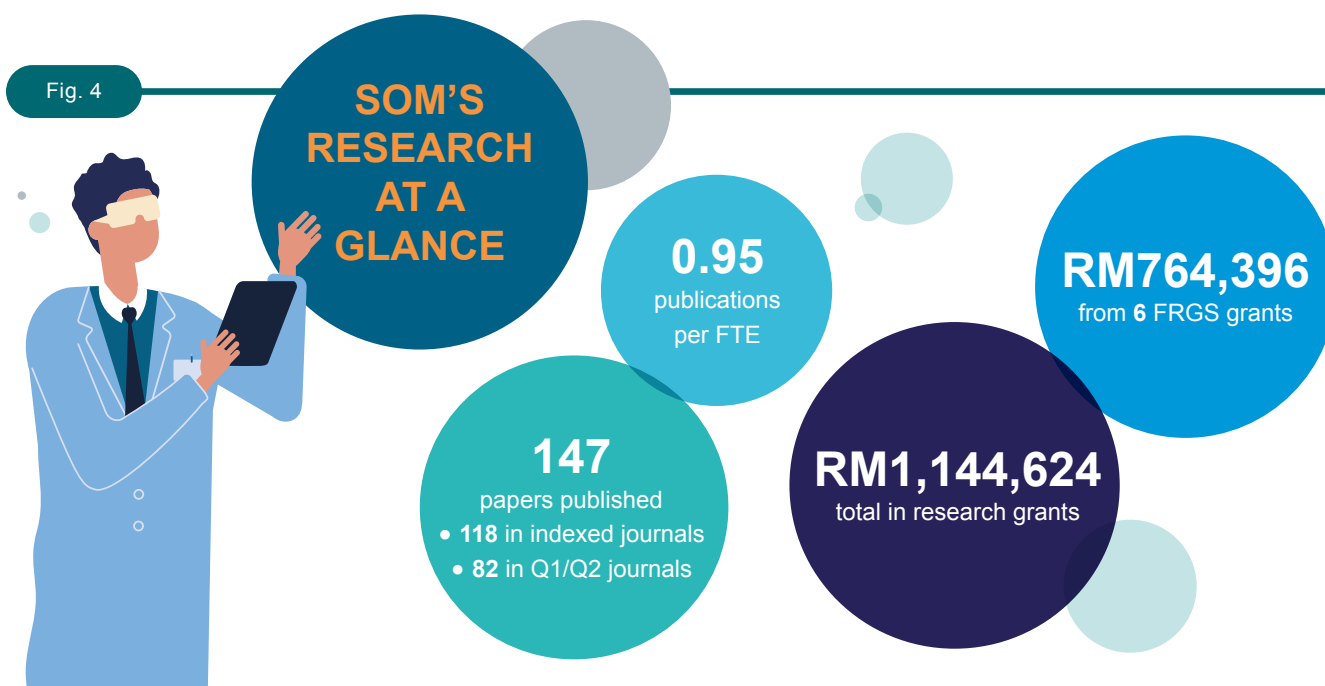
As we introduce the new curriculum in 2021, we will already be looking beyond to areas such as a blended learning model; exploring new PMS; new resources to support the unbundling of the curriculum and incorporating a social entrepreneurship component in the programme. To ensure that our students are able to adapt and thrive in uncertain times, we will also build on the Enhanced PPD programme. In research, plans to spur research activity include the creation of Research Interest Groups (RIGs) and annual research awards for SOM departments.

“To be an exceptional doctor, one must expect lifelong learning and be fully committed to keeping abreast of rapidly changing knowledge.”

– Prof Dr Nafeeza Hj Mohd Ismail
Dean, School of Medicine.



Fig. 4



SCHOOL OF DENTISTRY

We are committed to producing exemplary, compassionate and responsive clinicians capable of delivering top-quality, patient-centred, comprehensive care using contemporary technology. Resilient and adaptable, our graduates will advocate for better oral health and healthcare through leadership, entrepreneurship and inter-professional collaboration. Our dynamic programmes, well-equipped facilities, experienced faculty and an extensive clinical training component ensure that graduates are relevant and remain sought-after.

2020 highlights

- Bachelor of Dental Surgery (BDS) and Postgraduate Diploma in Implant Dentistry (PGDID) granted five-year re-accreditation
- Revised curricula for BDS and PGDID approved by the MQA
- New postgraduate programmes in prosthodontics and endodontics ready for launch in 2021
- 64 research articles, with 86% in Tier 1 and Tier 2 journals
- Four of eight possible awards won at 31st SEAADE Scientific Meeting

COVID-19

The pandemic had considerable impact on dental education and practice at the School of Dentistry (SOD), with practical skills training and clinical experience suspended at the commencement of the Movement Control Order (MCO). When students were allowed back on campus, we implemented strict controls to ensure health and safety amid ongoing concerns about the pandemic. In this light, the need for physical distancing effectively halved capacity for skills training, and key challenges included managing student training time to ensure that clinical experience met the required standards.

Students on the Partner Dental School (PDS) track were affected by international travel restrictions, and we agreed to new timelines with the PDS and regularly updated students.

PROGRAMMES



Bachelor of
Dental Surgery



Postgraduate Diploma
in Implant Dentistry



Despite these difficulties, we were able to deliver the complete curriculum without any compromise to the content (Fig. 5). We also successfully conducted all assessments within the approved timelines, without compromising assessment methods or content.



(above)
Online exam
proctoring.
(left) Final
Professional
BDS OSCE
Exam
(Malaysian
Dental
Council's
Professional
Qualifying
Examination
[PQE]
format).

Fig. 5

Key initiatives for curriculum delivery during the COVID-19 pandemic

“Tell-how” or think-aloud activities to learn about practical dental skills

Home-based skills development by providing students with instruments and materials for tooth-carving activities as well as portable simulation cutting units for development of hand skills

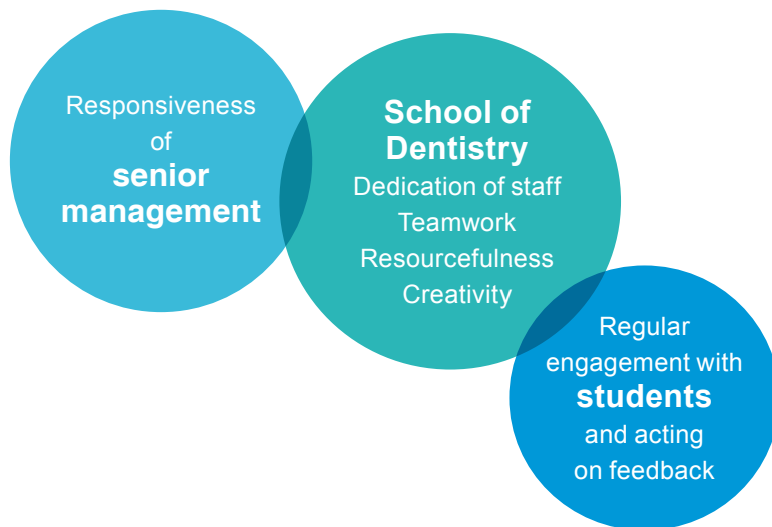
Virtual role-play in clinical case management to enhance communication, clinical reasoning and treatment planning skills

Online evaluation and assessment to ensure T&L objectives were met

In 2020, the DT115 cohort successfully graduated with a 100 percent pass rate. Several factors were instrumental in enabling us to manage our core functions and student expectations throughout the year (Fig. 6).

Fig. 6

Resilience throughout the pandemic



Key developments

In addition to delivering our core academic programmes, we focused on several ongoing initiatives in 2020. These included enhancing our research capability and capacity as well as research productivity; and supporting working dental practitioners through continuing professional development (CPD) courses and workshops.

We supported alumni outreach, with the Dental Chapter of the IMU Alumni Association ensuring continuous engagement and networking among alumni, students and faculty. We also worked on automating work processes for efficiency, focusing first on the process of student progress monitoring.

Re-accreditation and new curricula approved. The Bachelor of Dental Surgery (BDS) programme obtained re-accreditation for five years, the maximum allowed by the Malaysian Qualifications Agency (MQA).

Students undergoing procedural competency tests.



The MQA also approved our revised BDS 2021 curriculum (Fig. 7). Similarly, the MQA granted re-accreditation for five years for the Postgraduate Diploma in Implant Dentistry (PGDID) while also approving our revised PGDID 2021 curriculum.

Gearing up to launch new programmes.

Our two latest offerings, the Postgraduate Diploma in Prosthodontics (PGDPros) and the Postgraduate Diploma in Endodontics (PGDEndo), have been provisionally accredited by the MQA and will be ready for launch in 2021.

Awards won at 31st SEAADE. At the online 31st South East Asian Association for Dental Education (SEAADE) Scientific Meeting in November, IMU received four of the Meeting's eight possible awards. Among the winners was student Jacklyn Ng, who competed against teachers from across the region (see "Academic Achievements and Awards").

Award won at Dental Wikipedia Conference. In 2020, SOD continued its involvement in the Dundee Dental Wikipedia


Fig. 7

Bachelor of Dental Surgery: New Curriculum for 2021

The BDS 2021 curriculum will incorporate contemporary and innovative teaching and learning pedagogies, and will focus on:



curriculum integration



authentic learning



personalised learning

Editing Project to expand and improve Dental Wikipedia. The Steering Committee at IMU is led by Dr Umer Daood. This year (2020), three students, under the supervision of a faculty supervisor, produced a strong article for publication on Wikipedia Dental Page. The project (Sep 2019 – Feb 2020) began with editing within SOD and culminated in the presentation of our work to other dental schools. At the 4th Annual Wikipedia Collaboration of Dental Schools Conference held in March at the University of Dundee,



SOD students won the WCODS-Borrow Foundation Innovative Poster Award at the 4th Annual Wikipedia Collaboration of Dental Schools Conference.

IMU students Tan Wan Yee and Voon Ying Xuan won the prestigious WCODS-Borrow Foundation Innovative Poster Award.

Research. In research, the School secured external research funding of over RM90,000 which included an FRGS grant. Meanwhile, SOD faculty published 64 research articles – 1.73 publications per full time equivalent – of which 86 percent appeared in Tier 1 and Tier 2 journals (Fig. 8).

Moving forward

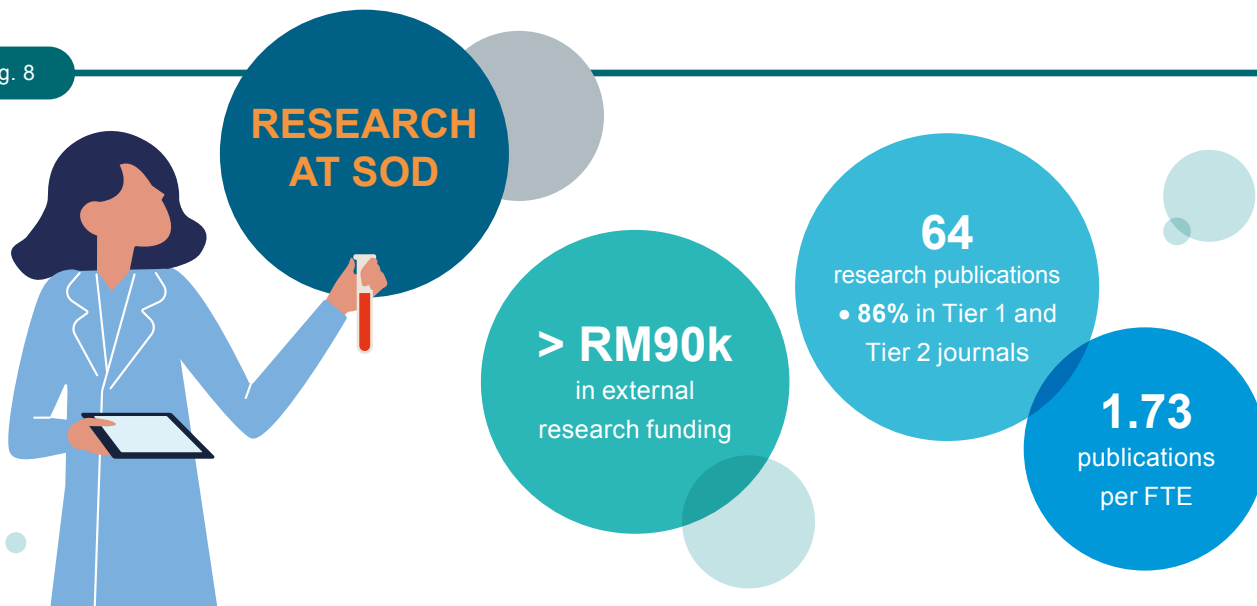
The year ahead will be an exciting and busy one for us. Our attention will be focused on the implementation of BDS 2021 and PGDID 2021, as well as on the launch of our postgraduate offerings, the PGDEndo and PGDPros. We will also continue to develop flexible approaches to learning and skills development through home-based simulation and skills development initiatives. Other items on the agenda include enhancing CPD offerings, building on research capability and capacity, and continuing to automate our work processes.



“Do not allow the pandemic to dampen your ambition. Have the courage and confidence to pursue your desire for an education, and know that we are here to support you and provide a positive learning experience.”

– Prof Allan Pau
Dean, School of Dentistry.

Fig. 8



SCHOOL OF PHARMACY

IMU's School of Pharmacy has built a solid track record of producing students who are fully prepared for the demands of the workplace. Our graduates are well equipped with skills beyond the pharmaceutical practice and go on to become pharmacists and pharmaceutical scientists who excel in their work and are leaders in healthcare.

2020 highlights

- Smooth transition to online T&L and assessment
- New articulation pathways to the University of Dundee for BSc Pharm Chem
- Two innovative new programmes developed in digital health
- Over RM3.4 mil in research funding, and 148 Scopus-indexed articles published
- Two faculty members achieved World's Top 2% Scientists ranking
- Pharmaceutical Chemistry Week, Pharmacy Week and MyPSA National Pharmacy Debate Competition

COVID-19

Throughout the year, the School of Pharmacy (SOP) successfully developed and used instructional or demo videos and online resources to conduct online teaching and learning (T&L) activities, including practicals, workshops, tutorials and project-based learning. We also implemented an online Objective Structured Clinical Examination (OSCE) for Semesters 4 and 8 of the Bachelor of Pharmacy (Hons) programme using Microsoft Teams.

The effectiveness of our methods was recognised externally, with faculty members invited to serve as speakers and resource persons at international webinars to share their experience and expertise in innovative T&L during the pandemic (Fig. 9).

PROGRAMMES



Bachelor of
Pharmacy (Hons)



Bachelor of Science (Hons)
in Pharmaceutical Chemistry

A paper by SOP faculty members on the conduct of online OSCE was accepted for publication in *Pharmacy Education*. Titled “Implementing Remote Pharmacy Objective Structured Clinical Examination During the COVID-19 Pandemic”, the paper was written by Pei Se Wong, Anil Tumkur Mruthyunjaya, Suresh Shanmugham, David Chong, Pravin Kumar and Syed Imran Ahmed.

On 28 September, students in the new cohort (BP120) of the Bachelor of Pharmacy (Hons) programme took the first step in their journey towards becoming healthcare professionals. For the first time, the White Coat Ceremony was held virtually because many students were unable to be present on campus, in accordance with the University’s COVID-19 guidelines. The Zoom event was graced by Amrahi Buang, President of the Malaysian Pharmaceutical Society (MPS), and featured speeches by SOP Dean A/Prof Mohd Zulkefeli Mat Jusoh and Programme Director Dr Mayuren Candasamy.

Despite the year’s challenges, our students did the School proud by excelling academically and in leadership positions, as well as in extra-curricular and community activities. Notable achievers included Vilashini Saravanan, Amanda Tan Yee Mun, Kishan Kunalan and Wong Xi Khai (see “Academic Achievements and Awards”).

Fig. 9

Sharing our T&L experience

Several SOP faculty members were invited to share their knowledge on T&L and assessment during the pandemic in various webinars:

- **Prof Er Hui Meng** – Inter-institutional Forum: Moving Forward with T&L During a Crisis (IMU)
- **A/Prof Mohd Zulkefeli Mat Jusoh** – Pharmacy Education series (Federation of Asian Pharmaceutical Associations, Kuala Lumpur)
- **Dr Pravinkumar Vishwanath Ingle** – COVID-19: Challenges & Opportunities of Online Education (Apex Institute of Pharmacy, India)
- **Dr Mayuren Candasamy** – COVID-19: Understanding and Preparing for the New Normal (NRI College of Pharmacy and NRI Institute of Technology, Andhra Pradesh, India)
- **Dr Palanisamy Sivanandy** – Management of Stress, Anxiety, and Depression (SAD) during COVID-19 Lockdown Period (District Rotaract Organisation and Rotaract Club of Excel College of Pharmacy, India)
- **Dr Subrat Kumar Bhattamisra** – International Virtual Learning Series (Arulmigu Kalasalingam College of Pharmacy, India)





(left to right) A/Prof Dr Mohd Zulkefeli Mat Jusoh, Dean, School of Pharmacy, Vilashini Saravanan, Amanda Tan Yee Mun and Prof Mallikarjuna Rao Pichika, Associate Dean, Research and Consultancy. Vilashini and Amanda won second place at the Malaysian Innovative Healthcare Symposium (MIHS) 2020 Big I Competition.



Top student Wong Xi Khai won the IMU Tun Zahir Merit Award.

New pathways, new programmes

The BPharm (Hons) re-accreditation visit by the Panel of Assessors took place in September and the programme was granted a full four-year accreditation. Alongside this well-established programme, new initiatives will ensure that SOP continues to offer students the best options in education.

Articulation pathways to Dundee for BSc (Hons) Pharm Chem. In 2020, IMU launched a selection of chemistry and life sciences articulation pathways from the Foundation in Science and BSc (Hons) Pharmaceutical Chemistry programmes. These pathways will take students to the School of Life Sciences biological and biomedical undergraduate programmes at the University of Dundee, UK, allowing them to graduate with a myriad of Dundee BSc and/or MSc degrees, including biological chemistry and drug discovery, biomedical sciences, molecular biology, pharmacology and physiological sciences.

Development of new programmes in digital health.

Healthcare and information technology (IT) will be ever more closely interlinked, creating a need for healthcare professionals who are comfortable in a digital environment, as well as IT specialists with a knowledge of healthcare. In 2020 we worked on developing two exciting new offerings that combined IT and healthcare knowledge.

The Bachelor in Digital Health (BDH) was granted IMU Senate approval, and documentation was submitted for MQA approval in October. The Master in Health Informatics and Analytics (MHIA) gained a five-year provisional accreditation by the MQA in August, and we submitted the programme to the Ministry of Higher Education (MoHE) for approval in October. IMU will be the first university in Malaysia to offer these innovative programmes.

Research

Our faculty as Principal Investigators secured RM3,410,000 in research funding, out of which RM1,394,860 came through external research grants supported by MoHE, the Malaysian Palm Oil Board and the Malaysia Toray Science Foundation.

The School published 148 Scopus-indexed articles in 2020, out of which 126 appeared in Q1/Q2 journals. The publications per full-time equivalent (FTE) was 2.55. Faculty members, as Principal Investigators, are currently guiding 20 postgraduate students (MSc/PhD) by research (Fig. 10).

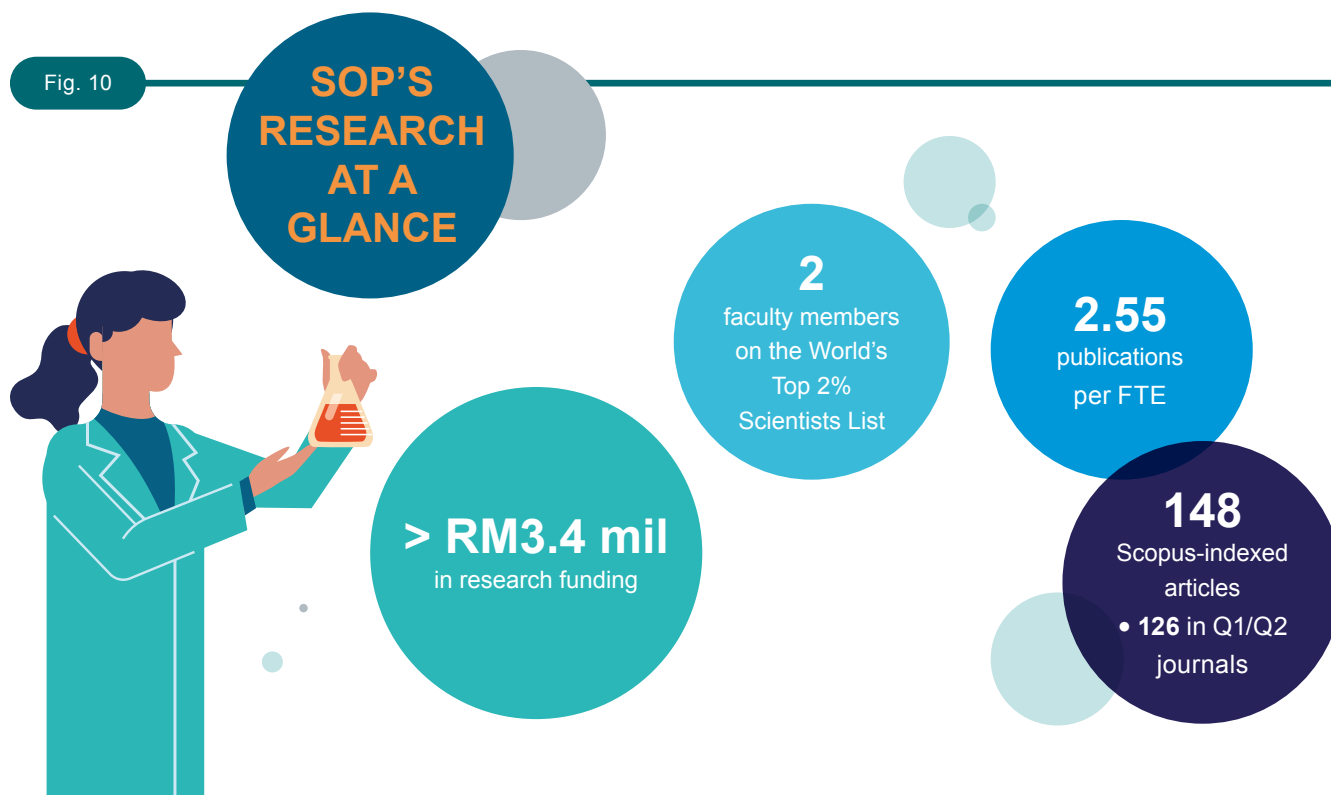
Two of our faculty members, Dr Hira Choudhury (Pharmaceutical Technology) and Dr Dinesh Kumar Chellappan (Life Sciences), were included in the World's Top 2%

Scientists list compiled by Stanford University, USA, and published by *PLOS Biology*.

Notable events

Pharmaceutical Chemistry Week 2020.

Initially planned as an on-campus event for April, this was held virtually on 3-4 September. The theme was "Chemistry for a Sustainable Planet" and, in keeping with previous Pharmaceutical Chemistry Weeks, the event sought to enrich students' chemistry education through expert sharing sessions, interactive demonstrations, and photo, video and poster contests. The event attracted 160 secondary school and pre-U students, and our collaborators were Institut Kimia Malaysia (IKM), Royal Society of Chemistry (RSC) Malaysia Local Section, American Chemical Society (ACS) Malaysia Chapter and IMU's Community Engagement Office.



Pharmacy Week 2020. This event (21-25 Sep) was organised in conjunction with World Pharmacists Day, with the theme “The Vital Role of Practising Pharmacists & Pharmaceutical Scientists in COVID-19 Pandemic”. The event, which featured student competitions and a webinar series, drew a total of 500 participants from six countries.

6th MyPSA National Pharmacy Debate Competition. This online event held on 8-11 October was a collaboration between the IMU Pharmacy Students’ Association (IPSA) and the Malaysian Pharmacy Students’ Association (MyPSA). The theme was “Fight till the Last Breath”, and a total of 11 teams

from nine public and private universities participated. International Islamic University Malaysia emerged as champions, while the runner-up was team QUEST 2 from Quest International University.

Moving forward

Our new programmes in digital health reflect a commitment to education that is relevant to the critically important space where healthcare meets technology. The launch of the BDH and MHIA will be a highlight for the coming year. We will also continue to explore new partnerships and pathways, as well as undertake research that expands the boundaries of knowledge in pharmacy.

“Graduates of our new programmes in digital health will possess competencies and special expertise in both IT and healthcare. This will enable them to meet the needs of the employment market in digital health as well as in other new sectors.”

– A/Prof Mohd Zulkefeli Mat Jusoh
Dean, School of Pharmacy.



SCHOOL OF HEALTH SCIENCES

We offer programmes related to allied health, with four divisions covering undergraduate courses in nutrition, dietetics, nursing, biomedical science and medical biotechnology, and a postgraduate course in diabetes management and education. We believe in inter-professional education, service learning and evidence-based practice. Irrespective of specialisation, all students work towards becoming passionate and committed allied health professionals who prioritise excellence in innovation and research, as well as laboratory and clinical practice.

2020 highlights

- Smooth transition to online learning environments
- New partnerships with Deakin University and extended partnership with the University of Strathclyde to offer postgraduate programmes
- Revised curriculum for BSc (Hons) in Medical Biotechnology
- Successful re-accreditation of Bachelor in Nursing (Hons), and submission of proposal to MQA for an ODL Nursing degree
- Collaboration with SEAMEO RECFON for healthy school cafeterias and with SEAMEO SEN for research
- Industry collaboration for students' online practicum and for input on improving curriculum
- 34 papers and one book chapter; over RM1.37 million in total research funding
- Biomedical Science students' publication on COVID-19 in the *British Journal of Biomedical Science*, co-authored with lecturers

PROGRAMMES



Bachelor of Science
(Hons) in Dietetics
with Nutrition



Bachelor of Science
(Hons) in Nutrition



Bachelor of Science
(Hons) in Biomedical
Science



Bachelor of Science
(Hons) in Medical
Biotechnology



Bachelor of
Nursing (Hons)



Postgraduate Diploma in
Diabetes Management
and Education

COVID-19

As per University-wide guidelines, all Divisions of the School of Health Sciences (SOHS) implemented rapid conversion of face-to-face learning and assessment to online modes of delivery and other alternatives (Fig. 11).

In an early initiative, we organised the first of IMU's Live Talk Series with the IMU Marketing Department. Over five sessions (24 Apr-20 May), we shared with students and the public the relevance of the health sciences in a pandemic (Fig. 12).

Faculty development included an online workshop on setting higher order thinking questions to improve the quality of

examination questions (17 Aug). The workshop was facilitated by Prof Er Hui Meng, Dr Wong Pei Se, Prof Winnie Chee, Prof Chin Beek Yoke and A/Prof Anna Ling Pick Kiong.

On SOHS Enrolment Day (21 Sep), we welcomed our 1/20 cohorts in an event that was held virtually on Zoom.

Across the Divisions

Online Forum with Graduate Preparedness Advisory Committee (GPAC) Members.

Since its inception in 2018 following the University's "Linking-U with Industry" initiative, SOHS has held yearly in-person Forums with our Industry Advisory Committee Members where students from all five undergraduate

Fig. 11

New modes for a new normal

Face-to-face teaching and learning	Online and other alternatives
Plenaries	→ Recorded lectures, online forum/small group/flipped classroom synchronous
Tutorials/workshops/ Problem-based learning	→ Materials uploaded on e-learn portal with discussions held on group chats
Laboratory skills	→ Converted to Dry Laboratory
Community	→ Converted to virtual community with webinar series
Research	→ Modified to non-laboratory based; face-to-face in research laboratories per Institute for Research, Development and Innovation (IRDI) guidelines
Early Semester clinical postings	→ Skills-based theory topics brought forward
Final Year clinical postings	→ Case-based learning online; essential skills at Clinical Skills and Simulation Centre following SOP; clinical placements (Dietetics) at Hospital Tuanku Ja'afar; online counselling services provided by students in partnership with Naluri, a digital health company

Fig. 12

IMU Live Talk Series with Experts from SOHS

Prof Anthony Rhodes

"The Important Role Played by Biomedical Scientists During a Pandemic"

Dr Lim Swee Geok

"The Importance of Nursing Care During a Pandemic"

Prof Winnie Chee

"Do We Need Dietitians and Nutritionists as Part of the COVID-19 Response?"

Prof Chin Beek Yoke

"The Reliance on Medical Biotechnology During a Pandemic"

Dr Tan Ming Yeong

"Diabetes Educators and the COVID-19 Pandemic"

programmes and the post-registration nursing programme are treated to presentations on common themes concerning skills and competencies required to meet the emergent advances and real-world challenges of their respective professions. This year's Forum was

held virtually due to COVID-19 restrictions. Speakers included some of our own alumni, as well as authorities in the fields of biotechnology, dietetics, nutrition, biomedical science and nursing (Fig. 13).

Fig. 13

GPAC Online Forum 2020: notable topics and speakers

This year the Forum comprised sessions tailored to the individual SOHS programmes. Besides the notable speakers listed, Medical Biotechnology alumni Errina Tendean and Aw Yong Poi Yi also shared their experiences.

- Medical Laboratory Perspective – Career Opportunities and Expectations on Graduates
Goh Mun Hon (Principal Medical Lab Scientist, Institut Jantung Negara) and Noor Zaitulakma Md Zain (Microbiologist, Institut Jantung Negara)
- The Career Prospective and Post-COVID Opportunities in Biotechnology
Jay Padasian (Executive Director and Healthcare Industry Techno-Commercial Advisor, AP Bioresources)
- Meeting the Nursing Challenges and Being Resilient During the COVID-19 Pandemic Outbreak
Prof Claudia Lai (Honorary Professor, School of Nursing, The Hong Kong Polytechnic University)
- Have You Got What It Takes to Succeed? A Perspective from the F&B Industry
Wong Mei Ching (Group Corporate Nutrition Manager, Nestle Products)
- Entrepreneurship, Health and Technology Perspective
Dato' Chevy Beh (CEO, BookDoc)
- Competencies – What's Best to Focus On?
Datin Farah Di Ba Khan (Manager, Lifestyle Modification Centre, Prince Court Medical Centre)
- COVID-19 Impact Assessment and Hospitals' Management
Ng Kim Choon Elaine (Group Head of Nursing, IHH Healthcare)

IMU Science Discovery Challenge 2020.

This annual event for pre-university and secondary school students aims to foster an interest in the sciences. The preliminary round of an online qualifying quiz drew 4,000 participants from Malaysia and abroad (15 Jun-16 Aug). The Grand Finale was conducted virtually on 29 August.

Supporting other IMU events and

departments. At IMU's Virtual Open Day (8-9 Jul), Prof Chin Beek Yoke and Prof Anthony Rhodes delivered live public talks via Zoom. At the IMU Learning Resources Festival (3-5 Nov), SOHS contributed four projects, including one from Biomedical Science titled "Demonstration Video for Haematology Techniques: Clear, Concise, Convenient" which won a silver medal. We also conducted workshops for Foundation in Science (FiS) students (Fig. 14).

Nutrition and Dietetics (N&D)

New Partner School. Deakin University, Australia, became our latest Partner School with the signing of a five-year articulation agreement (2022-2026) for transfers of IMU BSc (Hons) in Nutrition students to the Bachelor of Nutrition Science programme at Deakin.

Visiting faculty. N&D welcomed two visiting faculty who shared their knowledge with the Division and delivered talks at the IRDI Translational Research Seminar Series:

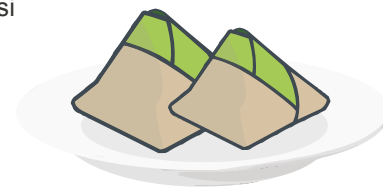
- **Prof Janet Cade, University of Leeds, UK** (31 Jan-5 Feb). Prof Cade, Head of the Nutritional Epidemiology Group at Leeds, spoke on "Harnessing Epidemiological Evidence for Diet-Disease Relationships – Learnings from the UK Women's Cohort Study (UKWCS, 1995-2015)."

Fig. 14

"Look, See, Feel" Workshops for Foundation in Science students (FiS120)

- **Medical Biotechnology (27 Aug)**

Themed "CSI: Who Ate My Nasi Lemak?" the event included hands-on activities such as micropipette handling, PCR, gel loading and a demo on electrophoresis.



- **Nutrition and Dietetics (7 Oct)**

An online quiz session focused on knowledge about food and nutrition, as well as the role of nutritionists and dietitians.



- **Prof Connie Weaver, Purdue University, USA** (14-22 Feb). Prof Weaver, Distinguished Professor Emerita at Purdue University, delivered two talks: "Calcium, Gut Microbiota and Bone Health" and "Personalised Nutrition in Prevention of Chronic Disease."

Collaboration with SEAMEO RECFON and SEAMEO SEN. Faculty members Mary Easaw and Dr Ng Ai Kah served as resource persons

and guest speakers at the Post Graduate Training on Food Safety event during the Southeast Asian Ministers of Education Organization Regional Centre for Food and Nutrition (SEAMEO RECFON) meeting in Jakarta, Indonesia (2-13 Mar). They later participated in the Food Safety Course Development for ASEAN project, which was aimed at developing guidelines for school canteen operators with a focus on hygiene and healthy eating (Mar-Dec).

Another research collaboration, headed by the SEAMEO Regional Centre for Special Educational Needs (SEAMEO SEN), was initiated in January – Advocating Proper Nutrition in Special Education Schools for Children with ADHD and Down's Syndrome in Southeast Asia. IMU researchers

Dr Chen Seong Ting, Dr Ong Shu Hwa and Dr Yang Wai Yew were responsible for the methodology. Pilot testing was scheduled to begin in July, but research activities were interrupted by the pandemic.

Partnership with industry. From May to December, we carried out a Patient Education Project with AstraZeneca to improve patient care and raise awareness about nutrition and other medical topics.

Food Handlers' Course (Latihan Pengendali Makanan). Our registered trainers Dr Yang Wai Yew and Dr Ng Ai Kah conducted 11 training sessions for 87 participants comprising café operators, officers from the 1st Battalion, Royal Malay Regiment, and Nestlé marketing staff (Jan-Oct).



Webinars. On 1 October the N&D Division's Centre for Transformative Nutrition and Health (CTNH) hosted a webinar with the Agency for Science, Technology and Research: ASEAN Nutrition and Food Science Network (A*STAR: ANFSN). Titled "Can Sustainable Nutrition Be Healthy and Affordable?", the webinar was moderated by Dr Sangeetha Shyam and Dr Megan Choong, and attracted over 290 participants. The speakers were Prof Dr Paul Teng (Managing Director & Dean, National Institute of Education, Nanyang Technological University Singapore), A/Prof Dr Yasmin Ooi (Nutrition Advisor to National Agricultural and Food Industry Advisory Board Malaysia), Ashok Vasudevan (Co-founder and CEO of Preferred Brands International), and Azran Osman Rani (CEO and Co-founder of Naluri Sdn Bhd).

CTNH also organised a free webinar titled "Food Service in the Challenging Times of COVID-19 Pandemic" (3 Oct), to address challenges related to audits in food service and how to better equip food service. Speakers were N&D Senior Lecturer Mary Easaw and Dr K. Ragunathan, CEO of Quality Associates Sdn Bhd.

Student activities. With guidance from Dietitian cum Chef (and N&D alumnus) Leonard Yap Vern Thien, students of Project Aliquot's Supper Club held a few fundraising events (Jan-Mar) that showcased delicious and healthy meals.

Applied Biomedical Science and Biotechnology (ABSB)

Curriculum, re-accreditation and collaborations. In 2020, our BSc (Hons) in Medical Biotechnology completed its third cycle of a five-year curriculum review to meet competencies sought by industry and enhance

"Prepare your mindset to embrace change and uncertainties in your quest for learning."

– Dr Yang Wai Yew
Nutrition and Dietetics Division,
School of Health Sciences.



employability. The revised curriculum was approved by the Ministry of Higher Education (MoHE) on 10 September, and is effective from the MB120 cohort onwards.

For our BSc (Hons) in Biomedical Science, we submitted documentation for re-accreditation to the Institute of Biomedical Science (IBMS), UK. IBMS is the leading professional body for scientists and students in biomedical science.

We renewed our current agreement with the University of Newcastle (UoN), Australia, by signing a five-year articulation agreement (2020-2024) for transfers of IMU BSc (Hons) Medical Biotechnology students to UoN's Bachelor of Biotechnology programme.

With the University of Strathclyde (UoS), UK, we extended our current partnership under the BSc (Hons) Biomedical Science programme, whereby graduates can gain direct entry into UoS' MSc Forensic Science in a 3+1 articulation pathway. Similarly, BSc (Hons) Medical Biotechnology graduates can also pursue the MSc Forensic Science and MSc Industrial Biotechnology degrees at UoS.

Joint faculty-student article on COVID-19 published in the *British Journal of Biomedical Science*. “Understanding the Dynamics of COVID-19; Implications for Therapeutic Intervention, Vaccine Development and Movement Control” was

written by Biomedical Science students Tan Hui Zhe, Thang Wen Jun, Ter Hui Chee and Wan Muhammad Shafiq Wan Adnan under the guidance of Dr Shamala Salvamani and Prof Anthony Rhodes (see feature on “IMU and the War Against COVID-19”).

Biomedical Science Day. This annual public event (10 Mar) is coordinated by the IMU Society of Biomedical Science (ISBS). This year's theme – “The Dead Can Lie” – was forensic science. Participants, including school students, were tasked with solving a case based on a mock crime scene with assistance from booths highlighting forensic techniques through games and puzzles. The event concluded with a talk on “The



Future of Forensic Science” by Dr Pramod G. Bagali.

Medical Biotechnology Day. This year’s event (24 Oct) was themed “The Role of Medical Biotechnology in the Era of the Pandemic”. The highlight was the e-poster presentations by FiS students on the everyday applications and advancement of medical biotechnology. A total of 205 students in 41 groups participated, with all entries showing great teamwork and collaboration. Guest speaker Jay Padasian of AP Bioresources shared valuable insights.

Virtual Crime Scene Investigation Workshop. About 70 BM118 and MB118

(Semester 5) students participated in this inaugural virtual CSI workshop (4 Sep) by Dr Lim Chooi Ling in collaboration with Dr Vinoth Kumar Raman from Witty Charman CoTS Sdn Bhd. Using online software, students worked in teams to design virtual crime scenes, which were then “investigated” by other teams.

Animal Handling Workshop. This workshop (11 Mar) provided Medical Biotechnology students with a basic knowledge of laboratory animal handling techniques and maintenance, as well as the ethics and regulations for the use of animals in research. The workshop included hands-on training on animal restraining, labelling, blood collection and dissection using laboratory mice and rats.



Medical Biotechnology students at the Animal Handling Workshop in March.



The workshop for Tenby International School students.

Workshop for Tenby International School students. This hands-on workshop on “Real-world Applications of Molecular Biology” (2 Mar) was led by Dr Kok Yih Yih. Year-13 students explored basic molecular biology techniques and gel electrophoresis in a laboratory.

Nursing

Re-accreditation and new ODL option. The re-accreditation visit for Bachelor of Nursing (Hons) concluded with the Panel of Assessors noting our team’s excellent effort in preparing the documents, with the standard and quality

aligned with Standard Criteria Malaysian Nursing Board (MNB) 2018.

We also worked on creating an open and distance learning (ODL) option for the Bachelor of Nursing (Hons) programme, for working nurses. The provisional accreditation documentation was submitted to the MQA in November, and is on track for a first intake in September 2021.

Live virtual session by alumni. Sasha Pereira, a Nursing alumna from NU107, presented a live virtual session on “Selfcare

for Healthcare: Thriving during COVID-19 & Beyond”, with three other panellists (10 Aug). Pereira has been a paediatric oncology nurse at NUH Singapore for over eight years and is currently working in the Paediatric Bone & Marrow Transplant Unit.

Student activities. Tang Mei Kwei, a student from NS218, participated in Universitas Gadjah Mada’s Summer Online Course on “Health 4.0: Managements and Technologies for Improving Health Services in Developing Countries” (26 Oct-20 Nov).

Postgraduate Diploma in Diabetes Management and Education (PGDME)

PGDME curriculum review. The PGDME received approval from MoHE after the full accreditation cycle in November 2019. To further improve its quality and address issues raised by the Panel of Assessors, we conducted an intensive curriculum review (Mar-Nov 2020). The complete documentation and self-review report were then sent to external reviewers.

Live Webinar. PGDME hosted a live webinar (17 Oct) titled “Optimising Glucose Control with Medical Management and Education – What Works and What Does Not? Insights from a Multi-Disciplinary Team.” The aim was to gain the perspective of an endocrinologist, a credentialed diabetes nurse educator and a clinical pharmacist, namely: Prof Dato Dr Mafauzy Mohamed (Professor of Medicine and Senior Consultant Endocrinologist, Universiti Sains Malaysia), Michelle Robins (Credentialed Diabetes Educator and Diabetes Nurse Practitioner, Australia) and Dr Navin Kumar Loganadan (Clinical Pharmacist (Diabetes), Diabetes Medication Therapy Adherence Clinic, Putrajaya Hospital).

Dr Lee Ching Li, PGDME Programme Director, moderated the webinar.

Research

In 2020 SOHS published 34 papers (74% of which were in Tier 1 and Tier 2 journals) and one book chapter, and secured over RM1.37 million in total research funding (internal and external research grants, as well as contract research).

The N&D Division published nine papers. Under the Fundamental Research Grant Scheme (FRGS), Dr Tan Seok Shin as Co-Investigator was awarded RM148,400 for a project titled “Are Palm Oil Related Dietary Biomarkers Associated with Obesity and Cardiovascular Risks Among Adult Population? – A Prospective Cohort Study,” 2020-2022.

“The biggest learning was on the need to be flexible and adapt quickly to change.”

– Dr Lim Swee Geok
Nursing Division, School of Health Sciences.



Prof Winnie Chee, Dr Harvinder Kaur, Dr Lee Ching Li and Dr Sangeetha Shyam also secured contract research worth RM394,000 from Abbott R&D, Singapore for a project entitled “A Randomized Controlled Trial to Determine the Effects of Diabetes-Specific Formula on Glycemic Variability in Individuals with Type 2 Diabetes.”

At the ABSB Division, there were 18 publications and one book chapter. Grants secured included:

- **Dr Wong Chiew Yen:** YPASM Research Grant 2020, “Phytoremediation Potential of Antarctic Microalgae on Diesel Hydrocarbons,” 2020-2023. RM150,000 (Principal Investigator).

- **Dr Wong Chiew Yen:** Shibaura Institute of Technology Research Grant, Japan, “Autonomous Antarctic Algae Diesel Phytoremediation Reactor System for Improving Quality of Life and Environment for Communities in Antarctic Region,” 2020-2021. 500,000 Yen (Co-Investigator).

- **Dr Premdass Ramdas:** FRGS Research Grant 2020, “Comparative Transcriptomic and Proteomic Analyses of Three-Dimensional Multicellular Breast Tumour Spheroids Following Treatment with Tocotrienols,” 2020-2023. RM126,800 (Principal Investigator).

The Nursing Division published seven papers in 2020.

Moving forward

In 2021 SOHS will be rolling out revised curricula for Biomedical Science and PGDME that will expand experiential and real-world learning. We will continue to work with Partner Schools and industry partners to produce work-ready graduates. We also aim to find new ways for students to acquire a global perspective. Such opportunities will now likely be in the virtual space as much as the physical, and we are confident that our students will be ready to reap maximum benefits from an increasingly blended approach to education.



“Nursing personnel constitute the largest proportion of patient caregivers in a hospital. Never lose sight of why you became a nurse in the first place. Keep your compassion in your heart and in your hands. Never stop learning as you are the most effective and greatest resource for each patient.”

– Dr Lim Swee Geok
Nursing Division, School of Health Sciences.

CENTRE FOR COMPLEMENTARY AND ALTERNATIVE MEDICINE

Our aim in the field of complementary and alternative medicine is to deliver world-class education, service and research. At the undergraduate level, our programmes in Chiropractic and Chinese Medicine meet regional and international standards as well as requirements for licensure. At the graduate level, our MSc in Acupuncture offers healthcare professionals an advanced programme that broadens their scope of practice.

2020 highlights

- Successful transfer of clinical-competency-based programmes to an online environment
- MoU with the New York Medical Group to establish four scholarships for students to pursue a Chiropractic elective in Hong Kong
- Compliance Evaluation and Curriculum Review Exercise completed for Chinese Medicine and Chiropractic, with both receiving recommendations for renewal of accreditation
- World Spine Day celebrations online

COVID-19

All three programmes under the Centre for Complementary and Alternative Medicine (CCAM) are clinical-competency-based, with teaching and learning (T&L) involving hands-on learning of skills with simulated patients as well as real patients. In this regard, the Movement Control Orders of 2020 had a marked effect on T&L at CCAM. Clinical skills training was affected as students were not allowed back on campus. Clinical practice for Chinese Medicine and Chiropractic was also affected due to the temporary closure of the healthcare clinic and centres.

When final-year students were allowed to continue with clinical practice, we introduced

PROGRAMMES



Bachelor of Science
(Hons) in Chinese
Medicine



Bachelor of Science
(Hons) in Chiropractic



Master of Science
in Acupuncture

strict safety guidelines – our own as well as those required by the authorities. To maintain social distancing, we reduced the number of active beds at clinics for patient management. We expanded the Clinical Skills and Simulation Centre by opening up smaller rooms and converting them into a single large space. When the opportunity arose, we provided additional clinical skills training sessions.

The clinical hours training requirement for graduation was reduced by 30 percent, as endorsed by the MQA, and all semesters were extended due to temporary closure of the University.

In the Master of Science in Acupuncture programme, clinical semesters were rearranged to the following year. Most of the

students pursuing this degree are frontliners in government hospitals and were unable to take time off to attend clinical sessions at IMU.

Meanwhile, the theory-based components of all programmes were delivered online either synchronously or asynchronously. Assessments were similarly conducted online, in both open- and closed-book formats.

Despite the challenges, the academic staff rallied to apply innovative methods to deliver the curriculum with minimum disruption to students' progress. In one method used in the Chinese Medicine and MSc in Acupuncture programmes, academic staff developed innovative "home practical kits" that were sent to students at home. These were used to conduct practical classes online. We learnt





that some components of the curriculum could be effectively delivered remotely, and this approach encouraged students to be independent learners.

Our programmes were also flexible in terms of adjustments to the academic calendar and timetables. We incorporated extended working hours and extra clinic shifts into schedules to catch up on T&L time lost due to the lockdown.

Other key developments

This year, apart from responding to the pandemic, we focused on the expansion of physical facilities for clinical and practical training of students in our Chiropractic, Chinese Medicine and MSc in Acupuncture programmes. We also worked on enhancing the delivery of the curriculum to ensure that the Centre continued to produce high-quality, competent and work-ready graduates.

Compliance Evaluation and Curriculum Review

In 2020, two of our programmes, Chinese Medicine and Chiropractic, underwent a Compliance Evaluation and Curriculum Review Exercise with a panel of external and internal assessors. The programmes were commended by the assessors for overcoming the numerous difficulties brought about by the pandemic, and for delivering the curriculum without significantly disrupting students' progress. Both programmes received recommendations for renewal of accreditation.

World Spine Day celebrations

In conjunction with World Spine Day 2020, the Chiropractic Division celebrated the week virtually with the theme "Back on Track", to encourage members of the public to get back on track and restore their spinal health after long periods of inactivity due to the MCO.



The Chiropractic Division celebrated World Spine Day 2020 with the theme “Back on Track”.

Scholarships for electives in Hong Kong.

One of CCAM's highlights in 2020 was the signing of a Memorandum of Understanding (MoU) between IMU and the New York Medical Group, under which four scholarships would be offered to final-year Chiropractic students every year to enable them to undertake a four-week elective in Hong Kong.

Moving forward

Plans for 2021 include expanding clinical services to serve the community, and opening another chiropractic centre that will provide additional practice opportunities for interns. We also hope to add more external health centres where our Chinese Medicine and MSc in Acupuncture students can undergo clinical training.

There is a possibility that the MQA will introduce new standards for courses such as ours in 2021. We anticipate, for example, that the undergraduate degree programme in traditional and complementary medicine will be standardised at five years across all courses and universities. We will be ready in the event that this occurs.



“The challenges in 2020 were unexpected and never before experienced. We admire the resilience shown by both staff and students.”

– A/Prof Dr Ranjit De Alwis
Director, Centre for Complementary
and Alternative Medicine.

SCHOOL OF POSTGRADUATE STUDIES

The School of Postgraduate Studies supports, administers and coordinates the University's higher degrees (Masters and PhD) by research, as well as its taught Masters programmes. We aim to deliver a postgraduate experience that supports students in their intellectual pursuits, builds IMU as an academic centre of excellence, and nurtures a commitment to improving communities and human life.

2020 highlights

- Shortened one-year taught Masters programmes as well as open and distance learning (ODL) modes introduced for three Masters programmes
- Inaugural intake for MSc in Analytical and Pharmaceutical Chemistry ODL
- Three programmes renewed by MoHE for five years
- 16% overall increase in total new student numbers
- 164% increase in Scopus-indexed publications (from 28 in 2019 to 74 in 2020)
- Adjustments successfully made to programmes to ensure effective online delivery

PROGRAMMES



PhD in Medical & Health Sciences



MSc in Public Health



MSc in Analytical & Pharmaceutical Chemistry



MSc in Medical & Health Sciences



MSc in Molecular Medicine



Master in Pharmacy Practice



Health Professions Education (PGCert / PGDip / Master)



Business Administration in Healthcare Management (PGCert / PGDip / Master)

COVID-19

To comply with restrictions resulting from the pandemic, most learning activities in the programmes coordinated by the School of Postgraduate Studies (SOPGS) in 2020 were delivered synchronously online. Classes were recorded for students, and certain assignments were revised and adapted for effective online delivery.

Students whose research projects were affected by the Movement Control Orders were offered deferment without penalty. Research supervisors advised students conducting field and clinical studies on how to modify methods of data collection in order to comply with social distancing. Students working in hospitals were also given the opportunity to defer their studies.



Highlights of the year

2020 certainly brought unexpected challenges, but it was also a year that saw many highlights at SOPGS.

There was an overall increase of approximately 16 percent in total new student numbers as compared to 2019.

To enhance flexibility and enable students to graduate faster, we introduced one-year taught Masters programmes and open and distance learning (ODL) modes for three of our existing programmes: MSc Molecular Medicine, MSc Analytical and Pharmaceutical Chemistry and MSc Public Health.

The MSc Molecular Medicine ODL mode obtained full accreditation without conditions. The MSc in Public Health also completed full accreditation for its ODL mode, and in September we welcomed the inaugural intake of MSc in Analytical and Pharmaceutical Chemistry ODL students.

IMU's three programmes in health professions education were renewed by the Ministry of Higher Education (MoHE) for five years effective from September 2020: the Postgraduate Certificate in Health Professions Education, the Postgraduate Diploma in Health Professions Education (PGDHPE), and the Master in Health Professions Education (MHPE). The MHPE was also successfully registered in the Malaysian Qualifications Register (MQR). These achievements were the result of efforts by the IMU Centre for Education (ICE), which manages these programmes.

The Compliance Evaluation and Programme Review for the MSc and PhD in Medical and Health Sciences were completed in November.

2020 graduates of programmes coordinated by SOPGS

Programme	Number of graduates
PhD in Medical and Health Sciences	6
MSc in Medical and Health Sciences	10
MSc in Public Health	3
MSc in Molecular Medicine	3
MSc in Analytical and Pharmaceutical Chemistry	1
Master in Pharmacy Practice	6
Postgraduate Certificate in Health Professions Education	5
Master in Health Professions Education	1
Master of Business Administration in Healthcare Management	1

Research

There was a marked increase in the quantity and quality of publications this year. SOPGS produced 74 Scopus-indexed articles in 2020, compared to 28 in 2019. This amounted to a 164 percent increase in the number of publications. Of the papers published, 93.24 percent were in Tier 1 and Tier 2 journals.

Moving forward

In the coming year SOPGS will continue to enhance the ODL mode of delivery and offer more programmes under this option. We will also continue exploring the possibility of offering selected postgraduate modules as electives/selectives to students from the undergraduate programmes. The credits gained from these modules can then be transferred to the respective postgraduate programmes. The idea is to give our undergraduate students a head start as well as cultivate their interest in our postgraduate programmes.

“It is crucial to respond rapidly and boldly to the new scenario.”

– A/Prof Tan Eng Lai
Dean, School of Postgraduate Studies.



2020 PhD and MSc Graduates and Thesis Titles

PhD in Medical and Health Sciences

- | | |
|----------------------------|---|
| 1. Abhishek Parolia | Effectiveness of chitosan-flavonoids (propolis extract) nanoformulations against <i>Enterococcus faecalis</i> biofilm in the root canal – Ex vivo study |
| 2. Mangala Kumari | Neuroprotective mechanisms of oral supplementation of alpha- or gamma-tocotrienol in a rat model of Parkinson's disease |
| 3. Masnah Banu Kamal | Synthesis of new eugenol derivatives and evaluation of their antibacterial activity against multidrug resistance <i>Acinetobacter baumannii</i> |
| 4. Sajesh Kalkandi Veettil | Comparative efficacy, safety and cost-effectiveness of chemopreventive agents for colorectal cancer |
| 5. Dang Nguk Ling | Assessing the effects of heavy metals on oxidative stress and metabolomic profiles of microalgae isolated from Signy Island, Antarctica |
| 6. Wong Ying Pei | Production of edible human rotavirus VP6- subunits in <i>Agrobacterium</i> -mediated transformed <i>Centella asiatica</i> callus |

MSc in Medical and Health Sciences

- | | |
|-------------------------------------|---|
| 1. Amala a/p Muniandy | Hyperbranched poly(glycerol-esteramide) as drug carrier for lovastatin solid dispersion: synthesis, formulation and in vitro studies |
| 2. Aminah Mazyin Mohamed Ariff | Prospective observational study of clinical decision support system (CDSS) in preventing drug related events (DRE) in a selected hospital in Malaysia |
| 3. Angeline Shak Tzeyung | Development and evaluation of rotigotine-loaded chitosan nanoparticles for the treatment of Parkinson's disease by intranasal route |
| 4. Geetha a/p Maniam | Preparation, characterisation and anticancer effects of gemcitabine-tocotrienols entrapped niosomes in pancreatic cancer |
| 5. Jeremy Yap Kean Yi | A gene trap mutagenesis approach for the identification of NLRP1 inflammasome activation targets mediating amyloid- β -induced neuronal pyroptosis |
| 6. Wan Jun Kit | Effect of microplastic and nanoplastic on the toxicity of copper in microalgae |
| 7. Muhammad Rizdwan Mohd Abd Rahman | Evaluation of the mechanism of action of lactoferricin B peptide in the inhibition of breast cancer |
| 8. Looi Chin King | Mechanistic basis of tumour evasion from cytotoxic T cell (CTL) surveillance in pancreatic cancer |
| 9. Manprit Kaur a/p Gucharan Singh | <i>Ceiba pentandra</i> (Kepok) gum-based polyelectrolyte complexes with chitosan and polyvinylpyrrolidone as potential carrier materials for controlled drug delivery |
| 10. Yeo Bann Siang | Response of microalgae to repeated exposure to glufosinate ammonium and temperature stress |

EMBRACING TECHNOLOGY IN EDUCATION

As we continue to face the challenges of the COVID-19 pandemic, we take a look at how even in the direst circumstances, we can still find silver linings. At IMU, it was no different. We saw great changes in the way education was delivered, as faculty and students embraced technology that has resulted in a more mindful and efficient learning environment.



Technology in teaching and learning has long played a role in making lessons and resources more available and accessible through online platforms. But this year (2020), circumstances have thrust technology into a central role and earned it the essential buy-in from faculty and students who had to adopt new platforms and swap face-to-face lectures for screen time.

CLOSING THE DIGITAL GAP

“The pandemic has driven the faculty to be more innovative in the delivery of teaching and learning activities. It has sparked interest in education research, which is important for IMU to gain the competitive edge in health professions education,” says Prof Er Hui Meng, Dean, Teaching and Learning.

In order to support the faculty to move lessons online, the Teaching and Learning team prepared a number of **faculty guidelines on online teaching and learning**, ranging from online lectures, small group teaching, clinical and communication skills training, and virtual laboratory practical sessions, to online open

book assessments and the conduct of online objective-structured clinical examinations (OSCE). At the same time, **faculty training and consultation clinics** were held. These initiatives were aimed at upskilling faculty in a short period of time to deliver quality online teaching to benefit the student experience.

“Within months, the overall quality of online teaching improved tremendously as a result of these efforts alongside other interventions by the school management and the hard work of the faculty. This is evident from the student evaluation of online teaching conducted by the IMU Centre for Education (ICE), as well as feedback from the Student Representative Council,” says Prof Er.

The Teaching and Learning team worked closely with all programmes to ensure that teaching, learning and assessment activities were designed and conducted according to sound education principles and MQA guidelines. In fact, a number of academic programmes were **successfully accredited (provisional and full accreditation)** in 2020.

There was an increased amount of **scholarship** in the area of education research, and subsequent publications in peer-reviewed journals. “Many faculty members have been invited to share their ideas and experience at local and international webinars. This has enhanced IMU’s reputation in health professions education locally and abroad,” says Prof Er.

With this year’s experiences tucked under their belts, ICE plans on developing a learning analytics platform that supports personalised learning for students. With this, students will be able to monitor their own learning progress and access timely feedback for improvement. It will also help faculty to identify the gaps



The IMU Family Medicine Postgraduate OSCE Preparatory Course was carried out online.

in teaching and learning so that appropriate intervention can be made promptly. Other plans include the development of simulation-based skills training and further enhancement of assessment practices. As Prof Er says: “Every difficult situation is an opportunity for learning.”

EDUCATION: EVALUATION AND EVOLUTION

The **IMU Centre for Education (ICE)** has three primary responsibilities – it manages faculty development activities, conducts university-wide evaluation of modules, faculty and learning environments as well as runs postgraduate programmes in health professions education.

The first cohort of the **Master of Health Professions Education (MHPE)** graduated in February and the Ministry of Higher Education has renewed the approval to run the programme for the next five years effective 2 September 2020. The MHPE has been successfully registered in the Malaysian Qualifications Register (MQR).

The Centre has also successfully accredited the **Postgraduate Certificate in Health Professions Education (PGCHPE)** for the next five years. This has led to the accreditation of the Open and Distance Learning PGCHPE which will commence in early 2021.

ICE also launched the **Live Evaluation on Online Lectures** in June to obtain immediate feedback on online asynchronous and synchronous lectures. The evaluation – using a five-point Likert scale ranging from strongly dissatisfied (1) to strongly satisfied (5) – provided opportunities for students to give feedback immediately after a lecture. Each lecture was rated based on clear learning



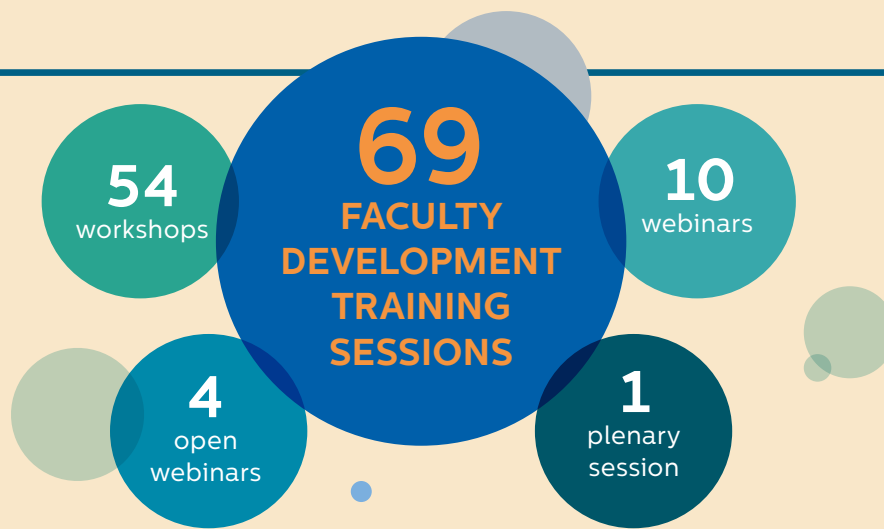
Delegates of the Ottawa Conference 2020 participated both physically and virtually.

outcomes, explanation on points in a logical and clear manner, inclusion of interactive activities in the lecture, availability of summary of the key points at the end of the lecture and overall satisfaction of the online delivery. Recent feedback showed that 96 percent of online lectures achieved an overall satisfaction rating of more than four.

Earlier in the year, the team successfully organised the **Ottawa Conference 2020** which was held from 29 February to 4 March 2020 at the Kuala Lumpur Convention Centre, in partnership with the Association for Medical Education in Europe (AMEE) and supported by the Malaysia Convention & Exhibition Bureau (MyCEB). The conference, which was officiated by Tan Sri Datuk Dr Noor Hisham Abdullah, Director-General of Health, Ministry of Health Malaysia, provided a platform for healthcare professions educationists to network and share ideas on current and future directions. This year's theme was “Assessment of Health Professionals and Evaluation of Programmes: Best Practices and Future Development”, and renowned keynote

Faculty development

In 2020, ICE organised 69 faculty development training sessions. Nine were conducted face-to-face at the beginning of the year prior to the MCO while 60 were conducted online. Out of these 69 activities, there were 54 workshops, 10 webinars, four open webinars (open to external participants) and one plenary session.



speakers such as Ronald Harden, Olle ten Cate, Tim Wilkinson, Cees van der Vleuten and many others challenged delegates and stimulated new ways of thinking about assessment and evaluation. A total of 1,186 delegates participated both physically and online (by means of live streaming, Zoom and pre-recording). Two awards were presented: the Ian Hart Award for Innovation in Medical Education which was awarded to Jason R. Frank of the Royal College of Physicians and Surgeons of Canada; and the IMU Ronald Harden Innovation in Medical Education (RHIME), awarded to a team of researchers from Laurentian University, Canada.

"In moving forward, we will need to make decisions about how teaching will occur when

(or if) the pandemic is controlled. We expect that a blended model will be the primary method of delivery," says Prof Ian Wilson, Director of ICE.

"We also expect that there will be opportunities in developing online and distance health professions education programmes much more extensively. We now have the skills and expertise to be able to implement these programmes," he adds.

AT THE HEART OF LEARNING RESOURCES

At the **Learning Resources Centre**, uptake of technology was central to the year's activities for the Library, Medical Museum and eLearning teams.

"The pandemic has driven the faculty to be more innovative in the delivery of teaching and learning activities. It has sparked interest in education research, which is important for IMU to gain the competitive edge in health professions education."

— Prof Er Hui Meng
Dean, Teaching and Learning.

“As both the faculty and students were not able to be physically on campus from the middle of March, the staff went beyond their usual working space and capacity to organise online sessions. It was good to see that the Centre took additional steps in facilitating webinars and online sessions,” says A/Prof Dr Nilesh Kumar Mitra, Director of Learning Resources.

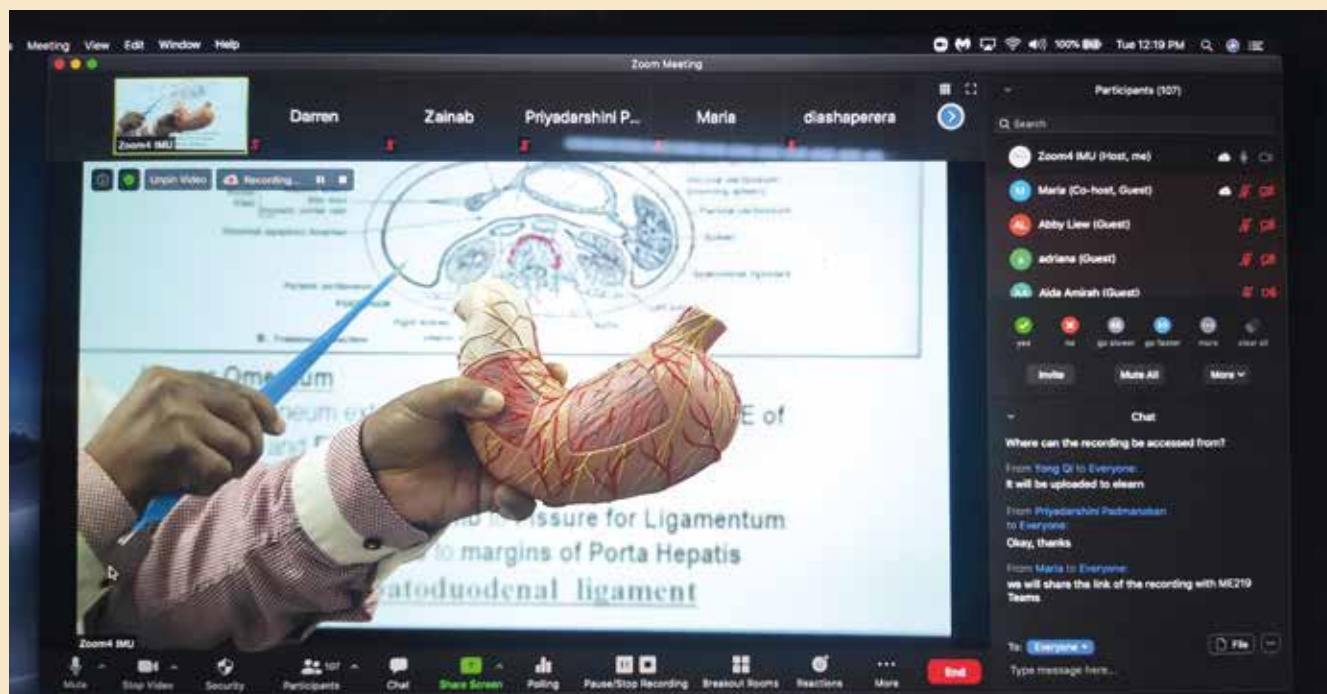
The Centre held an inter-institutional online forum for **Teaching, Learning and Assessment in Health Professions Education (National Webinar)** on 20 March and a webinar on **Teaching, Learning and Assessment Preparedness for Online and Remote Learning for Medical Education (National Webinar IMU-MAEMHS)** on 27 March along with the ICE team. “Both webinars were organised at a crucial time when we were adapting to online teaching, and were attended by 150-200 faculty from different medical schools,” says A/Prof Nilesh.

“In moving forward, we will need to make decisions about how teaching will occur when (or if) the pandemic is controlled. We expect that a blended model will be the primary method of delivery.”

– Prof Ian Wilson
Director, IMU Centre for Education.

The eLearning department also organised online workshops on **Online Small Group Teaching in Basic Medical Sciences using Technology** on 23 and 29 July which were attended by faculty from Universiti Sains Malaysia, Universiti Putra Malaysia, Universiti Sains Islam Malaysia, Taylor’s University and Perdana University.

Other training sessions for IMU faculty included those that covered production (video



Lecturers were given support to enhance their online sessions.



Sessions to familiarise students with the new digital features at the Medical Museum. Strict SOPs were followed.

and voice-over recordings) and how to use tools such as Microsoft Teams or Zoom to conduct synchronous online classes and small group-sessions. Lecturers conducting online practicals in laboratories were also trained on how to telecast their sessions using conference cameras, wireless microphones, pre-set cables and web-conferencing tools. Students were given support on how to use multiple presentation tools that were needed in interactive online group sessions.

“It was a steep learning curve for all involved but with student feedback, online sessions have evolved and have become more effective. The eLearning unit has successfully conducted more than 20 online live support sessions,” says eLearning Manager Hasnain Zafar Baloch.

During the year, the eLearning team assisted the School of Medicine and School of Dentistry to design and develop two **Massive Open Online Courses (MOOCs)** on travel medicine and smoking cessation.

In collaboration with faculty, the team developed more than 20 clinical cases for **virtual medical clinic projects**. These virtual

clinical cases are embedded with assessment tools and hosted on the eLearning portal. The team also succeeded in obtaining **research funding** for a project entitled “Development and Evaluation of an Innovative Mobile Application on Antibiotics for Pharmacology Teaching and Learning”.

“Plans for the coming year include further digitalisation of eLearning processes, creating more virtual learning spaces and using more gamification to upskill faculty and staff. It was a busy and challenging journey for the eLearning staff but at the end, it was fulfilling to be able to give support to the lecturers and the students and make them online savvy,” says Hasnain.

At the **IMU Library**, the team successfully made available new services to ensure that resources were accessible during the various movement control restrictions, including:

- The IMU Library YouTube Channel, which encouraged book reviews from users
- A “How-To” video series
- Online Information Literacy Sessions which saw better attendance than previous physical sessions. Seventy sessions were held from March to October.

- FAQs on the use of e-resources
- A subject-based e-Resources database on the Library portal

In May, Chief Librarian Zuhanariah Mohd Nordin and her Medical Libraries Group (MLG) colleagues came up with **Post-MCO Guidelines for Libraries** which were endorsed by the Malaysian Library Association. The Guidelines were subsequently shared by the International Federation of Library Associations and Institutions (IFLA) Asia and Oceania region and the Caraga State University Cabadbaran Campus, Philippines.

“We used online promotional materials to encourage use of the e-Resources and conducted 70 **e-Information Literacy Sessions** online from March to October,” says Zuhanariah.

The Medical Museum also took on digitisation initiatives and was part of the success in facilitating and enhancing the faculty’s development of more interactive and engaging online sessions.

“Faculty were provided with increased awareness and utilisation of Medical Museum resources such as touch-screen TVs, models and real specimens. Conversion of static museum resources such as histological and histopathological slides onto digital platforms increased the use of resources by the students online as well as in interactive tools,” says Maria Mahamood, Assistant Manager, Medical Museum, IMU.

The Medical Museum also purchased **online anatomy software** to complement the traditional approach of face-to-face teaching using physical models.

“We also hope to form a digital database of all Medical Museum resources which is retrievable by faculty in a one-stop online platform for use and reference for T&L activities,” she says. “Moving forward, there is also the opportunity to explore and develop augmented reality of the Medical Museum’s physical resources.”



Conducting sessions for students at the Medical Museum.



The Medical Museum has set up a digital database of all its resources.

ONLINE LEARNING RESOURCES FESTIVAL 2020

The Learning Resources Department hosted the first ever Virtual Learning Resources Festival 2020 from 3-5 November 2020. With the help of the IMU Centre for Lifelong Learning (ICL), the festival was held completely online and brought together 209 learning professionals and experts, academics and students from around the world (of which 149 were external participants and 60 were from IMU).

The online festival included webinars by renowned international and national academicians and eLearning experts, workshops on technology tools, technology-enhanced learning, gamification, and online assessment. Notable local and international speakers who shared their expertise and experience included:

- Prof Karl M. Kapp, Bloomsburg University
- Prof Madya Dr Wan Zuhainis Saad, Department of Higher Education, Malaysia
- Prof Richard Fuller, University of Liverpool
- Mohsin Memon, CEO of Memcorp Immersive Learning

- Prof Rozhan M. Idrus, Open University Malaysia
- Prof Abdul Karim Alias, Universiti Sains Malaysia
- Prof Dr Ir Ts Vinesh Thiruchelvam, Deputy Vice Chancellor (Research & Innovation), Asia Pacific University
- Dr Siti Azreena Mubin, APIIT University
- Prof Sharifah Sulaiha Syed Aznal, Clinical School, IMU

The festival also featured the International Illnovasi and mobile app competitions. The theme for this year was “Shaping the Future of Learning with Emerging Technologies”. Students from eight universities (Universiti Teknologi Malaysia, Multimedia University, International Islamic University Malaysia, Universiti Putra Malaysia, Universiti Kebangsaan Malaysia, Universiti Pendidikan Sultan Idris, Universiti Malaysia Pahang and Universiti Sultan Zainal Abidin), five matriculation colleges, and students and teachers from around 50 schools from Peninsular Malaysia participated in the competitions. IMU’s School of Medicine took the Tan Sri Dato’ Dr Abu Bakar Challenge



Trophy once again as an acknowledgement of the School's incorporation of technology-enhanced learning in their teaching and learning activities.

LEARNING NEVER STOPS

The IMU Centre for Lifelong Learning (ICL) continued to offer CPD events for internal and external communities with face-to-face sessions earlier in the year before the events were moved online. The ICL also planned and assisted in new programme development from Schools and Centres, playing a supporting role in faculty development activities for the University. ICL was ahead of its competitors in enhancing medical professionals' qualifications through OSCE workshops and exam preparation programmes such as the 13th IMU Family Medicine Clinical Skills Course and IMU Family Medicine Postgraduate OSCE Preparatory Course conducted in the third quarter of 2020.



Face-to-face courses were carried out in early 2020 such as the basic life support (BLS) skills workshop for emergency situations.



The 13th IMU Family Medicine Clinical Skills Course support group.

“This year, we focused on **building networks** with other learning organisations, for example, state skills training centres such as the Penang Skills Development Centre and the Kedah Industrial Skills and Management Development Centre, as well as government agencies such as Majlis Amanah Rakyat and the Community Development Department of the Ministry of Women, Family and Community Development. ICL formed partnerships to co-promote its training courses to these external parties and explore potential collaboration for

new projects,” says ICL Manager Ts Dr Mohd Tanwyn Mohd Kushairi.

Other key initiatives were the development of **non-healthcare programmes** – to expand the Centre’s portfolio from mostly healthcare topics – in the form of courses and workshops in the areas of finance, technology and social sciences. “Some of the collaborations we sealed during the year were with Universal Robots, Relationship Studio and the Asian Banking School. The intention was to spark interest in areas other than healthcare with a greater outreach beyond the IMU community,” says Dr Tanwyn.



People Management for Healthcare Professionals was a course offered in collaboration with Relationship Studio.

In 2021, ICL hopes to develop new CPD events with IMU’s Schools and Centres in subjects such as digital health and the integration of artificial intelligence, as well as the use of virtual and augmented reality as learning tools in medical and health sciences.

The team foresees a greater demand for eLearning and blended delivery as well as increased interest in data sciences and analytics as the cyber and physical worlds converge. “Human interaction changed dramatically this year, but ICL will continue to grow with the new normal by changing its learning delivery through digital integration,” adds Dr Tanwyn.

ACADEMIC ACHIEVEMENTS AND AWARDS

Centre for Pre-University Studies

Faculty

- Shirley Evelynna A/P Jayaseelan won a Silver medal at the IMU Learning Resources Festival (LRF) for a teaching resource incorporating use of the 360° camera in FiS Biology online practical sessions.
- Noraishah Abdul Aziz was a Silver medal recipient at the LRF for her Chemistry E-Demo Interactive Videos.
- Saraswathy A/P Ramachandran was a Bronze medal recipient at the LRF for her YouTube video featuring an ABO blood grouping experiment.

Students

- Leong Ji Chao won a Gold award at the Intermediate Biology Olympiad 2020 organised by the Royal Society of Biology (London).
- Silver awards at the Intermediate Biology Olympiad 2020 were awarded to Samuel Chau Jun Hao, Ma Jin Hao, Kayshev Varman, Jane Khor Zhi Xian, Chong Jia Xian, Lee Yi Tong, Wong Khai Hern, Brandon Ding Chee Kong, Martha Then Xin Yi, Eu Eng Dee and Kua Boon Yan.
- Bronze awards recipients at the Intermediate Biology Olympiad 2020 included Christine Tay Ming Hwee, Judith Chua Xin Bei, Roshan Pillai, Tan Si Yuan, Eunice Wong, Natalie Gan, Yvonne Tan

Yi Wen, Lum Jia Yee, Liew Yann Thorng, Henry Teh Jin Hui, Phor Yu Jia, Rachel Chow Li Jhieh, Chong Shuet Yee, Tahseen Reza and Ong Kuan Yin.

School of Medicine

Faculty

- A/Prof Dr Hally Sreerama Reddy Chandrashekhara Thummala was included among the World's Top 2% Scientists in a list compiled by Stanford University, USA, and published by *PLOS Biology*.
- Dr Muralitharan Ganesalingam was elected as the new President of the Obstetrical and Gynaecological Society of Malaysia (OGSM). He was also appointed Committee Member of the Fertility Task Force and Committee Member of the Malaysia Healthcare Travel Industry by the Malaysia Healthcare Travel Council (MHTC).
- Prof Renu Agarwal (team leader), Prof Igor Iezhitsa, Prof Nafeeza Mohd Ismail and Mohd Fadzil Zainal Anuar won a gold medal at the IMU Learning Resources Festival (LRF). ("An Innovative Approach to Develop a Self-Learning Package for Medical Students: A Promising Model.")
- Dr Sunil Pazhayanur Venkateswaran (team leader), A/Prof Dr Arshad Ikram, Dr Moe Thida Kyaw, A/Prof Dr Gnanajothy, A/Prof Dr Nilesh Kumar, Dr Htar Htar Aung, Dr Chan Li Li, A/Prof Dr Joachim Perera and Prof Velayudhan Menon were awarded a

gold medal at the IMU LRF for their poster submission. ("Virtual Medical Clinic.")

- Dr Supathiratheavy Rasiah (team leader), A/Prof Dr Tan Kok Leong, Zabibah Ibrahim and Muhammad Aswandi Aminuddin won a silver medal at the IMU LRF for their poster submission. ("Community Health Survey Module for the MBBS Programme: An Innovative Approach.")
- Prof Shahid Hassan (team leader), Prof Dato' Dr Sivalingam Nalliah, Prof Lim Kean Ghee, Marlina Omar Nakhi, Aida Lina and Mohd Fadzil were awarded a silver medal at the IMU LRF for their E-poster submission. ("The Design and Development of a Lesson Plan Applied to a Module in a Blended Learning Approach.")
- A/Prof Dr Velayudhan was awarded a silver medal at the IMU LRF for his poster submission. ("Learning about Antibiotics.")
- Dr Htet Htet (team leader), Prof Nafeeza Mohd Ismail, Prof Renu Agarwal, Prof Dr Azizi Ayob, Prof Igor Iezhitsa, Dr Olivia Tee Hui Yew, Dr Heethal Jaiprakash, Fareeza Merican Abu Backer, Rajajivan Mariarockiam and Nageshwarananda won a silver medal in the Innovasi competition at the IMU LRF for their poster submission. ("Innovative Teaching Learning Activity for Pharmacology During COVID-19.")
- Dr Nicole Chen Lee Ping was appointed Member of the Ethics Committee of the Malaysian Society of Clinical Psychology (MSCP) for promoting and maintaining a high level of professionalism among Clinical Psychologists. She was also appointed Council Member of the National Council for Counselling Educators PERKAMA International (Persatuan Kaunseling Malaysia).
- Prof Teng Cheong Lieng of the Department of Family Medicine was appointed Member of the COVID-19 Evidence Retrieval System (CERS) by Universiti Malaya.
- Prof Dato' Dr Sivalingam Nalliah completed a Masters in Instructional Design and Technology at Open University Malaysia.
- A/Prof Dr Chandramani Thuraisingham was elected President Elect of the Academy of Family Physicians of Malaysia, and will take office in April 2021. She was also appointed Member of Family Member of the Specialty Education Subcommittee of the Malaysian Medical Council (Majlis Perubatan Malaysia), and Internal Reviewer for Clinical Practice Guidelines for the Management of Menopause, Malaysia.
- A/Prof Datuk Dr Soo Thian Lian was appointed Trustee of the Malaysian Paediatric Foundation. He was also elected Council Member of the Perinatal Society of Malaysia.
- Prof Igor Nikolayevich Iezhitsa and Prof Renu Agarwal received a gold award for their invention at the International Invention, Innovation & Design Competition 2020 (3iDC2020), Universiti Teknologi MARA, UiTM Kedah Branch. ("PhTX-343 as Anti-Glaucoma Agent to Alleviate Visual Impairments.")
- Prof Lim Kean Ghee of the Department of Surgery was awarded a research grant by the National Kidney Foundation for a study on the willingness of Sarawakians towards cadaveric organ donation. He was also re-elected Vice President of the College of Surgeons, Academy of Medicine Malaysia.
- A/Prof Dr Verna Lee Kar Mun received the IMU Achievement Award for Development of New Programmes for the Postgraduate Diploma in Diabetes Management and Education (Group Category).

- Dr Sunil Pazhayanur Venkateswaran and a team led by Dr Tan Ming Yeong consisting of faculty from the School of Health Sciences, the School of Pharmacy and the School of Medicine received a team award for the Development of New Programmes, for their work on the Postgraduate Diploma in Diabetes Management and Education. He also won second place in the Teaching Excellence Award category on IMU's University Day, and completed the Postgraduate Certificate in Health Professions Education (PGHPEIMU).
- Dr Huma Shahzad and Dr Anudeep Singh completed the Postgraduate Certificate in Health Professions Education (PGHPEIMU) at IMU.
- Dr Mangala Kumari completed her PhD in Medical and Health Sciences at IMU.

Students

- Nur Nabila Nasharuddin, Raja Nur Shahkeerah and Muhammad Imaan Hon were finalists in the Malaysian Public Policy Competition, organised by the International Council of Malaysian Scholars and Associates (ICMSA). ("Decriminalisation of Mental Health in Malaysia.")
- Carmen Ching Hui, Yee Evon Chai Huey, and San Darwitha a/p S.Sivanendran won third place in the Global University Medical Challenge, organised by the Colombo Medical Congress, Sri Lanka.

School of Dentistry

Faculty

- Swarna Yerebairapura Math (presenter) and Preena Sidhu, Kirti Saxena and Omer Sheriff (co-authors) won the SEAADE Innovation Award – E-learning, at the 31st South East Asian Association for Dental

Education (SEAADE) Scientific Meeting. ("Effect of Various E-learning Tools for the Interpretation of Dental Panoramic Tomography.")

- Rohit Kunnath Menon (presenter) and Shekhar Bhatia, Shivani Kohli, Ranjeet Bapat and Allan Pau (co-authors) won the SEAADE Innovation Award – Teaching and Learning (Educational Case), at the 31st SEAADE Scientific Meeting. ("Pandemic Strategies: 'Think Aloud' in Small TEAMS to 'Think Alike.'")
- Sivakumar Arunachalam (presenter) and Allan Pau, Vishna Devi Nadarajah and Muneer Gohar Babar (co-authors) won the SEAADE Innovation Award – Curriculum Design, at the 31st SEAADE Scientific Meeting. ("Curriculum Crosswalk of the Entrustable Professional Activities for the Dental Graduates.")

Students

- Jacklyn Ng Zhi Ling (DT1-16 Sem 10) won the SEAADE-Lion Innovation Award – Curriculum Design, at the 31st South East Asian Association for Dental Education (SEAADE) Scientific Meeting. ("Clinical Audit Cycle: A Vital Tool in Dental Education.")
- Tan Wan Yee and Voon Ying Xuan presented their own and Semester 7 students' work at the 4th Annual Wikipedia Collaboration of Dental Schools Conference, held at the University of Dundee. They won the prestigious WCODS-Borrow Foundation Innovative Poster Award, beating out competition from Queen's University Belfast, the University of Aberdeen, the University of Glasgow and USM (non-Dundee category).

School of Pharmacy

Faculty

- A/Prof Mohd Zulkefeli Mat Jusoh was appointed External Assessor for Academic Promotion, Kulliyah of Pharmacy, International Islamic University Malaysia (IIUM), a member of the Editorial Board of the *Malaysian Journal of Pharmaceutical Sciences*, and Advisory Board Member of the Faculty of Pharmacy at the University of Malaya.
- Dr Hira Choudhury (Pharmaceutical Technology) and Dr Dinesh Kumar Chellappan (Life Sciences) were included in the World's Top 2% Scientists list compiled by Stanford University, USA, and published by *PLOS Biology*.
- Dr Manisha Pandey won a Silver Medal at the IMU Learning Resources Festival 2020. ("Development of e-Data Interpretation Tool for Laboratory Instruments: A Step Toward Technology-Enhanced Learning.")
- Dr Hira Choudhury won a Bronze Medal at the IMU Learning Resources Festival 2020. ("Development of Online Cosmeceutical Module: A Step Toward Extending the Boundaries for Learning.")
- Dr Low May Lee was appointed Honorary Secretary of the American Chemistry Society (ACS), Malaysia Chapter.
- Dr Palanisamy Sivanandy won the Dynamic Pharma Teacher Award from the Indian Pharma Educational Society in collaboration with Pharmatutor and St Dominic College of Asia, the Global Knowledge Management Award from the World HRD Congress and the Canadian University Dubai. He won Second Prize for his oral presentation at UMMC International Nursing and Healthcare Conference 2020, as well

as for his e-poster presentation at the International Online Conference on Pharmacovigilance and Clinical Research, and was recognised as Bentham Science Ambassador by publisher Bentham Science. During the year, he was also appointed: Journal Chief Editor for *Matrix Science Pharma* and *Materia Bioscientifica*, Associate Editor of *The Journal of Integrative Cardiology Open Access* and Guest Editor of *The Journal of Pharmacy and Nutrition Sciences*.

- Syahiera Farhana Zakaria was appointed external examiner for the Bachelor of Pharmacy final year research project, University of Cyberjaya (UoC).
- Dr Anil Tumkur Mruthyunjaya was appointed Mentor for the Western regional chapter, Association of Community Pharmacists India, at DY Patil University College of Pharmacy.

Students

- Vilashini Saravanan and Amanda Tan Yee Mun won second place at the national-level Malaysian Innovative Healthcare Symposium (MIHS) 2020 Big I Competition for the app development "Forget Me Not", an e-health platform for women's sexual health and wellbeing.
- Kishan Kunalan was elected President of the Malaysian Pharmacy Students' Association (MyPSA) at its 15th annual general meeting. MyPSA is the student chapter of Malaysian Pharmaceutical Society (MPS) and is a leading association representing all pharmacy schools in Malaysia to promote public health and develop future local and global healthcare leaders.
- Wong Xi Khai, a Pharmaceutical Chemistry student, achieved best

performance in the 2020 Chemistry final year examination and received the 2020 IKM Graduate Chemistry Award. He also received the IMU Tun Zahir Merit Award for his achievement as top student of his class.

School of Health Sciences

Faculty

Nutrition and Dietetics

- A/Prof Snigdha Misra was reappointed by Choices International Foundation as Senior Advisor to the Regional Secretariat for East Asia, on issues such as criteria revision for nutrient profiling for national nutrition policies, taxation and the double burden of malnutrition.
- Dr Lee Yi Yi participated in the Strategic Communication to Strengthen Salt Reduction Action in Malaysia.

Applied Biomedical Science and Medical Biotechnology

- A/Prof Anna Ling Pick Kiong was a collaborator on the Rice Mutation Breeding project led by the Malaysian Nuclear Agency. The team won the 2020 Forum for Nuclear Cooperation in Asia (FNCA) Excellent Research Team of the Year Award, organised by the Cabinet Office of Japan.
- Prof Shar Mariam Mohamed was appointed Chair of the Accreditation Panel for Malaysia Board of Technologists (MBOT).
- Dr Wong Ying Pei was appointed a Fellow of the Industry Centre of Excellence (ICoE) Biotechnology, Universiti Malaysia Pahang.
- Dr Tsen Min Tze (Leader) and Dr Amalraj Fabian Davamani won a Silver Medal at the IMU Learning Resources Festival for their demonstration video on haematology techniques. ("Clear, Concise, Convenient.")

Nursing

- Dr Lim Swee Geok was appointed as: guest lecturer for the Bachelor of Nursing programme, Shanghai University of Traditional Chinese Medicine (SHUTCM), Shanghai; Member, Board of Studies, Nursing Faculty, University of Malaya; Member, External Advisory Committee, Diploma of Nursing programme, Sunway University College; and Committee Member for the Association of Private Hospitals of Malaysia (APHM) Nursing Chapter.
- Chow Suh Hing was appointed as a task force member/co-author of the Malaysian Diabetes Educators Society (MDES) *Malaysian Diabetes Education Manual*, 2nd edition, published in November 2020.

Students

Nutrition and Dietetics

- Lee Lii Sin won the Undergraduate Thesis Prize at the Nutrition Society of Malaysia (NSM) 35th Annual Scientific Conference. ("Determination of In Vitro Starch Digestibility, Alpha-Amylase and Alpha-glucosidase Inhibitory Capabilities and Glycaemic Response of Guava at Different Ripening Stages.")
- Ng Xin Qian won First Prize in the Undergraduate Poster Competition at the NSM 35th Annual Scientific Conference. ("Colonic Fermentation of Isomaltulose in Healthy Malaysian Adults.")
- Chang Chun Yuan (PhD Candidate) won Second Prize for the Young Researchers' Symposium Award, NSM 35th Annual Scientific Conference. ("The Role of Familial Resemblance in Peak Bone Mass Attainment Among Malaysian Children.")

Applied Biomedical Science and Medical Biotechnology

- Tan Hui Zhe, Thang Wen Jun, Ter Hui Chee and Wan Muhammad Shafiq Wan Adnan, under the guidance of Dr Shamala Salvamani and Prof Anthony Rhodes, published an article in the *British Journal of Biomedical Science*. (“Understanding the Dynamics of COVID-19; Implications for Therapeutic Intervention, Vaccine Development and Movement Control.”)

School of Postgraduate Studies Faculty

- Dr MariKannan Maharajan and Dr Kingston Rajiah (the Master in Pharmacy Practice programme team representing SOPGS) won bronze medals at the IMU Learning Resources Festival for two e-Learning innovation projects. (“Engage and Empower Students through Social Interaction and Connected Learning (EESICL)” and “Keep Learning through Integrated and Collaborative Peer Assisted Learning Using Blended Learning Approach.”)

Students

- Hii Ling Wei (PhD by research) received the MAKNA Cancer Research Award 2019 from the National Cancer Council and Academy of Sciences Malaysia for her project. (“Elucidating the Functional Role of Sphingosine Kinase 1 (SPHK1) in Mediating Breast Cancer Stem Cell Survival through Interferon (IFN)/STAT1 Signaling Pathway.”)
- Ma Pei Yee (MSc by research) won the Best Rapid Oral Award in the “Viral Infections: MSBMB-Taylor’s Virtual Focused Meeting 2020 for her paper. (“Influence of IsaA Gene Disruption on Staphylococcal Replication, Adherence and Biofilm Forming.”)
- Henry Chang Chung Yuan (PhD by research) won Second Prize for the Young Researchers’ Symposium Award at the Nutrition Society of Malaysia (NSM) 35th Scientific Conference for his oral presentation. (“The Role of Familial Resemblance in Peak Bone Mass Attainment Among Malaysian Children.”)



ENHANCING SERVICES & RESOURCES



QUALITY IMPROVEMENT

As a key component of IMU's commitment to becoming a regional centre of excellence in health education, the Quality Improvement Unit strives to achieve the highest quality of intellectual, educational and research productivity throughout all aspects of university life. IMU continues to ensure the effective and efficient delivery and management of its academic programmes through the process of accreditation and certification.

2020 highlights

- Five-star QS University Rating
- Adaptation of audit processes and accreditation approaches in response to the COVID-19 pandemic
- Audited compliance of processes

Despite the restrictions imposed in response to the pandemic, accreditation and certification audit exercises were conducted as planned, either remotely or in a hybrid mode, while maintaining the purpose and integrity of the process. Both external and internal audits on university operations during the MCO showed that all the processes complied with the established SOP and were well supported by digitisation.

This year, IMU achieved a Quacquarelli Symonds (QS) University Rating of five stars following an evidence-based documentation audit by the world's leading provider of services, analytics and insights in the global higher education sector. The improvement of the University's rating in 2020 as compared to a similar assessment two years ago was the result of improvements in all areas assessed.

Benchmarking the University

IMU achieved a five-star rating in five out of eight categories, namely: teaching, employability, internationalisation, facilities and inclusiveness.

Teaching maintained the highest rating of five stars achieved in 2018 with full scores in



student satisfaction as well as staff-student ratios that allowed for a more personalised focus for each learner.

Under **employability**, IMU received the maximum score based on feedback in a survey carried out by QS. Career support services have improved significantly in the past two years with the provision of a wide spectrum of activities such as career fairs, workshops and an online career portal.

Under **internationalisation**, IMU achieved a five-star rating based on our international research collaborations resulting in Scopus-indexed journal publications. This is a testament to the output and quality of research at IMU. Our international and diverse faculty and student community also contributed to this score.

In the domain of **inclusiveness**, IMU was recognised for providing merit-based scholarships to deserving students, connecting students to external scholarship opportunities and reaching out to recruit lower income students. IMU is known for its inclusivity in terms of its ethnically diverse student population.

Our **facilities** gained a five-star rating for the easy access to a variety of sports and student engagement facilities within or close to the university, investment in learning resources accessible to students, and a wide range of student clubs and societies that nurture students' leadership qualities, communications skills and social responsibility.

IMU also achieved a high score in the **Academic Development** category. We scored high on the availability of expert medical educationists who conducted educational research and provided guidance to faculty in the latest and most effective teaching methodologies. Another area in Academic Development which obtained a high score was the provision of opportunities for faculty to participate in local and international conferences and development programmes.

Adapting to circumstances

There was a 70 percent increase in scheduled self-accreditation exercises this year compared to 2019. This was mainly due to the full accreditation of newly-launched open and distance learning (ODL) programmes and the compliance evaluations of perpetually-accredited programmes.



Teaching maintained the highest rating of five stars achieved in 2018 with full scores in student satisfaction as well as staff-student ratios that allowed for a more personalised focus for each learner.



Full re-accreditation exercise for the Postgraduate Diploma in Implant Dentistry.



Compliance exercise for the Chiropractic programme.

There was a 70 percent increase in scheduled self-accreditation exercises this year compared to 2019. This was mainly due to the full accreditation of newly-launched ODL programmes and the compliance evaluations of perpetually-accredited programmes.

From April to December – during the various restricted movement orders – 11 activities were completed successfully. Every effort was made to conduct the accreditation exercises as close as possible to the original schedule to prevent any gaps in the accreditation period. To achieve this, three modes of audits were initiated: 100 percent face-to-face visits with social distancing, 100 percent virtual exercises and a hybrid of both face-to-face and virtual.

We also established procedures for online processes in compliance with the MQA Code of Practice for Programme Accreditation (COPPA) 2nd Edition 2018. To ensure best practices, IMU adopted the ISO 9001 Auditing Practices Group Guidance on Remote Audits, 2020.

All the key elements of an accreditation visit were preserved in the modified procedures and included the following:

- Providing opportunities to verify statements and descriptions
- Providing insights into the programme's operations
- Providing opportunities for investigation and personal interaction
- Enabling qualitative assessment of factors which may include facilities inspection.

Moving forward

The IMU Safety and Health Committee (established in 2003) has been taking active steps to ensure full compliance with the Malaysian Occupational Safety and Health Act 1994 (Act 154). In 2019, IMU commenced the process of obtaining accreditation for the ISO 45001:2018 Occupational Health and Safety Management System. Implementation of these standards will enable IMU to identify, minimise and control health and safety risks at the University.

INDUSTRY PARTNERSHIP & CAREER DEVELOPMENT UNIT

The Industry Partnership & Career Development Unit (IPCDU) is dedicated to supporting students in their careers by enhancing personal and professional development and improving the future employability of IMU students.

2020 highlights

- Digital Talk series
- Graduate Career Fair 2020
- Online Essential Skills workshops and talks

The IPCDU builds collaborative partnerships with both health-related and non-health-related industry partners to provide opportunities for internship, research, community building and entrepreneurship, and to expose students to the wide variety of employment options available upon graduation. The Unit prides itself on keeping up with current trends and industry requirements in the interest of producing high quality, sought-after graduates.

The COVID-19 pandemic challenged us to find solutions to many new problems, and it reminded us of the importance of unity in our diversity. It also gave us the opportunity to explore various digital platforms to reach out to our partners and students despite the nationwide restrictions on movement and physical meetings.

Keeping things online

This year, we shifted our career development activities online with a series of talks entitled Extended MCO – Digital Talk with the Career Development Team. The four sub-topics of this personal branding series were:

- Personal branding 101
- Creating the foundation of Y.O.U.
- Designing your own personal brand
- Empowering your personal toolbox



One of the last physical meetings before the Movement Control Order in February 2020 with Talentbank, an integrated recruitment agency.



The Unit continued to offer self development talks online.

Despite the MCO the Unit also managed to make the **Graduate Career Fair 2020** a success. The fair was held on 11 September with 21 participating companies representing various interests from healthcare to research. Of the 21 companies, five participated virtually, four chose to have a physical booth and the remaining 11 were present both virtually and on campus. The participating companies came from a range of backgrounds: medical, pharmaceutical, wellness and chiropractic industries as well as government and non-government organisations.

A dedicated platform <https://careerfair.imu.edu.my/> was developed which allowed students to connect and engage with participating companies with one easy click. Five talks were delivered live online on topics of current interest, namely: "What is Next After the Lockdown", "#NextNormal: Grooming for Success", "How to Build a Winning LinkedIn Profile", "Introduction to Bookdoc + New Norm Work Life", and "5G Clinic – 21st Century Chiropractic". These talks were conducted by local and international speakers and were well received by students.



Group photo with the exhibitors of Graduate Career Fair 2020.



(from left) Prof Toh Chooi Gait, A/Prof Rokiah Don and Prof Abdul Aziz Baba visiting booths at the Graduate Career Fair 2020.

The Unit's workshops were also translated into online modules such as the Essential Skills Workshops. Besides this, the Unit also hosted other Essential Skills Talks from various partners, including those on entrepreneurship, the importance of English for the future workforce, critical thinking in a crisis, how to be an empathetic and holistic Medical Officer, and much more.

Moving forward

On our roadmap are new events such as Dialogues with CEOs and Hackathons to achieve the Unit's goals and objectives. Building on our experience in 2020, the Unit will continue to focus on the digitisation of all our activities. We are also working on a five-year strategic plan to enhance the effectiveness of industry partnerships and career development.

The Unit will continue to seek deeper engagement with our Industry Partnership Advisory Committee which provides guidance and feedback on our strategic plans and activities. The Advisory Committee also identifies future work trends, graduate skill sets, training needs of the industry as well as networking opportunities which allow the IPCDU to plan, identify, and engage better with our graduates.

**“Embrace change in a positive manner.
To predict the future is impossible,
but we can learn how to navigate
transitions and become more resilient.”**

– Najwa Razak
Senior Executive, IPCDU.

STUDENT SERVICES HUB

The Student Services Hub (SSH) focuses on enhancing IMU's service delivery to all students (as well as parents) as they make their way through university life. We also strive to bring our alumni closer to the University through various initiatives and activities – our alumni are an important part of current students' learning journeys as they can provide great insight and mentorship.

2020 highlights

- Mental health initiatives including e-Counselling and Mental Health Week
- Launch of IMU COVID-19 Hardship Assistance Fund (ICHAF)
- Launch of IMU COVID-19 Welfare Assistance Fund (ICWAF)
- Launch of the IMU Alumni Portal

This year, a major portion of our attention was given to providing the best care and support during the pandemic by establishing students' mental health as a campus-wide priority and by building stronger networks to support students.

A focus on mental health

When face-to-face interactions were no longer permitted under the Government's efforts to curb the spread of the COVID-19 pandemic, the SSH moved its counselling services online to ensure continuous mental health support for our students. We also mobilised the IMU Peer Support Club to enhance peer-to-peer support, where the club actively promoted mental health tips through social media, carried out a Mental Health Week and responded to students' mental health concerns via its Talk2Me email service.

During the year, the Self Development Unit (SDU) under the SSH launched a comprehensive set of Mental Health Guidelines to help create awareness about the need to take adequate care of mental health. The Unit also hosted two Higher Education Mental Health Professionals online meet-ups and two Psychological First Aid training sessions. These helped us to establish



Mental Health Week 2020



Counselling sessions were made available online.

networks with mental health professionals from other universities and to share and support one another.

For our efforts, we were shortlisted as a finalist for the Times Higher Education (THE) Awards under the Outstanding Student Support Award category for our submission, "Advocating Mental Health (MH) Wellbeing: Collaborative and Integrative Effort", which highlighted the SDU's outreach initiatives, counselling and peer support initiatives.

Financial aid

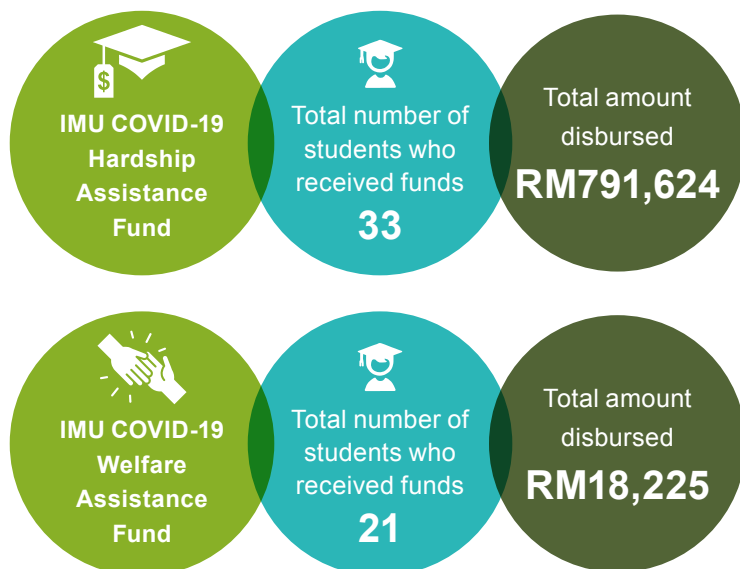
Many students also faced financial challenges during the year. In view of this, the University established two funds – the IMU COVID-19 Hardship Assistance Fund (ICAHF) of RM3 million and the IMU COVID-19 Welfare Assistance Fund (ICWAF) of RM2 million –



The IMU Peer Support Club's Instagram posts encouraged positive thinking and shared life tips.

Amounts disbursed under Assistance Funds

(as of end-2020)



to support students facing severe financial hardship that would potentially affect the students' likelihood of completing their studies.

We received 53 and 22 applications for the ICHAF and ICWAF funds respectively. At the end of 2020, we disbursed RM791,624 in aid to support 33 students under the ICHAF and RM18,225 to 21 students under the ICWAF. Applications for the funds will remain open until 14 June 2021. Aside from this, we continued to offer IMU Scholarships.

Engaging with students

We launched the Student Portal in 2019 and continued to enhance the system further in 2020. As at the writing of this report, we are working to enhance functionality of the portal based on feedback we received throughout the year. This includes announcement services, a convocation check-in system and a staff



IMU's team of advisors that came together to support mental health at the University throughout the year. They are representatives from the Self Development Unit, student peer support and Student Services.

directory. Also in the pipeline is an Extra-Curricular Activities (ECA) & Scoring System through which students can keep track of their participation in ECA activities and scores with access to an ECA transcript that will showcase their achievements and skills to aid future employment.

We also introduced an online onboarding module within the Student Portal to ensure students are properly integrated into the IMU experience. The features available on this onboarding module are:

- Hostel enquiries
- Getting out and about
- Safety and security
- Orientation starter-kit
- Admission process for both local and international students.

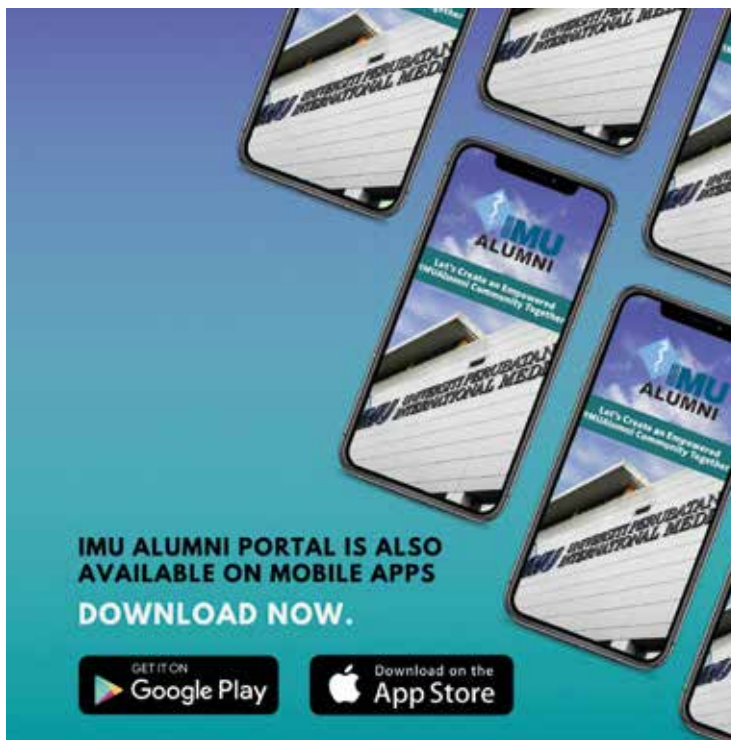
Our alumni

We launched the newly-minted Alumni Portal in September 2020 to manage the ever-growing alumni body and to capture big data by connecting with our previous students on a secure platform. We hope the portal will be a platform to inspire, develop and maintain the interest of the alumni in IMU's current activities and also help create beneficial networking opportunities. Past Pharmacy students formed a new alumni chapter, the Pharmacy Chapter, in July.

Spearheaded by the Alumni Relations Office, IMU signed a Memorandum of Understanding with the National Cancer Service Malaysia (NCSM), which marked a new collaboration between IMU Cares and NCSM. The collaboration will see the development of educational and informative resources or modules related to community engagement and public health awareness initiatives; joint training, teaching, and learning and community



(from left) Prof Zabidi Hussin (Pro Vice-Chancellor, Academic), Noraidah Yusoff (Registrar), A/Prof Mr Gandhi Solayar (Alumni Association Chair) at the launch of the Alumni Portal in September 2020.



The mobile Alumni Portal app.

engagement, as well as close cooperation in the field of health advocacy and research and development. IMU alumni will also support NCSM and work with IMU to carry out clinical screening.

Moving forward

Plans for 2021 focus very much on increasing student engagement through the Student Portal as online interactions become ever more important. Mental health will continue to be a priority area with Self-Development Programmes and the implementation of a Mental Health Crisis Management Team (MHCMT) that will include mental health professionals, academic members, administrators and management. The MHCMT will oversee the development and management of a strategic plan to support student mental health and reduce suicide risk.

We also foresee that more families will be facing financial crisis and as such, starting in 2021, IMU will be setting aside an additional budget of RM702,300 in addition to the previous allocation of RM4,611,100 for its scholarship fund. This means that a total of RM5,313,400 will be allocated annually which will benefit 38 students. Under this scholarship we will be introducing a new needs-based quota that reserves 11 out of the 38 places for students from the B40 and M40 income groups. With this new scholarship package, we hope to open up more opportunities for deserving students.

We hope the experiences of 2020 will bring us closer as a community and continue to spur the team to be creative and be led by an innovative mindset to help us deepen our engagement with students and alumni alike.



Aflame Student Award 2020

Created in 2012, the annual Aflame Student Award usually honours the graduating student who has best embodied humane principles and practices while at the University. This year, however, the Aflame Student Award 2020 was presented to three students, who portrayed leadership in community service, as well as empathy for the organisations and communities they served. They each were able to nominate a beneficiary organisation to receive RM2,000 from IMU.

The winners

Dr Tan Chen Liang, whose passion is for helping the marginalised communities such as the Orang Asli and refugee communities, nominated Persatuan Untuk Anak Kita (PUAK), which is a non-profit organisation that advocates children's safety. PUAK works with children and youth, with a focus on creativity, sustainability and skills.

Dr Shinah Saeed, another medical graduate whose life's motto is "Be kind to everyone", nominated Mercy Malaysia, an international non-profit organisation focused on providing medical relief, sustainable health-related development and risk reduction activities for vulnerable communities.

Dr Karishma Kaur Rajinder Singh Gill, a graduate of the School of Dentistry, nominated an organisation she has been involved in, Dentistry for the Needy. The organisation provides free treatment to marginalised groups, with an aim to develop independent teams in each state to help people who lack access to dental care.



Dr Tan Chen Liang with the cheque for Persatuan Untuk Anak Kita (PUAK).

Alumni achievements

Name	Programme	Achievement
<ul style="list-style-type: none"> • Pichien Mongkolthanit 	Medical Biotechnology	Winner of the Coursework Prize MSc in Medical Biotechnology and Business Management at the University of Warwick.
<ul style="list-style-type: none"> • Bushra Farooq 	Psychology	Awarded the Fly High Scholarship by UniAcco.
<ul style="list-style-type: none"> • Tee Weng Yan 	Nutrition and Dietetics	Won Silver at the Shanghai International Piano Competition 2020.
<ul style="list-style-type: none"> • Puvaneswari Marappan 	Pharmaceutical Chemistry	Awarded the BRAND'S Smart Achievers Award 2020 for high-achieving and well-rounded individuals.
<ul style="list-style-type: none"> • Lee Yin Ying 	Pharmacy	Won the MPS-Duopharma Biotech Gold Medal Award 2019 at the National Pharmacists Convention (NPC) 2020.

Student awards from academic conferences and competitions

Name	Programme	Award
<ul style="list-style-type: none"> • Carmen Ching Hui Yee • Darwitha S Sivanendran • Evon Chai Huey San 	Medicine	Three IMU SOM students won third place in the prestigious international Global University Medical Challenge at the University of Colombo (14-15 Feb). They were supervised by Dr Nilesh Kumar.
<ul style="list-style-type: none"> • Tan Wan Yee • Voon Ying Xuan 	Dentistry	Two Year 5 dental students were awarded the internationally-prestigious WCODS-Borrow Foundation Innovative Poster Award at the Wikipedia Collaboration of Dental Schools: 4 th Annual Conference (7 Mar) at the University of Dundee. The project involved reviewing and publishing evidence-based articles on selected topics on the Dental Wiki website and was judged

(continued)

Student awards from academic conferences and competitions

Name	Programme	Award
		by Dundee professors. Other competitors were from Queen's University Belfast, the University of Aberdeen, the University of Glasgow and Universiti Sains Malaysia (non-Dundee category). This year, IMU dental students published over 20 articles. They were supervised by Dr Umer Daood and his team of lecturers.
<ul style="list-style-type: none">• Janice Nga Diong Li• Shirlene Foo Yih Ting	Dentistry	Two Semester 9 dental students won First Prize in the 3 'O' International Dental E-quiz Competition 2020 held internationally on 30-31 May. This online competition was organised by AIMST University and involved 138 participants from nine countries.
<ul style="list-style-type: none">• Lim Xian Jin• Sandra Churme Jia Hui	Dentistry	<p>Our students were awarded second and third places in the Junior Category Poster Competition at the 19th Annual Scientific Meeting of the International Association for Dental Research, Malaysian Section (IADR-MALSEC) held on 10 October 2020.</p> <p>Second place: Sandra Churme Jia Hui Title: Assessment of Dentinal Micro-crack Formation Following Different Post Cementation Systems Using Micro-computed Tomography: An In-vitro Study Main supervisor: Rohit Pandurangappa</p> <p>Third place: Lim Xian Jin Title: Quaternary Ammonium Silane/K21 Triggers Intracanal Biofilm Destruction—A New Paradigm Main supervisor: Dr Umer Daood</p>

(continued)

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Student awards from academic conferences and competitions

Name	Programme	Award
<ul style="list-style-type: none">Kan Chang Yu	Dentistry	Kan Chang Yu, a Semester 10 Dentistry student, won third place in the oral presentation competition at the National Dental Students' Scientific Conference 2020 held online on 2 November. He was supervised by Prof Frederick Smales, A/Prof Tan Eng Lai and Dr Abhishek Parolia. He presented his paper "Effect of Dried Ginger Root (<i>Zingiber officinale</i>) Extracts on Age-Related Hyposalivation in C57BL/6 Mice".

Student awards from extra-curricular activities

For the year in review, our students continued to gain recognition in other areas.

Name	Programme	Award
<ul style="list-style-type: none">Amanda TanVilashini Saravanan	Pharmacy	<p>Two BPharm students grabbed second place in The Big "I" Competition 2020 held during the national Malaysian Innovative Healthcare Symposium (MIHS) 2020. The event was open to all public and private universities to promote and cultivate creative innovation in the local healthcare sector.</p> <p>The students developed an app called "Forget Me Not". The e-healthcare platform allows women to discuss sexual problems and get consultants' advice without disclosing their identities. This was aimed at improving the quality of life for women who were too shy to discuss their issues.</p> <p>The project was supervised and assisted by Dr Manisha Pandey, Department of Pharmaceutical Technology and Dr Rohit Kumar Verma, Department of Pharmacy Practice.</p>

(continued)

Student awards from extra-curricular activities

Name	Programme	Award
• Chiah Ruey Chee	Pharmaceutical Chemistry	Recipient of the Community Outreach Specialist-Monstar Award 2020.
• Nornaim Asraf and Azanzali Hamzah	Pharmacy	First place winners at the National Pharmacy Sports Carnival (NPSC) 2020, an annual gathering of pharmacy students from 16 public and private universities.
• Amutha Aruvi Kaniamuthan	Psychology	<p>On 2 August, Amutha presented a webinar on “Breaking the Wall of Prejudice – Transcending Barriers through the Heart” at the international Global Youth Volunteer Integration Program (an online seminar aimed at guiding youth to create a more Heartful World). Amutha shared her experience and learning about overcoming prejudice by introducing ways to stimulate our “Feel Switch” to transcend the barriers of the mind.</p> <p>She also took part as a panellist at an event held in commemoration of International Youth Day. The event was organised by Heartfulness Institute and the Global Education & Leadership Foundation (tGELF). It brought together youth leaders from all over the world to inspire and uplift youth towards heart-based, ethical and decisive leadership.</p>

EMPLOYEE ENGAGEMENT & WELLNESS

The year 2020 required a change of mindset and the embracing of new norms.

As an educational institution concerned with all aspects of health, IMU took great care in ensuring that employees were given the support they needed to get through the many challenges that the COVID-19 pandemic had brought.

2020 highlights

- Two staff surveys on working from home
- Publication of “Guidelines on Working From Home”
- Set up of Crisis Management Team
- Two virtual townhalls
- Launch of HR Helpdesk
- Launch of the Employee Engagement Survey (EES) 2020

Except for the Chinese New Year celebration held in February before the Government implemented the Movement Control Order (MCO), all other festive celebrations for the year had to be cancelled. Staff trips could not take place as planned and other physical activities such as yoga, zumba, tai-chi, badminton, football and netball had to be put on hold. In previous years, these activities helped to keep staff engaged with one another and boost morale.

With work from home (WFH) initiatives in place, IMU staff also did not have the chance to interact with one another; and even when movement restrictions were eased, teams came into the office on a rotational basis. All this had a tremendous impact on our employees, physically, mentally and emotionally.

How did we continue to connect and engage our employees?

Keeping in touch

We conducted two surveys to gauge how employees were coping with working from home with a focus on physical safety, mental health, welfare and work-life balance during

the lockdown. The first survey targeted Heads of Department (HODs) and those involved in team management. The second was a general survey covering all staff including our frontliners (i.e. clinic staff and other frontline support). Frontliners responded to the survey based on their experiences working on-site as opposed to WFH. The surveys were carried out in April 2020, more than a month into the MCO.

Continued support

During the MCO and lockdown, a Crisis Management Team was set up to oversee and monitor the day-to-day situation at the University. Daily communication was established to support staff and students.

Support was also provided in the acceleration of technology for online lectures and virtual learning. Faculty members were encouraged to upskill themselves with the help of a remote IT Helpdesk to prepare more online lectures and resources to cater to students' needs. The University also gave monetary subsidies to all staff to enhance their internet capacity at home.

Frontliners received allowances to ease costs of transportation and food during the first lockdown period.



We also circulated advisories on managing WFH and maintaining physical and mental health. The unit also created a platform for staff to easily access materials on wellness and mental health and developed Guidelines on Working From Home for employees. The guidelines laid out the dos and don'ts of WFH and provided advice on maintaining productivity while staying mentally and physically active.

The department organised IMU's first two Virtual Townhalls in June 2020 and November 2020 to update staff on the happenings in IMU as well as to address concerns over the COVID-19 pandemic.

During the year, the Human Resources Department took the opportunity to virtualise onboarding, offboarding and orientation processes. The HR Helpdesk was also launched, both physically and virtually, to reach out to employees and to provide better accessibility and engagement for staff.

In November, we partnered with our parent company IHH Healthcare to launch the Employee Engagement Survey (EES) 2020. We hope that this comprehensive survey will give us more insights into the views and feedback of all employees at IMU, especially during these unprecedented times.

Way forward

Employee engagement will always remain an important part of the University's agenda. The unit will work especially hard to help employees realign themselves with the New Normal. Whether they are working from home or on-site, we will continue to look for innovative ways to connect, engage and give value to our people.

STUDENTS AND THE PANDEMIC

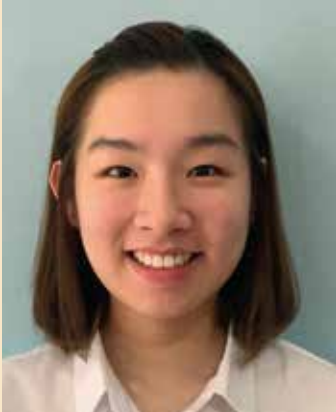







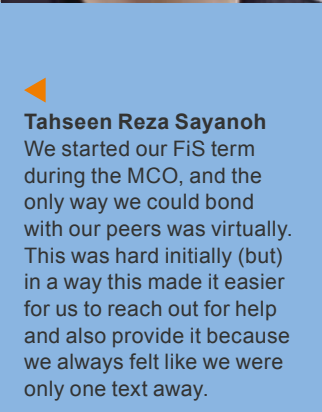
For students around the world, the pandemic was like the exam question nobody saw coming: it threw them off guard, and compelled them to look at everything they knew (or thought they knew) in a completely different way.

At IMU, students found their own ways to get past the initial panic and effectively deal with an unfamiliar challenge. In the process, they discovered new things about themselves and their chosen professions.



STAYING SANE DURING THE LOCKDOWN

How did students cope with the stress of isolation, and being away from friends, faculty and the familiarity of the traditional classroom?

	 <p>Ang Huey Xinn, Cheryl Setting up a study corner, having a fixed schedule, as well as exercising really helped me through the months.</p>	 <p>Dang Tien Kiong I was lucky to have a housemate during the lockdown. We would plan and prepare our meals together after the online classes. This gave me the human contact I needed to keep me going every day.</p>
 <p>Sarannya Balakrishnan Instead of fighting isolation, I learned to change my mindset, adapt, and embrace it.</p>	 <p>Gan Yee Chian I distracted myself with housework and chores, learned new technologies and other things that might be of use in the future, and exercised.</p>	
	 <p>Ashley Foo Mei Shan It helped to have a structure and list of daily topics to cover as my goal. When preparing for exams, prayer with loved ones did wonders to calm my heart and mind, and help me achieve clarity and confidence.</p>	 <p>Tahseen Reza Sayanoh We started our FiS term during the MCO, and the only way we could bond with our peers was virtually. This was hard initially (but) in a way this made it easier for us to reach out for help and also provide it because we always felt like we were only one text away.</p>

Lockdown, not meltdown

IMU students found various ways to de-stress during the lockdown, among them: reading • spring cleaning • helping parents with family business • yoga • developing “an unhealthy addiction to Netflix and potato chips” • cooking • baking • gaming • knitting a hat • learning to code • painting • writing • gardening

HOW THE PANDEMIC CHANGED MY VIEW OF THE MEDICAL AND HEALTHCARE PROFESSIONS

The pandemic forced many IMU students to ask themselves yet again, or perhaps even for the very first time: what exactly have I signed up for?



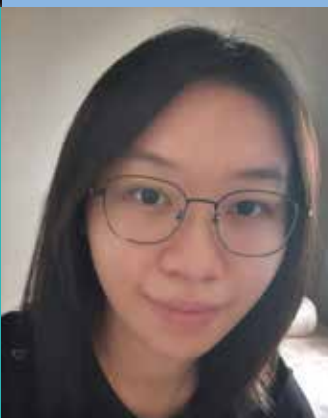
Megan Yew Min Tse
I realised that the supporting roles of scientists and medical biotechnologists are no less important than that of frontliners in these trying times.



Jeff Lim Zhe Yu
It's not just about the medical aspect, it's also technology and problem-solving skills.



Chua Xuan Chee
It made me realise how courageous healthcare professionals have to be, to carry out their respective jobs.



Nur Nabila Nasharuddin
Delving into the possibilities of telemedicine is something I would look into now, having seen how important it became during the MCO.



Mir Omer Ali
I realised that medical school prepares you to be a doctor not by teaching you how to treat every single disease, but by teaching you how to treat people. This way you are always ready no matter what comes up.



Bryan Loh Yan Min
It reinforced my belief that the medical professions are as important as soldiers or the police, because they have a common aim: to protect the country and the people.



LESSONS LEARNT WHILE SELF-ISOLATING AND SOCIAL DISTANCING

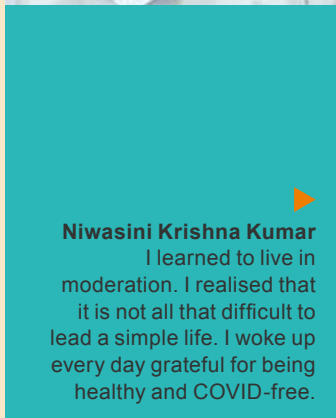
In a pandemic, as in life, the most important lessons are not spelled out in textbooks.



▶ **Azraai Danial Khirzeri**
In contrast to the non-stop, busy lifestyle of a student, and the continuous travelling and meeting people every day, self-isolating gave me a little more space to focus on myself rather than on people around me.



▶ **Samuel Chau Jun Hao**
I realised that our families are truly the people who matter the most to us. It is only when we spend all our days at home that we realise how much we take them for granted.



▶ **Niwasini Krishna Kumar**
I learned to live in moderation. I realised that it is not all that difficult to lead a simple life. I woke up every day grateful for being healthy and COVID-free.



▶ **Vilashini Saravanan**
I learned the advantage of being able to adapt. I also learned the importance of self-discipline.



▶ **Wong Yee Chi**
In self-isolation, I learned that humans are not made to be alone and the community must stand together as one, especially in times of crisis.



▶ **Isaac Lui Chung Howe**
I realised that being alone is not always such a bad thing. The isolation presents a great opportunity for introspection, reflection and finding ways in which one can improve oneself.



HEALTHCARE

IMU HEALTHCARE

IMU Healthcare operates, manages and develops the University's healthcare services, and plays a core role in the ongoing evolution of IMU into an Academic Health Centre. These services currently consist of an eco-system of clinics and centres delivering outpatient Medical, Dental, Chiropractic, Chinese Medicine and Dialysis services to patients in local communities. As such, IMU Healthcare serves the three functions of private healthcare services, student clinical training and research activities. A significant step undertaken in the development of the IMU Academic Health Centre is the setting up of the IMU Hospital in Bukit Jalil. The Hospital is due to open in 2022.

2020 highlights

- Provision of public and professional education
- New Health Screening Package
- New Developmental Screening for Pre-School Children Package
- Strengthening of Service Transformation for Excellent Performance (STEP)
- 6S Improvement Project

Being on the frontline of healthcare services, our focus in 2020 was on dealing with the COVID-19 pandemic and ensuring the safety of patients, students and staff. Later in the year, this transitioned into adapting to the New Normal, which meant changes to patient behaviour, additional protocols and procedures, as well as additional protective equipment, workflows and operations arrangements.

The New Normal – embracing change

Throughout the year, IMU Healthcare introduced a range of safety measures which included enhanced health screening, vast upgrades to standard operating procedures, and strict implementation of physical distancing and crowd management at all our clinics and centres.

One of the early challenges at the onset of the pandemic was the need to secure adequate supplies of personal protective equipment, while infection control became the topmost priority to protect patients, students and staff.



IMU Healthcare staff ready to serve as frontliners.

The IMU Oral Health Centre also took into account the potential risk exposure of aerosol-generating dental procedures. A working group consisting of experts from the academic arm of IMU was formed to determine the best practices in infection control, in line with the Ministry of Health's advice and guidelines.

While we were obliged to postpone plans to increase the number of our clinics, we provided more clinical sessions with new Medical, Dental, Psychology and Chinese Medicine clinicians. We also introduced new services including the Health Screening Package, which provides a guided selection of tests tailored to patients' individual health requirements, as well as a Developmental Screening Package for Pre-School Children overseen by our Clinical Psychologist.

Additional bays and clinical rooms were activated at the IMU Chiropractic Centre



SOPs designed to protect patients, students and staff.

and IMU Chinese Medicine Centre. These allowed for more space to implement physical distancing SOPs.

Provision of public and professional education

We continued to run public forums and continuing professional development (CPD)



Treatment beds were prepared in compliance with physical distancing SOPs.

talks via digital platforms in 2020. Combined with radio interviews, we provided 28 talks throughout the year, and these included webinars and Facebook Live sessions conducted by our clinicians and practitioners. Topics embraced a range of subjects which included medicine, psychology, dietetics, physiotherapy and Chinese medicine, both in terms of the impact of the Movement Control Order (MCO) as well as general wellness and other health issues such as dengue and cancer.

Transforming the workplace

We introduced the Service Transformation for Excellent Performance (STEP) in 2019 to enhance the service culture of the team. This year we strengthened the programme through audits and refresher courses to reinforce its key principles.

We also implemented the 6S (Sort, Set in Order, Shine, Standardise, Sustain and Safety) programme to promote safety and efficiency and to embed a mindset of continuous improvement at IMU Healthcare. Eleven project teams were assigned with individual responsibilities over nine months, and the teams peer-reviewed one another and competed to make the most efficient and effective improvements in their targeted areas.

Contributions to the community

With the support of IMU Cares, IMU Healthcare continued to provide community-related services such as healthcare support for homes for the underprivileged. In addition, we continued our efforts to ensure optimal health and nutrition specifically among children of



The 6S programme included challenges and team projects to embed a mindset of continuous improvement.





Aerial view of the IMU Hospital.

refugee communities under the International Organization for Migration (IOM).

The IMU Hospital

The MCO and its subsequent iterations affected the construction of the IMU Hospital but the project continued to proceed in accordance with contractual requirements. Measures were taken to synchronise human resources planning and delivery of medical and engineering equipment to overcome the challenge in labour supply and logistics.

In 2020, the Hospital Team commenced planning of the operational preparedness aspects of the IMU Hospital, and we also awarded contracts for a hospital information system with electronic health records and completed the remaining procurement of major medical equipment.

IMU Healthcare also accelerated the establishment of clinical governance as part of its preparations to meet the highest standards in hospital management. As the hospital will be part of the Academic Health Centre, the governance and risk management requirements and structure were balanced with those relating to statutory, academic and business objectives.

Moving forward

We will execute our new Strategic Plan in 2021 which will include a focus on the operational preparedness of the hospital as well as the expansion and strengthening of ambulatory care centres while continuing to provide a platform for students' clinical training. We will also continue to establish the IMU Healthcare brand as a reputable Academic Health Centre.

IMU AND THE WAR AGAINST COVID-19

Contributing Beyond Our Community

With a shared sense of responsibility and an abundance of SOPs, we succeeded in keeping our campus and community safe in 2020. Additionally, we were able to make an impact at the national and global levels in the war against COVID-19, thanks to our synergistic strengths in education, healthcare and research.

Here's what IMU dispatched to the battlefields of the pandemic.



1 TROOPS

“We now have a name for the disease,” said WHO Director-General Dr Tedros Adhanom Ghebreyesus in February when he introduced the term “COVID-19” to the world. We have names, too, at IMU – names of the many members of our

community who served as frontliners in 2020. From alumni to IMU Healthcare staff to IRDI researchers, from Sungai Buloh to Singapore to Scotland, these individuals did us proud with their skill, stamina, compassion and courage under extraordinary circumstances.



Featured here, just a few of the many IMU alumni who are frontliners in hospitals across Malaysia and the world, including Hospital Selayang, Hospital Kuala Lumpur, Hospital Tunku Azizah Kuala Lumpur, Hospital Umum Sarawak, Hospital Ampang, Hospital Sungai Buloh, Hospital Tengku Ampuan Rahimah, Ara Damansara Medical Centre, Raigmore Hospital (Scotland, UK), Luton & Dunstable Hospital (England, UK) and National Centre for Infectious Diseases (Singapore). (first row, from left) Lo Con Nie, Dr Dalson Tan Shi Hun, Dr Lenster Jiram Marshal, Heng Hian Ee. (second row) Dr Chua Wei Xin, Dr Pak Jun Wee, Dr Soh Wan Wen, Dr William Choo. (third row) Dr Kuhanesh Janardanan, Dr Mak See Mun, Dr Gandhi Solayar, Dr Irena Moha. (fourth row) Dr Andrea Goh, Dr Cheng Yi Khaw, Dr Anita Codati, Dr Rupashini.

“I remembered my calling as a nurse...”

Wen Jing, a 2016 graduate of IMU's Bachelor of Nursing (Hons) programme, was an ICU nurse at a hospital in Singapore when COVID-19 struck. She later became a volunteer at the Outbreak ICU of Singapore's National Centre for Infectious Diseases. Below are **excerpts** (edited and condensed) from her article for *IMU News*.

- “I couldn't hide my worries about getting infected. So many possibilities were running through my mind. But I remembered my calling as a nurse, and I hoped I would be able to contribute and learn at this critical time.”
- “[In the case of an ICU patient who had suffered a haemorrhagic stroke] I found out that the whole

family had been diagnosed with COVID-19 and was hospitalised at different locations. A family conference was carried out via Zoom, allowing time for family members to bid the patient goodbye online. With the son's agreement, one of the life support machines was removed and within minutes, the patient passed on. My heart ached so much on seeing this as I could not imagine not being able to at least hold the hands of my loved ones on my last journey in this world.”

- “We learned to live for the moment, express our love while we can, meet our loved ones when we have the chance, and definitely take care of ourselves.”



2 FACILITIES

Early in the year the National Public Health Laboratory (NPHL) took steps to ensure national preparedness with regard to diagnostic testing, including reaching out to private facilities that might be able to play a supporting role. At IMU, we converted our Advanced Microbiology Collaborative Research Laboratory (IMU-AMCRL) into a dedicated diagnostic testing laboratory. By late March the public laboratories were overwhelmed. We readied our staff for duty. On 27 March 2020 we became the first private university in Malaysia to help conduct COVID-19 diagnostic testing. We were later supported by kind donors like Lions Club KL City, which contributed RNA extraction kits to help address the shortage of reagents.



IMU-AMCRL, repurposed for the nation

6 Feb Public and private universities are invited to a COVID-19 laboratory diagnosis training event at NPHL. An IMU faculty member attends the event.

23 Mar The Director of NPHL approaches IMU's Pro-Vice Chancellor of Research for help in running screening tests.

25 Mar Our assembled teams stand ready.

26 Mar NPHL staff provide further training on biosafety, PPE and data entry.

27 Mar We receive the first batch of samples from NPHL and begin testing.

Excerpt from "COVID-19 – A Malaysian Private University's Immediate Response to Provide Testing Services" by Patricia Kim Chooi Lim, Azizi Ayob, Khai Lone Lim, Shew Fung Wong, Kenny Voon and Lokman Hakim Sulaiman, published in *International e-Journal of Science, Medicine and Education (IeJSME)* 2020 14(2), 1-4:

"[IMU's Advanced Microbiology Collaborative Research Laboratory] is well designed and equipped with Biosafety Level-2 (BSL-2) cabinets, with its own air-conditioning system which allows a contained testing for infectious agents including SARS-CoV-2, and access to authorised personnel only.

"There were still challenges as this laboratory was a BSL-2 facility and, initially, we did not have sufficient personal protective equipment



Prof Datuk Dr Lokman Hakim Sulaiman, Director of IMU's Institute for Research, Development and Innovation, briefing staff.

(continued)

(PPE) to sort and aliquot samples and perform extraction on a daily basis [...] In addition, we needed to move specific equipment e.g. real-time PCR machine, freezer etc. into this dedicated laboratory to reduce the risk of infection.

"[The IMU faculty member who attended the training in February] was tasked to set up working teams. [We were] able to establish our teams immediately due to our Research Laboratory staff and faculty's dedication and deep sense of responsibility and empathy to respond to the nation's call for help".

3 STRATEGY

A war cannot be won without strategy. In true IMU spirit, our staff at the AMCRL who performed COVID-19 diagnostic testing not only did their jobs well, they discovered ways to do them better.

While carrying out their daily duties, our researchers were able to develop a novel sample pooling strategy for cost-effective, large-scale diagnostic testing.

"A resource-efficient strategy"

Excerpt from "A Novel Strategy for Community Screening of SARS-CoV-2 (COVID-19): Sample Pooling Method." Lim, K.L., Johari, N.A., Wong, S.T., Khaw, L.T., Tan, B.K., Chan, K.K., et al. *PLoS ONE*. 2020;15(8), e0238417:

"The detection of COVID-19 using qRT-PCR [real-time reverse transcription polymerase chain reaction] with the pooling of samples during nucleic acid extraction greatly reduced workload and costs especially when disease prevalence was low. [...] A pooling strategy like this will significantly improve efficiency and will help to reduce the backlog of pending COVID-19 tests, and subsequently reduce

diagnostic turnaround time, which is critical for patient management and transmission control (isolation and quarantine measures). It will be useful for resource-strained laboratories especially in developing countries. With this approach, testing may be more feasible and affordable if the government chooses to screen samples from larger communities [...] In summary, we have demonstrated that clinical NP/OP [Nasopharyngeal/ Oropharyngeal] swab specimens in VTM [viral transport media] can be pooled and tested for the presence of SARS-CoV-2 without sacrificing sensitivity. Pooled testing is a resource-efficient strategy for the detection of early community transmission of COVID-19."

4 INTELLIGENCE

Intelligence is defined as knowledge of the enemy. With our three pillars of education, healthcare and research, we were well placed in 2020 to contribute knowledge not just about the medical aspects of novel coronavirus but also ways to mitigate its impact on education.

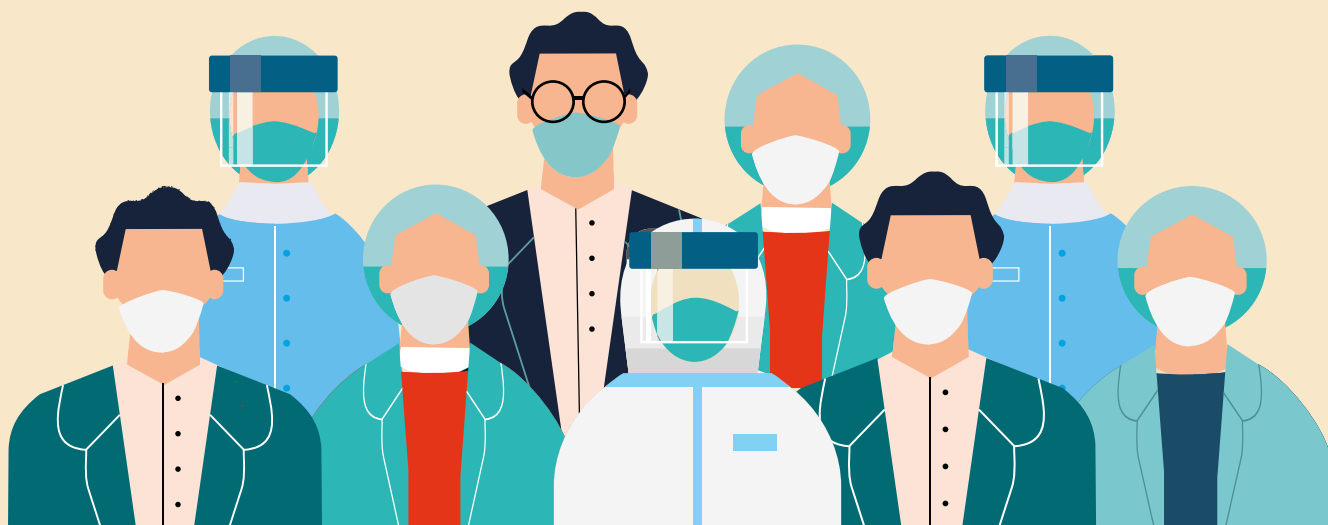
From webinars to public service announcements and symposia, from journal articles to advice given by IMU Healthcare officers, we shared what we discovered and learned about COVID-19, and we created platforms for others to do the same.



Understanding the dynamics of COVID-19

In November, an article by IMU Biomedical Science students was published by the *British Journal of Biomedical Science*. "Understanding the Dynamics of COVID-19; Implications for Therapeutic Intervention, Vaccine Development and Movement Control". This article was written by Tan Hui Zhe, Thang Wen Jun, Ter Hui Chee and Wan Muhammad Shafiq Wan Adnan under the guidance of Dr Shamala Salvamani and Prof Anthony Rhodes.

As noted by IMU's School of Health Sciences, the article provided a timely summary of "the COVID-19 virus, SARS-COV2's inherent and yet elusive nature in eluding all forms of therapeutics and actions taken to control its highly evolving infectivity; the constant need for biotechnology and biomedical science to come up with ways to match their evasive and infective capabilities; the need for studies to determine the prevalence of innate immunity in communities; and finally, strategies to distribute the vaccine, once available."



5 EQUIPMENT

COVID-19 is a respiratory disease and, in severe cases, every breath becomes a battle. In March, we donated two units of ICU ventilation and monitoring systems, costing RM190,000, to two Ministry of Health hospitals: Hospital Tuanku Ja'afar in Seremban and Hospital Enche Besar Hajjah Khalsom in Kluang. Both these hospitals are our long-term partner teaching hospitals.

In October there was a surge of cases in Malaysia, with Sabah being the worst-affected state. Through IMU Cares and the IMU Alumni Office, IMU donated 5,560 units of N95 masks worth RM50,000 to frontliners in Sabah via the Sabah State Health Department. The masks were delivered by the Royal Malaysian Air Force.

Also in October, our Community Engagement Department discovered that one of our community partners, Shalom Education Centre, was in need of a television set. The Centre, which provides learning opportunities for Myanmar refugee children, had to move classes online due to space and travelling constraints, and their existing TV was simply too small for all the students to view and learn effectively. We quickly received three offers of help from IMU staff, and delivered a TV the day before the CMCO was enforced.

Apart from these contributions, many members of the IMU community donated and contributed in various forms to those in need.



Staff at Hospital Enche Besar Hajjah Khalsom in Kluang with the new ventilator donated by IMU.



RESEARCH

INSTITUTE FOR RESEARCH, DEVELOPMENT AND INNOVATION

Research is a top priority at IMU, with projects spearheaded and coordinated by the Institute for Research, Development and Innovation (IRDI). We adopt a multidisciplinary and integrated approach as we work on advancing knowledge in bioactive molecules and drug delivery; cancer and stem cell research; environmental and population health; translational research; and health professions education research. We are committed to providing comprehensive support to our researchers as they endeavour to make significant contributions to science, healthcare and education.

2020 highlights

- Robust response to the COVID-19 pandemic, with IMU being the first private university to perform diagnostic testing for the Ministry of Health
- RM2.58 million in external research funding, up 18% from 2019
- Record 14 projects with funding from the Fundamental Research Grant Scheme (FRGS)
- 438 publications, 80% in Tier 1 and Tier 2 journals
- Three IRDI researchers/IMU faculty members on World's Top 2% Scientists list

COVID-19

As a research institute, our priority in 2020 was not just to manage the impact of SOPs on our usual activities for the year, but to also refocus our energies on new imperatives in the fight against COVID-19. Many staff members and funding partners pivoted in their work to support this vital research, and IRDI and IMU quickly organised resources and support for dozens of projects.

In March, as public health laboratories found themselves overwhelmed, IMU became the first private university to help conduct diagnostic testing. The IRDI team also developed a novel strategy for screening that could help increase testing capacity, a valuable advantage during periods of high demand (see “IMU Advanced Microbiology Collaborative Research Laboratory” below).

Several community organisations generously supported our efforts. To help address the shortage of reagents for carrying out diagnostic tests, Lions Club KL City donated RNA extraction kits. We also received personal protective equipment (PPE) from the Esplanade Residents Association (ERA) and Kong Long Huat Chemicals.

In working to unravel the mysteries of COVID-19, we made sure to tap one of our greatest resources: the intelligence and creativity of IMU students. To encourage investigation of the increasingly vital role of technology in managing the pandemic, IRDI and the IMU Scholar Committee (a student organisation) jointly organised a Research Hackathon in “Combating COVID-19” for undergraduate and postgraduate students. Three projects received RM20,000 in research funding to develop proof-of-concept solutions to manage the country’s COVID-19 challenges.

It should be noted that as we rolled out these urgent responses to COVID-19, we also stayed focused on our long-term roadmap, the IRDI Strategic and Action Plan 2018-2023 (Fig. 15).

Centre for Cancer and Stem Cell Research (CCSCR)

The aim of our work here is to reduce the burden and eliminate the adverse outcomes of cancer. Recent scientific discoveries have been made in areas such as:

Advancing understanding of immune evasion in pancreatic cancers. By analysing more than 9.9 million gene signatures derived from patients and state-of-the-art molecular biology techniques, the group has discovered 67 genes that govern fundamental biological circuits where tumour cells can trick immune cells and not be recognised.

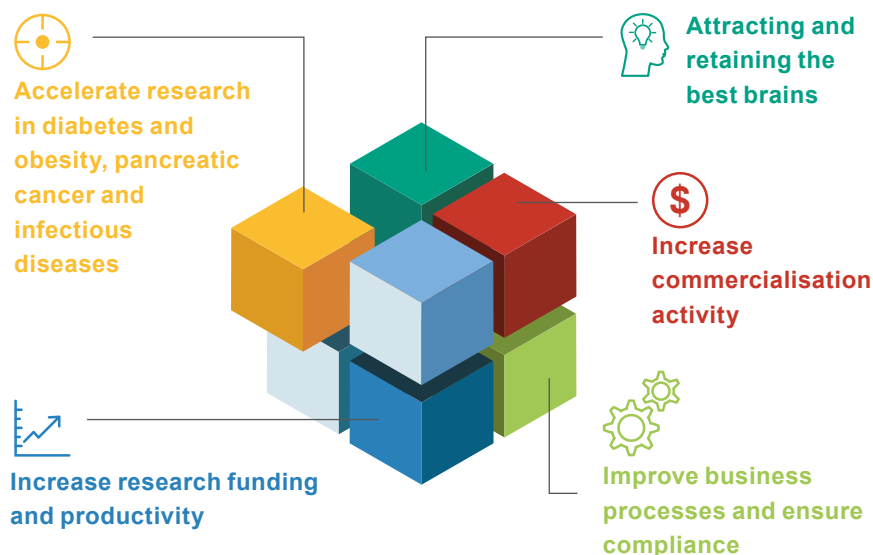


Ready to battle COVID-19. (left column, from top) Dr Elaine Chan Wan Ling, Lim Khai Lone, Dr Tan Boon Keat, A/Prof Dr Wong Siew Fung, Dr Nur Alia Johari, Siti Nurul Husna, Yong Lee Mei. (right column) Dr Chan Kok Keong, Dr Kenny Voon Gah Leong, Dr Khaw Loke Tim, Dr Wong Siew Tung, Nurul Hanis Ramzi, Siew Lye Kuan, Norbazlin Md Marham.

Fig. 15

IRDI Strategic and Action Plan 2018-2023

At the heart of the Plan is the aim of elevating IMU to a position of academic leadership and providing support for research, scholarship and creativity in a careful, strategic and cost-effective way. With big data analytics as an overarching enabler, the Plan's five strategic initiatives are:



Targeting breast cancer stem cells.

Breast cancer stem cells, by virtue of their relative resistance to radiation and cytotoxic chemotherapy, may contribute to treatment resistance and relapse. A team led by Dr Lim Chooi Ling and Hii Ling Wei has elucidated pathways that regulate these cells, leading to the identification of potential therapeutic targets. A number of agents are currently entering clinical trials. The team's work was recently published in *Cells and Breast Cancer Research and Treatment*.

Epigenetic landscape of nasopharyngeal carcinoma.

A team led by Prof Leong Chee-Onn and an international consortium has shown that nasopharyngeal carcinoma (NPC) tumours have comparatively low mutation rates, widespread hypermethylation and frequent copy number alterations and chromosome abnormalities. The team has provided an updated overview of the genetic and epigenetic aberrations that likely drive NPC development and progression.

Collaborative Drug Discovery Programme.

This programme, led by Dr Lim Wei Meng, aims to help investigators test their compounds in disease-relevant, cell-based primary assays and sophisticated, state-of-the-art in vitro phenotypic or target-based assays that provide biological characterisation of the compounds. To date, the programme has generated more than 40 publications in high-impact journals.

Centre for Environmental and Population Health (CEPH)

The effects of rapid urbanisation and climate change on health are among the issues at the heart of the Centre's research, which adopts a population health approach that aims to improve the health status of the entire population and reduce inequities in health status among population groups. The Centre focuses on the synergy between the environment and population health.

Indoor Air Quality (IAQ) Research. In 2020 CEPH continued this programme at five primary healthcare settings (i.e. community clinics) in Selangor. Areas of investigation include changes in air quality indicators associated with the number of patients at clinics, various indoor air pollutants and risk of transmission of a particular disease from one patient to another. The aim is to recommend appropriate interventions in identifying and regulating potential indoor air pollutants and ensuring patient safety.

D-MOSS. With HR Wallingford and the Institute for Medical Research (IMR), IRDI is developing an early warning system “Dengue Mosquito Simulation from Satellites” (D-MOSS) that forecasts the likelihood of future dengue epidemics in Malaysia up to eight months in advance.

Smart Partnership Initiative for Polar Research. Under the IMU-YPASM Smart Partnership initiated in 2015, IMU researchers remained involved in polar research in 2020, mainly addressing issues related to climate change and environmental pollution.

Centre for Bioactive Molecules and Drug Delivery (BMDD)

BMDD facilitates and supports a continuum of research and development activities from discovery of bioactive molecules and development of delivery systems to clinical trials. The Centre consists of experts in molecular biology, chemistry, pharmacology/toxicology, and formulation/drug regulatory affairs. Accomplishments in 2020 include the following:

- A Malaysian patent with the title “Culture Medium for Bacteria” was filed in November.

- Dr Lee Choy Sin secured a research grant worth RM630,000 from the Malaysian Palm Oil Board.
- Dr Hira Choudhury and Dr Dinesh Kumar Chellappan were listed among the world’s top 2% of scientists in the field of pharmaceutical sciences.
- A research proposal in collaboration with the Herbal Medicine Research Centre, IMR, was submitted for Ministry of Health funding.
- Kit-Kay Mak, in collaboration with the Wellcome Centre for Anti-Infectives Research, UK, constructed the vector for Mycobacterium tuberculosis specific protein kinase G, which may be used for high throughput screening for antitubercular compounds targeting protein kinase G.
- The new antitubercular compounds targeting mycobacterial protein kinase G were designed using AtomNet, an artificial intelligence platform.
- In-house compounds were sent to the National Institute of Allergy and Infectious Diseases (NIAID), USA, for antitubercular screening. Two compounds were found to be promising, with activity in the sub-micromolar range.
- A collaboration with the Malaysia Genomics Institute was initiated for testing the binding affinity of the compounds using surface plasmon resonance equipment.

Centre for Translational Research (CTR)

CTR aims to transform the way scientists and clinicians conduct their research and patient

“COVID-19 has taught us that in the face of a global health crisis, collaboration is paramount.”

– Prof Datuk Dr Lokman Hakim Sulaiman
Director, IRDI.

care respectively, to ensure that translation is included automatically in day-to-day research activities, with discoveries moving from the laboratory to the bedside and vice-versa.

Seremban Diabetes Cohort (SeDia).

Malaysia has the highest incidence of diabetes in Asia. This programme aims to use a combination of approaches at population and individual levels to understand the complex interplay between lifestyle, environment, genetics and socioeconomic development in contributing to the increased prevalence of type-2 diabetes and how to address it.

Health Policy and Systematic Review

Group. Systematic reviews help address the need for up-to-date evidence on best practices in healthcare. Since 2018, the Systematic Review Group led by Prof Cho Min Naing has supported the synthesis of health policy and systems research in low- and middle-income countries through the establishment of a systematic review programme. The Review Group focuses on addressing questions of how to improve health systems. More than 50 systematic reviews and review protocols have been produced so far.

Initiatives in digital health

IMU-Fusionex AI Laboratory. IMU and Fusionex International established the country's first AI-powered medical R&D laboratory in 2019 to develop research and training focused on innovation in data

science and big data analytics, evidence-based decision-making, and education and healthcare services.

IMU-MMU-UKM Artificial Intelligence in Digital Pathology (AI4DP) Research Consortium.

In this Consortium with Multimedia University (MMU) and Universiti Kebangsaan Malaysia (UKM), we will develop state-of-the-art AI computer vision technology to address the diagnostic needs in histopathology (tissue level) and cytopathology (cellular level). Short-term objectives focus on the development of computer-aided detection and diagnosis (CAD) systems for various cancer sites/types.

AI in Healthcare Forum. Following the launch in 2019 of our Annual Seminar and Forum on Healthcare Big Data Analytics, we organised a webinar on 25 November 2020 titled “AI in Healthcare: Discover the AI Methods & Toolset to Revolutionise Healthcare” with UKM, MMU, Asia Pacific University of Technology and Innovation (APU), and Fusionex International. Apart from featuring the latest advancements and real-life examples of AI, the webinar highlighted issues related to dataset, biases, trustworthiness, human factors, and ethical and legal challenges involved in AI applications in healthcare.

IMU Advanced Microbiology Collaborative Research Laboratory (IMU-AMCRL)

COVID-19 Diagnostic Laboratory for Ministry of Health.

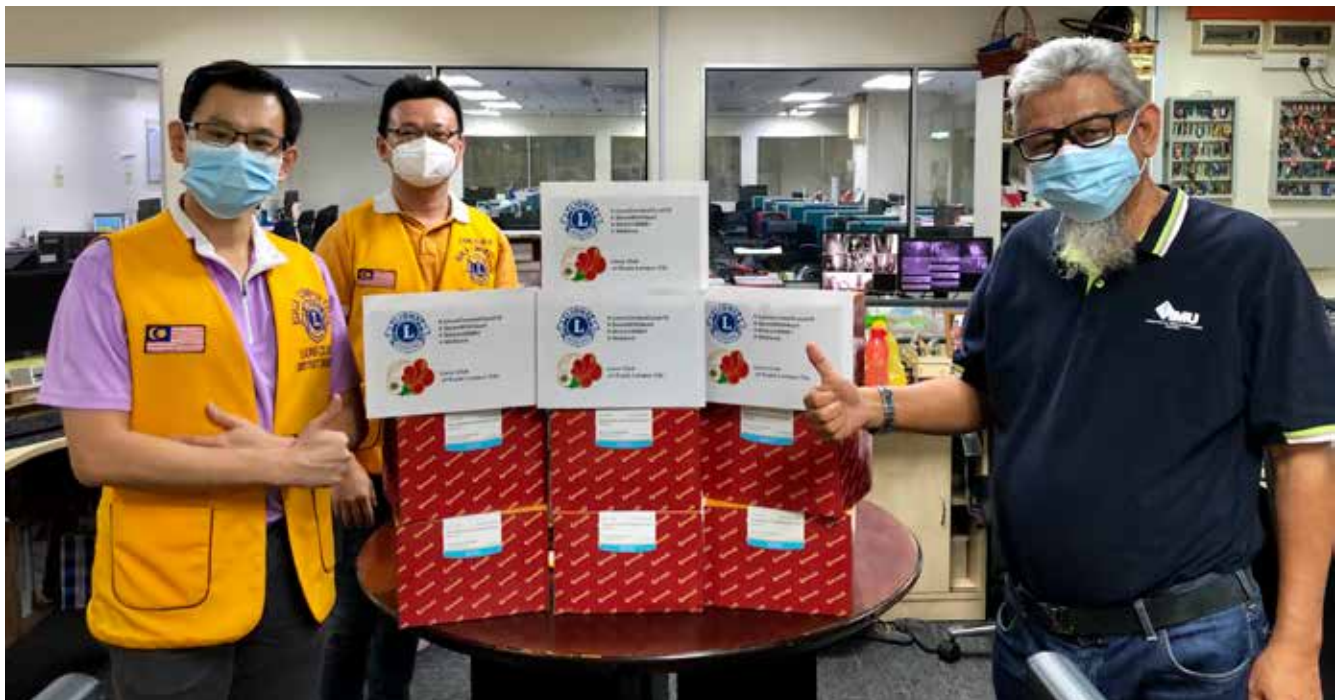
In March, the IMU-AMCRL was invited by the Ministry of Health Malaysia (MoH) to perform SARS-CoV-2 diagnostic testing to help the National Public Health Laboratory (NPHL) process the growing number of samples. IMU was the first private higher education institution to

help conduct diagnostic testing, using real-time reverse transcription polymerase chain reaction (qRT-PCR). The IRDI team provided the service for MoH daily from 27 March until 16 May 2020.

While running the COVID-19 diagnostic laboratory, the IRDI team developed a novel sample pooling strategy for cost-effective, large-scale diagnostic testing. The strategy involves obtaining pools of ten clinical swab specimens from the nasal pharynx or oropharynx, with the pooled specimens subsequently tested by qRT-PCR. The IRDI team successfully demonstrated that the pooled testing strategy showed similar detection sensitivity to individual sample testing.

COVID-19 community survey at IMU Bukit Jalil. In October, the IRDI team led

by Prof Patricia Lim as principal investigator initiated a COVID-19 surveillance project titled “Prevalence of COVID-19 amongst IMU Staff and Students in Bukit Jalil: A Community Survey” (Oct 2020-Feb 2021). With real-time PCR testing of nasal swabs and the seroprevalence of antibodies to COVID-19 using a rapid diagnostic test on finger prick



IRDI was fortunate to receive generous support from several communities for its efforts in sample testing. (top) In April, Kong Long Huat Chemicals donated medical coveralls, masks and sanitiser. (above) IRDI also received RNA extraction kits for COVID-19 testing donated by Lions Club KL City to help address the shortage of reagents to carry out diagnostic tests.



Testing, testing

IMU was the first private university to help the Ministry of Health with diagnostic testing during the pandemic. Our experience in converting the IMU-AMCRL into a dedicated COVID-19 diagnostic laboratory, and our development of a novel sample pooling strategy, were both documented in journal articles.

- Lim, P.K.C., Ayob, A., Lim, K.L., Wong, S.F., Voon, K. & Sulaiman, L.H. Editorial. COVID-19 – A Malaysian Private University's Immediate Response to Provide Testing Services. *International e-Journal of Science, Medicine and Education (IeJSME)* 2020 14(2): 1-4.
- Lim, K.L., Johari, N.A., Wong, S.T., Khaw, L.T., Tan, B.K., Chan, K.K., et al. A Novel Strategy for Community Screening of SARS-CoV-2 (COVID-19): Sample Pooling Method. *PLoS ONE*. 2020;15(8):e0238417. Available from: doi: 10.1371/journal.pone.0238417.

blood samples, the study aims to shed light on the epidemiology of COVID-19 and ensure that sufficient safety measures have been put in place.

Supporting researchers

In 2020, we restructured Research Support Services to better assist our researchers in all aspects of their work, including securing

funding, working with partners, undertaking knowledge exchange, engaging external stakeholders, demonstrating impact and ensuring good research practice.

To make it easier for IMU authors to publish in open access (OA) journals, IMU's Financial Support for Open Access Journal Publication provides funds when no alternative funding

Fig. 16

IRDI's Core Facilities



RNAi
Core Facility



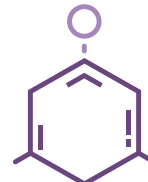
Cell Repository



Microbial
Repository
Core Facility



Collaborative
Drug Discovery
Programme



Biostatistics
Core Facility

is available. In January, we also initiated a certificate programme (Enago Learn's Academic Writing and Publication) to guide IMU researchers on the publication process.

Through the Collaborative Institutional Training Initiative (CITI), IRDI provided free courses to IMU researchers in 2020. The CITI programme offers courses on research ethics, compliance and professional development education.

In terms of technologies, our five Core Facilities provide the latest technologies, specialised expertise and technical support in various medical and biomedical research areas. These resources offer access to state-of-the-art technology at an affordable cost

and are available to both IMU and non-IMU faculty and researchers (Fig. 16).

Research commercialisation

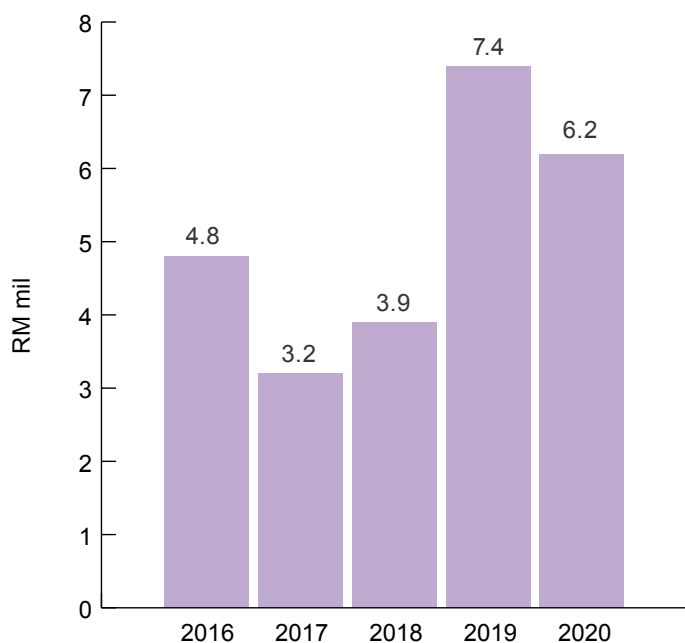
Renovation of the IRDI Research Laboratory began in December 2020 to address issues of regulatory compliance and improve overall laboratory safety, as well as to make room for the new Centre for Analytical and Pharmaceutical Service (CAPS). CAPS will offer industries laboratory testing services such as sample testing for microbiology, chemistry and pharmaceutical analysis. Two new testing services for detection of heavy metals in cosmetics and herbal products are ready to be offered.

“As scientists and public health experts rush to find solutions to contain the spread of COVID-19, existing and emerging technologies are proving to be valuable. It is urgent and crucial for us to discover ways to use technology to contain the outbreak and manage future public health emergencies.”

– Prof Datuk Dr Lokman Hakim Sulaiman
Director, IRDI.

Fig. 17

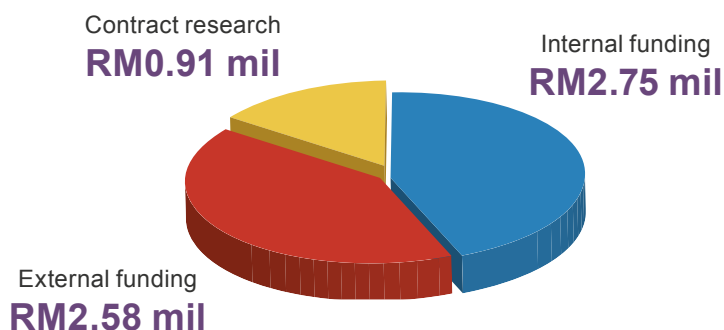
Total research funding



Fundamental Research Grant Scheme



Total research funding in 2020: RM6.24 mil



Research funding and publications

The total amount of external funding received increased from RM2.17 million in 2019 to RM2.58 million in 2020. Sixteen new projects were supported by external grants from the Ministry of Higher Education (MoHE) under the Fundamental Research Grant Scheme (FRGS), the Yayasan Penyelidikan Antartika Sultan Mizan (YPASM) Research Grant and the Research Excellence Consortium (REC) grant. A record number of projects (14) received FRGS funding. Internal funding from the University totalled RMRM2.75 million and went to supporting faculty, postgraduate and undergraduate research (Fig. 17).

The total number of Scopus-indexed publications increased significantly from 308 in 2019 to 438 publications in 2020. Approximately 80% of the articles were published in Tier 1 and Tier 2 journals.

Another highlight of 2020 was the inclusion of three IRDI researchers/IMU faculty members (A/Prof Dr Chandrashekhar T Sreeramareddy, Dr Dinesh Kumar Chellappan and Dr Hira Choudhury) in the World's Top 2% Scientists list compiled by Stanford University, USA and published by *PLOS Biology*.

Moving forward

As we enter the fourth year of the IRDI Strategic and Action Plan in 2021, we anticipate an environment of continued global unpredictability. We remain confident that our strategic plan, along with all the resources at our disposal, will enable us to stay productive and competitive. We will also seek more opportunities for collaborations with partners to ensure that the IMU research community continues to be an important contributor of ground-breaking research and real-world solutions.



SERVING THE COMMUNITY



COMMUNITY ENGAGEMENT

The IMU Community Engagement (IMU CE) Department articulates and implements all of the University's community engagement initiatives. We seek to build partnerships with local and international organisations in order to engage and build capacity among staff and students as we work towards sustainable community programmes in line with the anchoring pillars of the University.

2020 highlights

- Launch of the COVID-19 Fund & COVID-19 Humanitarian Aid Mission
- Advocacy and social innovation programmes for a sustainable future

Responding to crisis

This year, IMU CE prioritised communities that were affected by the pandemic as well as the frontliners who were in urgent need of assistance. We undertook more than 66 initiatives to provide personal protective equipment (PPE), basic necessities, medication and equipment urgently needed by facilities managing COVID-19 patients. This was done through the mobilisation of funds amounting to more than RM350,000, as well as through collaborations between IMU staff and external sponsors and organisations.

In support of our healthcare frontliners, IMU donated two ventilators worth RM190,000 to Hospital Tuanku Ja'afar in Seremban and Hospital Enche Besar Hajjah Khalsom in Kluang. In Sabah, the University together with IMU CE and the Alumni Office donated 5,560 units of N95 face masks to frontliners through the Sabah State Health Department. We also distributed PPEs and sanitiser to frontliners in several hospitals and the Kajang Prison. Staff and students also came together to fabricate face shields and mask ties for hospital frontliners.

IMU CE also worked together with refugee community partners to help sew cloth masks



Serving the Community



Women of a refugee community sewing face masks to be sold to generate income.

for IMU staff and students as well as disposable gowns and head covers, which were donated to hospital frontliners. This project helped both the receivers of the masks as well as those making them as it provided substantial incomes for the refugee community. The refugee community also gained skills from this project that will continue to help generate income from handsewn bags, face masks and other household items.

Beyond volunteerism

We cemented our dedication to expand community engagement beyond volunteerism by taking on social innovation initiatives with the launch of the Advocates for Community Engagement (ACE) programme. The ACE

programme saw students honing their skills in social innovation, developing meaningful fundraising projects for communities, and developing advocacy and policymaking skills through various platforms and channels and through mentorship with experts.

We also signed a Memorandum of Understanding with Social Entrepreneurship Academy (SEA) Malaysia. SEA Malaysia is a part of an international network of hubs in over 12 countries that supports people and organisations involved in social change through various learning programmes that focus on leadership, enterprise, personal development and social impact. SEA Malaysia conducted a four-day workshop on Design



Students at the Design Thinking and Social Entrepreneurship workshop.

Thinking and Social Entrepreneurship at the University. It is our hope that this will present more opportunities for both IMU staff and students to spearhead community transformation projects.

IMU CE marked its first participation in this year's Hult Prize Challenge organised by the Hult Prize Foundation. Dubbed the "Nobel Prize for students", the Hult Prize is a global platform for college and university students to drive social change through social entrepreneurship. One of our students,

Chiah Ruey Chee, was appointed Campus Director leading the IMU's first Hult Prize Organising Committee. A total of six teams participated in this year's challenge, with the theme "Food for Good: Transforming Food into a Vehicle for Change".

Developing international collaborations

On 11 August IMU signed an MoU with the International Surgical Society (InciSioN) Malaysia, the Malaysian Institute of Road Safety Research (MIROS) and DriveMark to raise awareness about road traffic accidents through a nationwide "Safe Drive, Saves Lives" campaign. Through this partnership, IMU – which is also part of the Global Youth Coalition for Road Safety – provided an additional platform for students to contribute to a larger community beyond Malaysia.

IMU CE also collaborated with the Young Southeast Asia Leaders Initiative (YSEALI), a programme coordinated by the US Embassy



Cementing the partnership with MIROS, InciSioN and DriveMark to initiate the "Safe Drive, Saves Lives" campaign.

in Malaysia. This programme seeks to initiate a Youth Community Engagement Series to discuss various social issues pertaining to the University's anchoring pillars for community engagement. The programme speakers were Dr Richard Teo, an IMU and YSEALI alumnus, and Abi Marutama, a YSEALI alumnus currently working in the Indonesian Ministry of Law and Human Rights as a human rights analyst. The inaugural session saw participation of staff and students who were involved in serving disabled communities, as well as invited guests from YSEALI.

Opportunities within challenges

The pandemic had curtailed many physical activities but, in return, it offered us the opportunity to engage beyond geographical barriers. Our webinars on "Empowering People with Disability – Creating a Better Society" brought together speakers and participants from the USA, Austria and within Malaysia, while the webinar on the "Role of Universities in Shaping a Better Post-COVID World" engaged experts and participants from the UK, USA, Singapore and Southeast Asia.

Chariofare 2020 also challenged students to think about alternative methods in view of the COVID-19 restrictions. In the end, in place of the physical one-day carnival and charity run, various inventive fundraising ideas were used to encourage virtual participation, such as interactive webinars, e-sports, online sales, fitness challenges and a virtual run. These were held from August to December to raise funds for the IMU COVID-19 fund.

Reaching out to communities

Despite the restrictions and challenges we continued to reach out to communities to ensure that they kept safe and healthy and, where possible, planned activities were carried out.



Students engaging with people with disabilities to better understand their everyday challenges.

The District Partner Initiative

At the School of Health Sciences (SOHS), the Nutrition and Dietetics Division (N&D) is collaborating with state Health Departments to raise awareness of anaemia. In Selangor, the project will run from 2020 to 2024 and is currently in the planning stages. In Negeri Sembilan, the project will focus on anaemia in reproductive health and will start with the collection of baseline information from pregnant women at selected clinics in the state.

PPR Desa Petaling-Kospen Project

N&D and the Institute for Research, Development and Innovation (IRDI) ran health

screening and health promotional activities including nutrition to target behaviour-related and lifestyle factors for pre-diabetes prevention. The project also included a research component to understand the risk factors in this group.

Ti-Ratana Welfare Society

SOHS' Applied Biomedical Science and Biotechnology Division (ABSB) initiated an "Upcycling of Hotel Linen" project with the Ti-Ratana Welfare Society. Students taught participants how to upcycle hotel linen into products such as hand towels. During the lockdown, the Nursing school provided monitoring of physical and mental health for Ti-Ratana beneficiaries. The Division also helped organise activities such as exercises, music and dance therapy and art therapy.

Spastic Children's Association of Selangor & Federal Territory

In February, ABSB led a community service visit to the Spastic Children's Association of Selangor & Federal Territory where students worked with several academic staff to conduct interesting practical activities with the residents, including food art and jigsaw puzzles to encourage use of motor skills.

First 1,000 Days of Life Project

Together with Community Transformation Initiative (CTI) – a non-profit organisation working among the urban poor in Kota Damansara – N&D students helped to address the concerns of pregnant women and mothers with children below two years of age at Program Perumahan Rakyat (PPR) Kota Damansara.

Do Right, Be Bright

This project encompassed student-centred interprofessional learning (IPL) and addressed



Participants learning to upcycle hotel linen.

the health needs of kindergarten children. Participants included kindergarten students from Beacon House, Sri Petaling and the Kuala Lumpur Chinese Taipei School, Kota Kemuning. The project brought together faculty and students from the Schools of Dentistry, Medicine and Health Sciences.

Moving forward

IMU CE has formulated a strategic plan to develop excellence in community engagement for the University. Its aim is to transform students and build well-rounded graduates by allowing them to experience the challenges faced by the communities around them, and to be part of the solution.

Underpinning this is the development of a social innovation and entrepreneurial mindset which will ensure sustainable solutions are achieved in addressing societal challenges. This will build the capacity of both the University and its students.

We hope to make the University the “Pulse of the Community”, such that IMU and the community can grow together and form sustainable and impactful partnerships in the future.



Student volunteers of the First 1,000 Days of Life project.

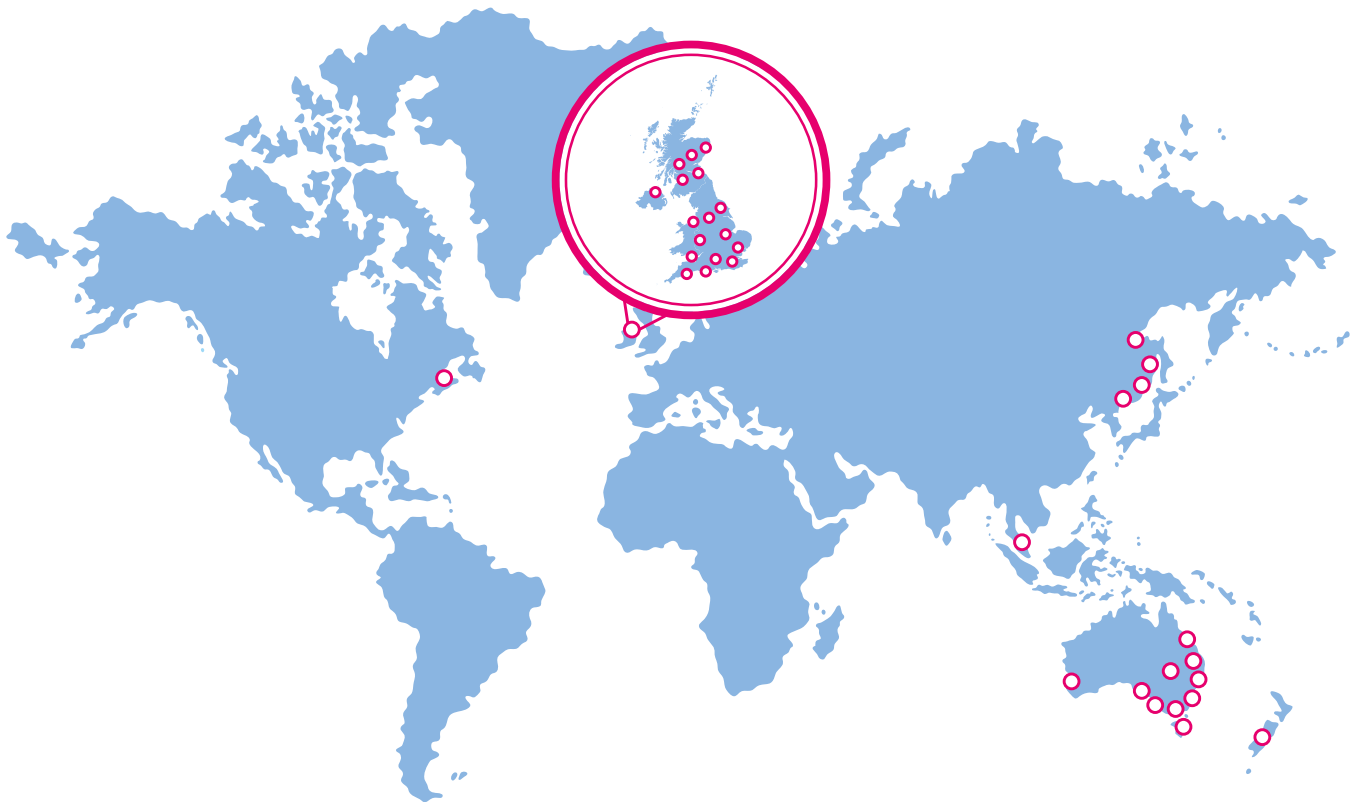


“There was an opportunity for something positive and together we made it happen as a community.”

– Prof Khoo Suan Phaik
Dean, IMU Community Engagement.

IMU IN THE WORLD

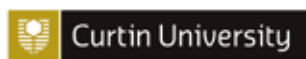
PARTNER UNIVERSITIES



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 33 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 degrees on more than 3,000 individuals. Having established itself as a household name in Malaysia, IMU is set for international recognition.

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