



Editors: Joon-Wah Mak, Patricia Kim-Chooi Lim & Ivan Kok-Seng Yap This book is dedicated
to students, staff, alumni,
partners and supporters of
the International Medical University.

# Contents

| —— 03          | Part 1: Reflections of a Founder of The IMU By Mei-Ling Young   |
|----------------|---|
| <del> 17</del> | Part 2: The Journey – Past, Present and Future  |
| 19             | <b>Chapter 1: Introduction</b> By Tan Sri Dato' Dr Abu Bakar Suleiman   |
| 25             | <b>Chapter 2: IMU as a Learning Organisation</b> By Victor Lim  |
| 31             | <b>Chapter 3: IMU – A Community of Scholars</b> By Joon-Wah Mak, Michael Thomas Haneline, Sivalingam Nalliah Geok-Lin Khor, Nilesh Kumar and Stephen Ambu                                     |
| 38             | <b>Chapter 4: Research Activities, Management and Oversigh</b> By Tan Sri Dato' Dr Abu Bakar Suleiman and Joon-Wah Mak  |
| 46             | Chapter 5: Medical and Health Education in IMU – Evolution of the Curriculum By Victor Lim, Sivalingam Nalliah, Nilesh Kumar, Hla Yee Yee, Ramesh Jutti, Siang-Tong Kew and Kandasami Palayan |
| 60             | <b>Chapter 6: Human Capacity Building and Quality Issues</b> By Peter Pook and Francis Wen  |
| 66             | <b>Chapter 7: IMU Clinical and Healthcare Services</b> By Siang-Tong Kew, Kandasami Palayan, David Wong, Verna Lee, Allan Kah-Heng Pau and Teddric Jon Mohr                                   |
| 75             | Chapter 8: Activities under the IMU Cares Programme<br>By Kok-Hai Ong and Mei-Ling Young  |
| 82             | <b>Chapter 9: The Future</b> By Tan Sri Dato' Dr Abu Bakar Suleiman   |
| <del></del> 88 | Part 3: Key Personnel and Senior Staff of IMU   |

# **PART ONE**REFLECTIONS OF A FOUNDER OF THE IMU



#### Reflections of a Founder of The IMU

#### Mei-Ling Young

#### Introduction

The International Medical College (IMC) was established in 1992, although work on it started from 1990. In 1999, IMC was granted university status and became the International Medical University (IMU). It was the first private medical college and the first private medical university in Malaysia. From the first intake of 73 students in medicine, today there are nearly 3400 students in health-related courses. As in its original mission, IMU is now planning its Academic Health Centre (AHC) consisting of a constellation of different levels of healthcare facilities from clinics to a tertiary hospital in its aim to become a high quality healthcare university.



#### Why did we start the IMC?

In 1990, there was a serious shortage of doctors. The doctor: population ratio was 1: 2569. Besides, rural areas did not have enough doctors as most concentrated in the urban areas. There were only three public medical schools: University of Malaya (UM), University Kebangsaan Malaysia (UKM) and University Sains Malaysia (USM), which produced about 300 doctors annually. Places were limited.

It was very difficult for Malaysians to get into the established medical schools overseas because medical education is heavily subsidised, thus, a strict quota on foreign students. The Malaysian student will have to compete with the rest of the world to get one of those scarce places.

Even if students get the place, they will need to be able to pay the full tuition fees of an international student, not including the cost of living, etc. What this meant was the loss of talent for our country. Students who had the necessary ability could not get a place in a local medical school and if they were accepted overseas they may not be able to afford it. We wanted to make medical education more accessible to a wider group of Malaysians.

We also wanted to make a difference. We wanted doctors who were ethical, caring and could communicate well. So much of the fear of the layman can be dispelled if he understood his health condition. To make that change, we knew it had to be in education. And education was the area we were comfortable in as we had been academics. The establishment of the IMC was a "conjuncture" where the right people and conditions all came together at the right time.



First intake of 73 students in medicine

Mei Ling Young



Kamal Salih

#### The People

Kamal and I were both social scientists and colleagues in USM.We taught in courses, ran conferences and professional associations, did research and published together. We loved doing new things and pushing boundaries.

Kamal started Development Studies, a somewhat radical section in the School of Social Sciences. It was the first of its kind in the country. Many of the younger social scientists who returned from aboard to USM in the mid-70's and 80's were idealistic, committed and worked to make a change. Among the subjects taught in Development Studies were underdevelopment, imperialism, class, poverty, unequal relations, gender, etc.

The Baling Incident in 1974 saw protests by farmers in Kedah and issues taken up by students and staff in USM. The rallies were against the injustice in a relatively rich Third World country. Soaring inflation and plummeting rubber prices caused severe economic hardship among rubber smallholders, culminating in the death of a child eating a poisonous wild yam. They spread to UM and other public universities, resulting in a 5000 strong protest in Kuala Lumpur. The students demanded that the government solve the inflation problem immediately, stabilise the price of rubber and remove corrupt ministers. The government arrested student leaders and lecturers and the Universities and Universities Colleges Act, 1975 was passed. All student organisations were dissolved resulting in an end to an era where student movements may have been an important political and social force of change.

The second radical event involving the young and idealistic faculty was the issue of brain drain. The Staff Association of USM stated there was a brain drain among public universities caused by the politicisation of the university processes, when universities were no longer autonomous enjoying academic freedom. This was picked up by the press resulting in the university administration bringing a court case against the Staff Association for "tarnishing the image" of the university. The staff won the case.

Those were heady days. The whole atmosphere was one of commitment, of wanting to change for the better with the daringness to try new things. Research was done at different levels. There was policy research on urbanisation, migration and transnational capital, the impact of urbanisation and industrialisation on young female Malay migrants to the semi-conductor factories. There were micro-level studies on traditional communities, such as the jetty dwellers. There was action research where disadvantaged groups such as the factory girls were educated on their rights to prevent exploitation by transnational companies. We supported NGO's, like Aliran, CAP, etc.



Saidi Hashim



Ong Kok Hai

Kamal and I left the university and were involved with another start-up. It was the Malaysian Institute of Economic Research (MIER), an independent thinktank. Because MIER was autonomous we were able to do independent research projects that were funded locally and internationally in wideranging areas, from macro- to micro-economics, fiscal policies, regional development, human resource, the labour force and education.

As educationists at heart, we wanted to continue in education. Thus, the idea of the IMC was born. We contacted Saidi Hashim, who later brought in Ong Kok Hai to help. They had with Kamal, established the medical school in USM, the first in the country using an integrated systems-based curriculum with problem-based learning (PBL) and fixed learning modes (FLM ) in the USM. Saidi contacted Ron Harden and Ian Hart, internationally renowned medical educationists who had already helped in developing the progressive USM medical curriculum. The six of us met at various times to develop this unique medical school, a never-done-before model.

It was exciting times as the concepts rolled out, with all of us having to do different things within a tight timeline. Kamal with his credibility as former Deputy Vice-Chancellor (Academic) at USM, and Director of MIER, already came with a reputation as an ideas man, a visionary and a university administrator that was prepared to try new things. He was also a budding politician. I was very keen as it was something innovative and a contribution to our country. I was known to be pragmatic, tenacious, an implementer with attention to details. Kamal and I complemented each other. We argued openly, thus getting the best out of us.

Saidi was also very conceptual and idealistic, as was Ong who was also caught up with the excitement and imagination of this project. Both of them had inroads into the government healthcare fraternity. Ong would come mostly on Thursdays and Fridays (USM's weekends in Kota Bahru) and worked with me



Ron Harden



lan Hart



John Beck



Patrick Forrest



Abu Bakar Suleiman

Ron Harden was the tough, driven medical educationist, absolutely tenacious in wanting to implement his concepts. Ian Hart, the man with soul, was gentle, and persuasive, with a great sense of humour. He complemented Ron. Whenever Ron pushed us too much to the wall, in his enthusiasm and faith in his views, it was always Ian who came in to defuse the situation. If I had to sum up the dynamics between the six of us, it was that we agreed to disagree. There was a strong sense of camaraderie, all driving in the same direction, to start this medical school within a tight timeline. I was the only one full-time on this project. I became the glue to all, the driver, the negotiator, the harbinger of good and bad news, the agent provocateur and the one who could be painfully honest and direct.

To make the IMC a success, the foundation dean and senior academics in the start-up must have immense reputation for credibility. Ron and Ian persuaded John Beck, a retired distinguished pathologist and scientist to be the foundation dean. Pat Forrest came later to check us out for the Edinburgh Medical School. Ian and I, at breakfast, persuaded him to be our first Associate Dean of Clinical Science and to set up the first CSU (Clinical Skills Unit) in this region. An eminent surgeon, he had the plausibility to argue with the PMS (Partner Medical School) that the IMC curriculum did not have to have dissection and far less anatomy than that in traditional curricula. Both John and Pat, despite their outstanding careers were prepared to take the huge risk to their reputation by joining us. They too were caught up by the imagination of this innovative and exciting project.

Abu Bakar Suleiman, the then Director General of Health believed that medical schools would help improve the quality of healthcare in hospitals when they are used for teaching. Because of this tenet, he had previously supported both the abortive Monash and later Sheffield medical schools in using the Ipoh General Hospital. Thus, the concept of using the MOH (Ministry of Health) hospitals for private medical schools was not unique to IMC. He had also been involved in medical education in the various public medical schools including USM and UKM. Like us, he too believed that education will make the change. He was open to new ideas, however extraordinary or unusual they were. No doubt, the fact that we had Ron, Ian and Saidi, who he already knew, as well as John and Pat also helped. We appraised him regularly of developments, organised for him to meet the deans when they came for the twice-yearly Academic Council (AC) and invited him to our CSU. Having the support of the MOH was critical for us.



First Academic Council Meeting in 1993



Official launch of the IMC

Sulaiman Daud was then the Minister of Education, and being a dental graduate of Otago, he was only too aware of the lack of doctors and dentists in the country and the difficulty in getting places for these professions in renowned medical schools. He was very supportive of the idea of the IMC and especially as it provided more opportunities for locals to study medicine.



IMC invited to be a university in 1998

Najib Abdul Razak, became Minister of Education in 1995. Although the IMC was already established, he was very keen that private colleges and foreign universities help to make Malaysia a regional hub of education. When the financial crisis struck in 1997-1998, and the ringgit fluctuated violently, he asked Kamal and I to fast track our own clinical school so that both private and government-sponsored students could complete their medical degree locally. Many could not afford the sudden escalation of costs if they were to transfer to a PMS.

We were given university status in 1999. We had less than a year to prepare the Phase 2 curriculum for the Clinical School and to build the Clinical School in the grounds of Hospital Seremban. This timeline was tighter as the facilities, curriculum and staffing had to be ready for the students already in the system.

John Bosco



Raman Subramaniam

#### John Bosco

John Bosco, the dean elect of the Clinical School was a highly respected academic clinician from UM. Owing to his reputation, he was able to attract many other clinical faculty to join the Clinical School. The fact that the IMC was already known, as students had transferred successfully, was a help. No doubt the challenge of a new and progressive curriculum, under the inspiring leadership of John was quite exciting. Just before the Clinical School was to open, John died suddenly. It was devastating.

#### **Raman Subramaniam**

Immediately the group got together and unanimously elected Raman Subramanian, another well-known obstetrician and gynecologist from UM in the team with John, to be the new dean and to continue the work on the curriculum. Everyone pulled together more strongly to ensure John's dreams for the full IMU medical degree would be a reality.

#### The Unique Partnership

It was a very simple concept. Students read their Phase 1 (2.5 years, 5 semesters) in Malaysia. On passing their examinations in the fifth semester they transfer to a PMS for the clinical years, another 2.5 - 3 years. They will get the degree from the PMS the student attends, a degree identical to students who have studied the full course there. This was a very important negotiating point as we did not want IMC students to have a "second class degree".

This would bring down the costs of the degree by half. But more importantly, the IMC model created another 230 - 260 extra medical places per year in renowned medical schools abroad. We had a choice to either do Phase 1 (generally called Medical Sciences) or Phase 2 (the clinical training) in Malaysia. We decided on Phase 1 in Malaysia for the following reasons. Scanning the medical education environment, we thought it would be easier to get lecturers in the basic sciences for a start-up project. It would be harder to get clinicians on board as

the country was already suffering from a lack of clinical lecturers. It would be an advantage to get students to start on a difficult programme immediately after school in their own home environment. Exposing students to their local healthcare environment at an earlier stage, we hoped, would give them the added confidence in the PMS. They may be more likely to return home after their degrees. They have been exposed to the Malaysian healthcare and would find it less alien. In addition, getting the best of western clinical training, and an internationally recognised degree would be very valuable for postgraduate training – already having a huge bottleneck in Malaysia.

#### The Curriculum

The curriculum was outcomes-based and "assessment to a standard" agreed upon by all PMS. They must also agree to accept whichever student is matched to them, without extra sieving processes like marks and interviews. The match, a very basic principle had to be accepted by all. The PMS has its choice of student, by ranking the student

based on information from IMC on the student. The student has his choice by ranking the PMS. As PMS wanted to minimise students who do not want to go to them, there was a loading of 5 for the student's choice. This is then computer-matched. In this curriculum, the basic sciences of biochemistry, physiology, etc. were integrated into the body systems eq. gastrointestinal. rather than studying the basic sciences, eg. biochemistry as a subject by itself, as done in traditional curricula. Clinical exposure started from the first semester in the CSU with manikins and simulated patients, and real life experiences in clinics and hospitals at different levels of healthcare delivery. It was blended as there were plenaries, PBL, and FLM. It was a "spiral" curriculum where the initial concept would be expanded as the student progressed. It embodied Ron's SPICES model for curriculum development.

The success of the curriculum is that it proved that the "core" could feed into medical schools that spanned three continents and six countries. It could prepare students for very traditional, lecture-based, curricula with extensive anatomy and dissection classes to very modern, progressive schools where all learning is PBL- based in an integrated systems approach. Students could transfer to undergraduate (school leavers) as well as graduate (need a first degree) schools. Finally, our students had to cope with different healthcare systems of training, from the basically British to the North American model where from the start, students work as part of the healthcare teams in the hospitals.

#### **The Challenges**

As expected of all developing projects, challenges evolve. The first challenge was to ensure that the MOE (Ministry of Education) accepted the idea of

such a unique educational project. There was no such precedence which proved daunting. Private education was in its infancy. As mentioned earlier, the support of the Minister was very important, and the fact that we had the credibility of Ron Harden, lan Hart and the local team who were all academics helped. The MOH was also critical in that we needed their clinics and hospitals for training. As mentioned earlier, the DG of Health was very supportive as was the Minister of Health, Chua Jui Meng. That it was also a very good cause – to help produce more doctors for the country, and the credibility of the team and the PMS deans were very important.

Armed with the support of these two critical ministries, we were ready to talk to potential PMS. We selected the universities carefully, as we did not want to be seen hawkering the project. The deans had to be at heart educationists, global in their world-view and keen to try new things. Networking through old school ties played a vital role.

For the PMS, the major challenges were their acceptance of an outcomes-based curriculum, where they had to take a student if they passed Phase 1 at the IMC. They had to agree on the principles of the match, and to accept the outcomes without imposing other criteria.

Another thorny issue was the entry qualifications. One major reason for the high entry grades needed to gain entry into these PMS through direct entry was the huge demand. Our argument was that as IMC is Malaysian, we should use the minimum entry qualification as practised in the Malaysian public universities. Of course, the minimum grades were not necessarily the "going-rate" owing to the huge demand compared to available places. And being educationists, these deans knew you

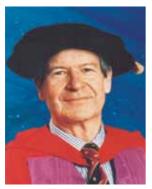


need not have 4A's to be a good doctor. It was very important that the deans that were in the negotiations were individuals who were confident, had the support of their vice chancellor, and faculty and were decision-makers.

The drafting of the contract was challenging, especially the issue of which court we have recourse to, in the situation of a legal case. We felt strongly that as IMC was Malaysian we should go by the Malaysian law. The complexity increased dramatically when the university's legal department got involved, especially in the case of Canada where laws were state-based. We stood firm, and were fortunate in that the caucus head (by region where the PMS were located) helped us solve the impasse.

All these challenges with the PMS faded with time, for when new PMS joined us, there had already been a track record. Thus, accepting all these principles which hold dear to the universities, was so much more easy.

The faith the initial deans had on John and Pat as well as the support of Ron and lan played a vital role. In the same vein, knowing that the government was behind us helped tremendously. To reinforce this, the AC members met Najib (MOE) and Abu Bakar (MOH). The credibility of our Board of Governors, which consisted of well-known community leaders, retired high-level



Michael Hamlin

government servants and industrialists was also important to boost confidence.

Initially, there were also concerns on the financial viability of the project. Were we able to sustain? The fact that Kamal was then venturing into business and my husband, a CEO of a large cement company gave some comfort. And importantly, the confidence-building factor - Michael Hamlin (Principal of Dundee University) involved directly in advising our financials gave the deans much comfort. Michael had the reputation of having turned Dundee around.

Once we had the first 40 places (20 from RCSI - Royal College of Surgeons, Ireland), and the rest from Dundee. Liverpool, Glasgow and Aberdeen, we were ready to start. Meanwhile, searching for a physical facility to house a medical school was no easy feat. We linked with KPJ (Kumpulan Perubatan Johor) who were building their Damansara Hospital in Taman Tun Dr Ismail. This was aborted as we guickly realised it could not be done in time for the first intake scheduled for November 1993. When we found the facility in Petaling Java, we renovated it in record time - just 2.5 months. Long hours were put in to get it completed just on time.

When Ian Hart suddenly brought in the Canadian Schools of Dalhousie, Alberta, Memorial, Western Ontario, Calgary and McGill as well as Thomas Jefferson in the US, we faced another challenge. Suddenly, the tables were turned, from not enough places to too many. The initial group of PMS demanded a quota system, based on the percentage of the original number they promised us, so that the North American PMS could also get a few students.

As there had never been a precedence of an MOH hospital being used by a private medical school, we went out of our way to get buy-in from all the MOH clinics and the Seremban Hospital. We met the clinicians and staff and tried our best to meet their needs.

As a start-up, the reputation of our faculty was very important to gain credibility. They were established names from overseas and gave faith to the AC and to the locals.

A continuous challenge was the suspicion of the public. If it could be done, why wasn't it done before? The local universities doubted it could even take-off. Later, they feared we would poach their staff.

The medical fraternity, a very influential community was full of distrust. Most of the doctors were products of traditional curricula. They and parents did not understand the new curriculum, especially as there were limited lectures and lecture notes (going against the tradition of teaching in our country) and no dissection. They did not understand that lecturers have to facilitate learning as part of being student-centred, rather than teacher-centred. Some even believed it was an attempt to cut down work and lecturers.

In November 1993, IMC took its pioneer batch of 73 students. Now began another set of challenges. We found that parents who sent their children to private institutions of higher learning were very demanding. They feel that they have paid a lot and therefore they have the right. Few understood that the tuition fees, even what is "full fees" in UK is a fraction of the real cost of medical education as it is massively subsidised. We continuously had to manage their complaints on facilities, the curriculum and its delivery.

Of greater consequence was to ensure that our students were educated well enough to be able to cope, to merge seamlessly when they transferred. It was particularly difficult to implement the new curriculum as all the faculties were trained in the traditional curricula. All efforts had to be made to ensure that the PBL's did not become mini-lectures, that more lectures (plenaries) were not creeping in, that our curriculum was truly student-centred and that faculty were facilitators of learning. It was a commitment to the pedagogy against great odds.

The quality assurance activities of the AC occurred twice a year where our curriculum, its delivery and assessment processes were scrutinised. In the early years, faculties of all levels were met by the deans, as were the students. It was a very complete accreditation exercise. the only difference were they consisted of deans from diverse medical schools implementing a variety of curricula. The fact that they were so concerned with IMC was understandable. Their reputation was also at stake, having sold this idea of the IMC to their VCs and faculty. They had to ensure that when the students transferred they were as good as the home-grown ones. Most of these medical schools had a huge reputation to protect, not to mention some with over 400 years history.

The tone of AC changed as we progressed. Ron was the Chair, savvy and strategic. Ian was the gentle unthreatening listener and negotiator. We would prepare ourselves way before each AC, papers written to inform of progress, explain why we could not attain what we had planned, what we would do to ameliorate that and how we are going to solve problems. We had to be very pro-active. We met before AC and debriefed after. As ACs were held every six months, we seemed to always be preparing papers for the next AC. I wrote regular updates for the deans. Only when the first tranche of students transferred in 1996 and were found to

be doing well, did AC become yearly.

In 1995, we put forward the suggestion of a double intake per year. The argument was that we wanted to capture the best students from all the different pre-university programmes wwith outputs throughout the year. Despite concerns that it had never been done before, ability to recruit more faculty for the expected increase in students, expanding the facilities, and the mechanics of how each intake would merge with the current ones, AC was persuaded. All preparations were made for the anticipated larger numbers. Too much was at stake to allow it to fail. To make it efficient, the new intake merged with the earlier cohort attending the classes for that particular body system. But after a few cohorts had gone through this way, we changed. We found that when new students merged with the older cohort on a particularly difficult body system, such as the CNS (Central Nervous System) they did not perform so well. We felt, pedagogically, it would be better to start all the students on the simpler systems, increasing the complexity as they progressed.

The drive for quality was not only by AC, but at a higher level by the ICC (International Consultative Council) which consisted of Michael Hamlin (Dundee), Jo Gonnella (Thomas Jefferson) and Aishah Ong. They concentrated on the governance and financial viability of the IMC initially (to give the deans confidence), then expanding to cover the quality of all the programmes.

When the students transferred successfully, the public view on the IMC changed. More PMS joined us after the initial five, thus giving us the numbers we needed, especially with the double intake. Joining us for the more recent PMS was less difficult as the older



Jo Gonnella



Aishah Ong

PMS were happy to share their good experiences and the MOUs were well-tested. There was precedence.

The next major challenge which hit the IMC and the whole of Asia, was the Asian financial crisis. With the uncertainties created by the fluctuating of the ringgit, some parents and the government were not able to send the students to continue at the PMS. Najib asked us to bring forward our plans to start the Clinical School in Seremban.

Again, we sought Ron and lan's help with the Phase 2 curriculum. We realised we had to get very credible faculty for this start-up. We asked John Bosco from the UM to head the project, and he, owing to his reputation, was able to draw a number of good academic clinicians to help with the curriculum. Yet again, we had to get the Clinical School up and running within a year as the students were scheduled to finish their Phase 1. They could not wait. The Clinical School was built within a year inspite of another lack of precedence – a private institution building on MOH land. Weekly evening meetings were held to develop the curriculum and study guides. A Clinical School Committee consisting of Ron, Ian as well as two very experienced deans from UK (Michael Orme) and Canada (John Ruedy) helped us with a modern curriculum. It was based on the eight outcomes. The concept of a "senior clerkship" in the tenth semester where the medical student behaves like a houseman in the hospital was introduced. This proved to be a great success as the IMU graduate was more confident and mature, having had six months of experience as a "shadow houseman" in the Batu Pahat Hospital. Just five months before the Clinical School was to start, tragically John died while playing tennis. The reins were taken over by Raman Subramaniam. who became the first dean of the

Clinical School. There was a flurry of activities as the timeline was very tight. Many approvals and permits had to be attained. Rapid decisions had to be made. Because of the recession, we could get established contractors who normally would not take on a small project. Thus, we were on time. In 1999, IMC became the IMU. The first cohort of students scheduled for the PMS went to the Clinical School in September 1999.

#### The Students

The fact that our students have been able to transfer successfully may be a testimony of not only the effectiveness of the outcomes-based curriculum but that they have become independent self-directed learners. To be sent to a foreign university, and not necessarily to the one you chose, mid-way in your studies, when friendships there have already been established, without your own friends from the IMU is difficult enough. On top of that, you have to quickly adapt to being in a strange country, where the culture and way of life is different. The food, weather, language (with all the colloquialism and nuances that are used in communicating with patients), and dealing with a whole set of new lecturers in a completely different learning environment can be extremely challenging. And you have to face all this without the support of family and close friends. There is no perfect transition into the curriculum of each of the PMS. The student has to make up the difference to be on par with the local students. The student's motivation and drive to succeed played a critical role.

#### Reflections

Why would the PMS join this project when their own medical schools are so over-subscribed? It was to be part of our exciting educational experiment in a very unique venture. It had never been tried before and conceptually was a test of the pedagogy. The IMU adventure meant that deans, who are experts in their own areas, and attended conferences for their own specialities are now drawn into our international partnership of education. Deans would meet nationally. But this was exchange across national boundaries and even different healthcare systems of delivery. The deans, of varying experience also learnt from each other. The AC was an intensive three days – all focused on the IMU. The exchange of ideas, concerns and negotiations occurred not only in the formal meetings but in the plane, along hotel corridors, buses and socials, not to mention their own private meetings.

For the North American schools which are all graduate entry, there was the sense of wanting to help a Third World country in producing more doctors. They also wanted to add diversity into their student population. Unlike the UK and Australasian universities, there has never been the long tradition of taking foreign students. Among the UK and Australasian schools, which are undergraduate, while helping Malaysia to produce more doctors was a reason, the IMU students also filled up the attrition of the clinical years. But this would only have been possible with excess clinical places for training. This partnership also provided extra income in the form of full tuition fees. There was no question that the compelling reason for the partnership for all, was the excitement of being involved in an untried, but pedagogically possible, model of transnational medical education.

I enjoyed working with them tremendously. I was their person in charge as Kamal, owing to his other interests was hardly here. I learnt a lot. I found it best to be honest and share the problems. Running medical schools that may take over half of a university's budget, deans were certainly very knowledgeable and perceptive. They were grounded, sympathetic and often admitted to me they wondered how their schools would have performed if 20 over deans swooped into their schools for three days and do what AC does to us. I often sought their advice and they were happy to share with us. They saw us as an "incubator of ideas" as we were, by their standards, small, simple and flexible. Thus, we were quick to do things and these results they could see, often with surprise. But the speed with which we achieved our ends continued to build up their confidence. There were instances where some aspects of the curriculum implemented by us successfully were taken back to their schools. Having AC and ICC which later morphed into PEAC (Professional Education Advisory Committee), IMU developed a culture of openness and a willingness to learn and to share.

Two important events stuck out in my mind, which showed their commitment to the IMU. The deans referred to the IMU curriculum as their curriculum. And when the recession struck, the PMS were prepared for us to redistribute students who were facing severe financial difficulties in the UK to New Zealand and Australia. In the same vein. the Principal of Strathclyde assisted Malaysian parents by holding the value of the ringgit stable, below the higher rate of its value to the £. Although we agree on the number of students to be transferred yearly the PMS has been amenable to taking more students when IMU needed. And in the same way, IMU obliges when they have to take fewer students in a year.

#### The Outcomes

Now, 20 years on, what are the outcomes? We have nearly 40 partner schools linked to us in medicine, dentistry, pharmacy and other health sciences programmes, including a first in chiropractic and Chinese medicine in a medical university.

From being just a one-course university, medicine, to two courses, Pharmacy in 1996, we now have 20 health-related programmes at both the undergraduate and postgraduate level.

We have produced over 3800 medical graduates, from both the PMS (2509) and our own Clinical School (1297). Many of these are now specialists. Our on-going alumni study will be able to estimate how many of our students have returned. The IMU has produced nearly 1990 graduates in both MPharm (1491) and BPharm (492). We have to work towards joint research with our PS (partner schools), rather than passively sending students. We can do more with exchange of students and staff. Institutional linkages must be strengthened.

And our overwhelming success has spawned many attempts to copy the IMU model and the establishment of other private medical schools. As at 2012, there are 22, the bulk being in private rather than public. The ratio of medical schools to population shows Malaysia with 1:0.85 million compared to Australia at 1:1.09 million and UK at 1:1.94 million. The Malaysian ratio is more worrving when you take into account that the UK and Australian medical schools take international students, unlike Malaysia. It raises the question if we are over-producing. Is it really too many or too many of poor quality? The attendant issues of the ability to source good faculty, students, clinical training facilities, and ultimately, quality must be addressed.

Among some of the initial concerns on private tertiary education was that it could become too commercial, and that standards would be compromised. It appears that some of these suspicions are founded in healthcare professional training. The public is querying what went wrong when quality frameworks and regulations are supposed to be in place. Have the hands of the regulators been tied? The public is particularly concerned that these are healthcare professionals who are dealing with something as serious as health. Who is responsible to make sure that the public is safe? There is now evidence of poor quality training in healthcare professionals, especially doctors and nurses who are not professional and lack competencies and skills, destroying the excellent reputation Malaysia used to enjoy in this field. We sense a scramble to try to solve a very serious problem. The issue of a pre-qualifying exam is being touted. There is an attempt to reaccredit even very renowned medical schools. But it is a problem that has to be thought through carefully in order to ensure long-term success rather than ad hoc patch-ups. And, above all, there has to be commitment to quality. best practices and the will to do the right thing.

For IMU, the next step now is to develop an AHC. The students will see how the core values of the IMU are put in practice in this healthcare facility. The AHC will be expected to grow. IMU, still concentrating on healthcare education will become a small but high quality university. It will have vertical integration with feeder foundation and diplomas in its college and undergraduate and postgraduate education at university. There will be increasing adult learning that is flexible and convenient as education for school leavers drop in comparison to adult-learning. IMU has to continue to innovate, to be a first mover and to maintain its leadership role.

At the same time, it must continue to go for best practices and world standards, yet remain very open and flat, responsive to changes, willing to try new things and to learn continuously. In its drive for quality, IMU must ensure that its core values of ethics and altruism are embedded and become a way of life and its relevance to society strengthened, for only then can there be sustainability.

# PART TWO THE JOURNEY - PAST, PRESENT AND FUTURE



#### **Chapter 1: Introduction**

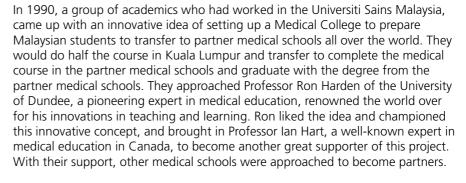
#### Tan Sri Dato' Dr Abu Bakar Suleiman



Official Launch of IMC in 1992

#### In the beginning...

In the 1980's, Malaysia was very short of doctors, and there were only three public medical schools at the time. Historically Malaysian parents have always placed a high value on education, and an overseas education in particular. Medicine has always been a popular career choice for Malaysian students and parents, and many Malaysian students attend medical schools overseas.



This innovative concept and an entrepreneurial approach taken by the founders, grounded on a sound academic platform, with very experienced and well known academics recruited to start the programme, and with the support of world experts in medical education, the International Medical College (IMC) was founded in 1992.

The College (IMC) faced numerous and major challenges in the early days, however they had excellent resilient leadership and management that charted the way forward despite numerous difficulties. Their innovative concept was well accepted and supported by Malaysian parents that IMC survived and eventually prospered to become well known in the Malaysian higher education field.



Registration of students for first intake (1993) by IMC in Petaling Jaya



Official Ceremony - Establishment of IMU on 20 April 1998

#### The Asian financial crisis and IMU ....

The Asian financial crisis of 1997/98 was a major challenge for IMC. During this difficult period, the resilience of the management and the support of the partner universities enabled IMC to continue, despite the uncertainties of the time. When the Malaysian government took steps to reduce the outflow of local currency in 1998, the government upgraded the status of IMC to become a full-fledged university – The International Medical University (IMU).

With the support of Professor Ron Harden and other experts from the partner university, a working party in IMU worked quickly to develop the full MBBS (IMU) course, with the establishment of the Clinical School in Hospital Seremban in 1999. IMU had become the first private medical university in Malaysia, with the first private MBBS course.

IMU has over the years developed numerous other courses, following the same innovative model of having partnerships with overseas universities. This allows students and parents the option of doing the course completely locally or transfer to a partner university and graduate with their degree. This allows the student an experience of an overseas education at reduced costs. The students are also assured of attending courses of international standards at IMU.



Inaugural Convocation ceremony in 1996













IMU student activities ranging from academic, sports and community service

#### The development of IMU....

IMU had started with an innovative, integrated curriculum for the MBBS course, with an emphasis on problem based learning. In time we have grown and gained experience with this approach, together with the various practices in implementing this type of approach. We had eight years ago developed the medical curriculum to be outcomes based, and this has been implemented in all the other courses as well. In taking this approach, increasing emphasis and focus have been towards a competency based model of education again starting with the medical course, this emphasis has been extended also to other courses at IMU.

#### **ICE**

The important focus on teaching and learning has seen the "medical education unit" at IMU change and develop from the Medical Education Research Unit (MERU) to become the Centre for Medical Education (CtME) to now become the Institute for Continuing Education (ICE), which was launched in 2012. This development has been a reflection of the emphasis given to the various elements of teaching and learning that is so important to IMU.



IMU was awarded "thebrandlaureate" for Best Brands- Private Education (Medicine and Pharmacy) in 2007-2008





Training workshops are regularly conducted at IMU



Research activities conducted by academic staff and students at IMU Research Laboratory



Soft Launch of ICCE on 20th September 2011







AMEA Conference 2011

#### **IRDI**

In a similar way research has come a long way since this investment was initiated in 1999 at IMU. The research activities have grown quickly together with the research emphasis in undergraduate degrees and the development of degrees by research. The Bachelor of Medical Science, the Master of Science and Doctor of Philosophy degrees by research have been very strongly supported. This is also reflected in the number of publications, patents registered and external research grants obtained by the different research groups at IMU. To be better able to support research activities in future, the Institute for Research, Development and Innovation (IRDI) has been launched in 2012.

#### **CCE**

The continuing professional development (CPD) activities have long been part of our activities, contributed by the different programmes at IMU. The weekend courses together with annual conferences on medical education have been a regular feature in our calendar. We have successfully hosted the Asian Medical Education Conference, co-organised with the Asian Society for Medical Education in 2011, and the Ottawa Conference, co-organised with Association for Medical Education in Europe (AMEE) in 2012.

The Ottawa Conference, a global meeting which focuses on all aspects of assessment, was held in Asia for the first time when we co-hosted it in Kuala Lumpur. With all these activities, the Centre for Continuing Education (CCE) was launched in 2012. Subsequently the CCE was renamed the Centre for Lifelong Learning (ICL).

#### **Clinical School**

The development of IMU has seen its physical growth from a medical college housed in small premises in Petaling Jaya to the present campus at Bukit Jalil and clinical campuses at Seremban, Batu Pahat and Kuala Pilah. The student population has grown to about three thousand students and the staff population has also grown over the years.







Renovation and expansion of IMU building at Bukit Jalil in 2007

#### The Bukit Jalil Campus

The campus at Bukit Jalil was previously the headquarters of the 1998 Commonwealth Games. For many years, the remnants and marks of the Games had remained physically on the premises. For several years a lot of the space available had not been fully utilised as plans were made for IMU's expansion. However once the plans had been approved by the Board and planning permission obtained, an additional floor was added on the roof, and an extension block was built.

The planning for this renovation and expansion was done in-house by a committee of staff members working together with the architect and his team. Everything was planned to be fit for purpose to deliver the various programmes of IMU. The interior design and decoration were all done by the staff with input from the students. The pleasant ambience and user friendliness of the campus have drawn positive comments and feedback from students and visitors to IMU. The present campus at Bukit Jalil is a testimony to the commitment, dedication and ingenuity of our staff in making the physical environment to be pleasing and conducive to staff and students at IMU.



Academic Council Meeting 2012





The International Medical University has signed a number of MOU's with various organisations and institutions to enhance collaboration



Partner Dental School meeting in 2009

#### IMU and the 3l's of IMU

What has made IMU unique and successful had been a combination of a good idea at the right time with a sound business model, led by an entrepreneurial group of leaders supported by great academics, local and international, along with a very hard working and committed supporting cast. This is a story of a lot of people – people of all types, a very diverse, talented, dedicated community of people.

It is also a story of the great partners that worked with IMU, both local and foreign, also a story of wonderful students and great, supportive parents.

The celebration of anniversaries provides opportunities for reflections, and for plans for more future success. This book provides the faces to the successes achieved by IMU. Some of them may be better known than others, unfortunately by the nature of the book many others cannot be included, and have also contributed to IMU's success. A feature of IMU has been the teamwork, commitment and dedication of the people. This is something we will continue to build on, as they are the critical resource to IMU. They are committed to the values of IMU and aspire to live the 3I's of IMU – Innovation, Imagination and Insight.



IMU Convocation Ceremony 2012





Parents, family members and graduate students at a Convocation Ceremony

#### **Chapter 2: IMU as a Learning Organisation**

#### Victor Lim

#### Introduction

#### What is a Learning Organisation?

There are many definitions of a Learning Organisation. In general terms, a learning organisation is an organisation that facilitates the learning of its members and constantly undertakes to transform itself. It is an organisation where its people work collaboratively in an atmosphere of openness and trust to continually self-improve and innovate in order to achieve a common vision. The members of a learning organisation continually learn from their experiences, from one another as well as from the environment. Learning organisations develop in order to remain competitive in the modern business environment. They do so through acquiring knowledge and making innovations in a constantly changing environment. Learning organisations therefore support and encourage continuing employee learning and critical thinking. They allow for mistakes to be made and use mistakes as opportunities for learning. Employee contributions are highly valued and new knowledge is disseminated throughout the organisation for incorporation into routine duties.

## **Elements of a Learning Organisation**

Organisations do not spontaneously develop into learning organisations. The transformation is deliberate and there are factors that would promote this change. Very often as organisations grow, the capacity to learn is diminished, structures and thinking become rigid and solutions to challenges tend to be short term and do not address more fundamental issues. Learning organisations learn faster, understand the environment better and are sensitive and responsive to their customers' needs. In such an organisation, the skills and knowledge of everyone are optimally utilised through close cooperation and efficient communication in a climate of transparency and trust.

Senge, the foremost proponent of the Learning Organisation identified 5

essential features or disciplines of a learning organisation namely; systems thinking, personal mastery, mental models, shared vision and team learning.<sup>1</sup>

Systems thinking is the cornerstone of the approach and integrates the other disciplines. Systems thinking requires us to look at the organisation as a whole and how major decisions will affect the entire organisation over the long term. For instance a decision by a university to compromise on the quality of admitted students in order to increase student numbers may in the short term enhance revenue but in the longer term result in irreparable damage to the university's reputation.

Personal mastery involves the commitment by all individuals in the organisation to the process of learning. Learning is not just formal learning through attending courses and

seminars. Informal or incidental learning at work is perhaps far more important. The organisation should therefore instill a culture of learning as a daily routine through peer and team learning. There must also be mechanisms by which individual learning can be transferred to organisational learning as a whole. Mental models refer to the assumptions, norms and prejudices which are held by individuals and organisations. Every individual as well as the entire organisation must be willing and prepared to expose these values to challenge. Values that are outmoded or no longer relevant must be discarded through a process of unlearning. New and more relevant values need to be embraced through a process of relearning.

Every organisation needs a vision that embraces long term goals that is owned, understood and shared by every individual in the organisation. The development of a common vision will enable the staff to learn, through the creation of a common identity that provides focus and energy for learning. Organisations that have a flat and decentralized structure are more likely to succeed in developing a shared vision.

Team learning is the result of the sum of all individual learning in the organisation. It is important to tap the potential of all individuals in solving problems within the organisation. The benefit of team learning is that staff develop more quickly and the problem solving capacity of the organisation is improved through better access to knowledge and expertise. Team members must learn to listen to other team members and to suspend their own personal preferences and prejudices (mental models). There should be structures in the organisation that facilitate team learning. Discussion and dialogue is promoted and such discussions should be conducted in an atmosphere of openness. A knowledge management structure should be established which will facilitate the efficient creation, acquisition, dissemination and implementation of knowledge within the organisation.

## Benefits of becoming a Learning Organisation

An organisation that encourages learning and exchange of information among its staff will create a more knowledgeable workforce better equipped to respond to both internal and external challenges. Such an organisation would be more flexible and more receptive of new ideas. It promotes creativity and innovation leading to novel solutions to solve problems. People are more likely to identify fundamental root causes of problems and to solve them rather than employ fire-fighting measures which are ad-hoc and superficial. Double-loop thinking is

employed and when decisions are made the effect of the decision on the entire organisation is evaluated and the long term implications taken into account. People who are given the opportunity to develop their skills will obtain greater job satisfaction which in turn engenders loyalty to the organisation.

A learning organisation promotes team work and collaboration between units in the organisation. As a common vision is shared, there is greater motivation to excel and to work towards achieving the organisation's mission and goals. Team working promotes a culture of openness and transparency and improving interpersonal relationships. All this would lead to greater efficiency within the organisation.

In a primarily profit-driven institution, the transformation into a learning organisation would enable it to be more competitive and this will translate to a better bottom line. The mission and goals of a university are more diffuse with the additional elements of being responsible and accountable to the society it serves. Being a learning organisation will enable it to be more responsive to the needs of society and therefore better able to produce graduates who not only possess the necessary skills and competencies but who will become good citizens and leaders of the community.

## **Universities as Learning Organisations**

Although universities are related to learning, they are not necessarily learning organisations. In the corporate world the benefits of becoming a learning organisation is fairly clear. The mission of corporate organisations is generally to make money and becoming a learning organisation should make the organisation more competitive and more profitable. The bottom line is often the

ultimate outcome measure for corporate organisations.

The situation in a university is far less simple. Universities have to meet the varied demands of a complex mix of stakeholders who are both internal as well as external. In a private university demands from different stakeholders can be conflicting. Shareholders may take a short term view and demand higher profits at the expense of quality. Academics take a longer term view and strive to establish a quality university, a long and arduous process that may take many decades. Universities also have a social responsibility in educating its students to be good and productive citizens. Universities are expected to contribute new knowledge through research, an activity which often is not profit generating. Although IMU is a forprofit private university, the vision and mission of the university is quite diffuse and while profits are essential for its sustainability, it is not the only, nor is it the most important objective.

Clark had pointed out that academics in general differ from employees in a corporate organisation.<sup>2</sup> Over the years academics in universities have developed certain unique traditions and values. Central to these are the concepts of community, freedom and individualism. Faculty as a "community of scholars" value their academic freedom. There is also a tendency to be overly involved in their own fields of specialisation or super-specialisation resulting in a degree of apathy in their colleagues' work. It is not uncommon for academics to have more loyalty to their respective disciplines than to the university as a whole. This may result in a conflict between management and the faculty. Management often feels that academics are not wholly committed to improving the quality of internal processes, while academics feel that only their academic peers are sufficiently competent to

review their work. The fragmented nature of a traditional university can affect its decision-making process and its ability to respond efficiently to changes in the environment.

Dill has questioned the applicability of Senge's five disciplines to universities.<sup>3</sup> These principles have largely been developed from business and production management systems where missions and goals are more limited and largely profit-driven. Furthermore the practices espoused are not derived from good evidence obtained through systematic research. Dill has proposed an alternative set of criteria to define a university as a learning organisation. They are (1) instilling a culture of evidence as a prerequisite for systematic problemsolving (2) improved coordination between teaching units through an organizational structure that would enhance coordination, communication and accountability among the faculty (3) learning from others through external reviews and benchmarking as a means of improving programmes and courses (4) university wide coordination of learning through the creation of structures that will support teaching and learning throughout the university which will include faculty-wide committees to ensure quality of teaching and learning activities and the establishment of centres for education to conduct research in education and provide opportunities for faculty development and teaching scholarship (5) transferring knowledge between different organisational units.

## IMU as a Learning Organisation

IMU's Vision states that: 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.

It is quite clear from the vision statement that the founders of IMU envisage that this university shall be a learning organisation. The university's commitment to serving society is also explicitly stated. The motto of the organisation "Together Learning" also encapsulates the spirit of a learning organisation. The 3"I"s of IMU – Imagination, Innovation and Insight are also consistent with the values within a Learning Organisation.

Since its inception as the International Medical College, there have been several proposals and projects to work towards being a learning organisation. However these efforts have largely been taken piece-meal and in an uncoordinated fashion with no attempt made to measure its success or effectiveness in an objective manner.

#### The Fourth I Project

In 2003, a project named the "Fourth I Project" was launched. The main objectives of the project were:

- To establish IMU as an intelligent learning organisation (ILO), possessing the ability to continually adjust to new situations, to change and to renew itself according to the demands of the environment.
- To create an organisation where people have the possibility of developing themselves continuously,

learning together to achieve the common vision.

The "Fourth I-project" was further divided into subprojects as follows:

- 1. Employee Accounts
  - a. An annual Human Capital Report on the Sesama-IMU Human Capital status
- 2. Black Book Project
  - a. L21 Assessment Centers
  - b. L21-JL21 Mentoring System
- 3. SL21 Online Management Development Programme
- 4. Welch Employee Workout Programme
- 5. Enterprise Knowledge Portal
- 6. Annual Communications Plan
- 7. Balance Scorecard Feedback System
- 8. Competency Management Development and Action Plan
  - a. Executive/Knowledge Worker Education Programme
- 9. Performance Management Development and Action Plan
  - a. Sesama-IMU Appraisal and Reward System
- 10. Knowledge Management Action Plan
  - a. Virtual Medical University (VMU) Platform Project
  - b. Enterprise Knowledge Portal Project (Data Central)
- 11. Project Management Central

Due to various challenges faced by the university around this period, the 4th I Project could not be implemented in its entirety although some of the subprojects were partially undertaken. These included some elements of the Black Book project, the Welch Employee Workout Programme, the Performance Management Plan and the Virtual Medical University or VMU.

#### **ASPIRE**

In 2011 the university embarked on an ambitious 5 year strategic plan codenamed ASPIRE. In ASPIRE the mission of the university is to be a leading Asian private health educator that creates value through the integration of education, health care and research. There are three strategic goals in the areas of education, health care and research respectively. The educational strategic goal is to be a leading private Asian health educator recognised for quality and innovative curricula. The health care goal is to establish a values-based academic health centre with a centre for complementary alternative medicine, while the research goal is for the university to be recognised for research and consultancies in focus areas and leveraging on strategic alliances.

Underpinning the mission and goals are three strategic enablers; namely the innovative use of information and communication technology, excellence in performance through capacity and capability building and to be a great place to work in. Five core organisation-wide values have also been identified which are trustworthiness, responsiveness, unity, service and tenacity.

To achieve the mission, seventeen initiatives or projects were established and many of these initiatives focus on aspects that would help the university complete its journey of transformation into a learning organisation.

# Where are we in the journey to becoming a learning organisation?

It is difficult to judge as to what extent is IMU a learning organisation. No objective measurements have been done thus far. At the time of writing plans are afoot to employ a validated instrument, the DLOQ4, to measure this degree of achievement and to identify areas of deficiency. In the absence of such data, IMU's success, or lack of, in its journey to be a learning organisation is largely the author's personal opinion.

If we examine Senge's five criteria namely systems thinking, personal mastery, mental models, shared vision and team learning, IMU would rate moderately well in the areas of shared vision, personal mastery, and team learning but would need to do much more work in the areas of systems thinking and mental models. IMU has a well-defined vision that has been well communicated to all its stakeholders. IMU's Learning Model and educational philosophy are derived from and aligned to the university's vision. This vision has served as the driver in many IMU's initiatives including the recent 5 year-strategic plan or ASPIRE.

The concept of personal mastery is also fairly well entrenched in the university. Self-directed, life-long learning is the keystone of IMU's educational philosophy and strategies to promote this is consciously embedded in many of the teaching-learning activities that are implemented in the university. The staff of the university is also expected to continually improve themselves and the university had been guite generous in funding staff in attending conferences, seminars and workshops. The Centre for Medical Education was established to provide training in teaching scholarship for the academic staff and more recently the IMU Centre for Continuing Education has been set up to provide for continuing professional development in the respective areas of technological expertise of the faculty. A comprehensive Staff Development Programme is being developed where each member of the staff will have an individual development plan, designed

jointly by the individual and the head of department to fulfil not only the individual's aspirations but the needs of the university as well.

There have also been numerous attempts at promoting team learning. Team learning is promoted among students through problem-based learning and group projects. Many important policy decisions are undertaken through group discussion and open dialogue. Being a small organisation, there is considerable direct interaction between the top management and all staff in the university. From time to time the university organises town hall meetings where top management engages the staff in open dialogue on matters that are of concern to the staff. The university adopts an open plan office environment for faculty. There is no physical separation between departments or schools and faculty from various disciplines share common areas or faculty clusters. This encourages staff from different schools and departments to interact on a daily basis and much informal learning occurs in this manner.

Systems thinking is still a challenge in IMU. It is difficult to get staff to engage in double-loop thinking, to look at the wider implications and long term effects of decisions taken. Encountered with a problem, there is still the tendency to simply solve the immediate problem without a more detailed analysis of root causes and an evaluation of the impact of the solution on the entire organisation.

Mental models are perhaps a bigger challenge in IMU than in other Malaysian institutions. This is particularly true of the faculty. Among the faculty in 2011 are 18 different nationalities from 5 continents. Malaysians are the biggest number accounting for around 60% of

total faculty. Even among the Malaysian academics there are considerable differences in backgrounds. Some are experienced academics who have retired from other universities while others have been primarily senior clinicians with no previous academic experience. There also are those who have a largely research background having worked in a research institution for many years before joining IMU. A good number are Malaysians who have recently completed their PhDs either locally of abroad. They have good research experience but little exposure to teaching-learning methods.

The international faculty also comes from diverse backgrounds. Many are very experienced academics but have come from institutions which teach in a predominantly traditional and didactic manner. Others have some experience in the more innovative methods of education and have less difficulty in adapting to the educational philosophy of IMU. There are also international faculty who like their Malaysian counterparts who have been senior clinicians with little teaching experience.

The diverse backgrounds of faculty is obviously a strength as there are many good lessons to be learnt from the varied collective experience. However some ways of thinking and prejudices are so ingrained that it takes a considerable effort to unlearn and to relearn.

If Dil's criteria for a learning organisation were used, IMU would probably perform a little better. The first criteria relates to the use of evidence for solving problems. The university has organised several workshops on approaches in problem solving with the objective of getting staff to adopt a more systematic evidence-based method in problem solving. It is difficult to ascertain how much of this has been put into practice. There is still quite a lot more work that

has to be done before such practice is institutionalised and becomes the culture of the organisation.

IMU has probably made more progress in the area of improved coordination between teaching units. IMU's organisational structure is quite flat and as the academic programmes have integrated curricula, there is a lot of cross-teaching and interaction between the various schools. That it has only one faculty under a single Executive Dean is also an advantage. As mentioned earlier there are no physical departments and faculty from the various schools share common office areas called faculty clusters which are designed on an open plan. All this enhances coordination, communication and accountability among faculty.

The third of Dil's criteria involves learning from others through external reviews and benchmarking. IMU has a fairly well established quality assurance process which involves regular external and internal audit processes. By virtue of its extensive partnerships and credit transfer arrangements with leading universities around the world, IMU is probably subject to more external audits than an average university. In the medical programme, IMU has established credit transfer arrangements with more than 30 partner medical schools in Australia, New Zealand, UK, Ireland, Canada and US. Each year the deans of the partner medical schools or their representatives meet in IMU to conduct a 3-day audit of the medical programme. IMU also has a Professional Education Advisory Committee (PEAC) which comprises senior educationists from Australia, UK, North America and Malaysia. PEAC has 2 major activities a year; the first is to conduct a thorough review of a programme or educational activity and the second to review the quality assurance reports compiled by all programmes. In addition the university's

programmes are also subject to regular reviews by the Malaysian Qualifications Agency and other regulatory bodies like the Malaysian Medical Council, the Malaysian Dental Council, the Malaysian Pharmacy Board and the Malaysian Nursing Board. As a general rule all IMU programmes are benchmarked to international standards in order to facilitate credit transfer arrangements.

IMU commits a lot of resources to support teaching and learning. The Centre for Medical Education conducts workshops and training sessions for faculty on a weekly basis. There is an active e-learning unit that provides faculty training and support for the creation of on-line learning resources. An institute for Research, Development and Innovation (IRDI) and a Centre for Continuing Education have also been established to enhance the faculty's capability in research and to provide continuing professional development. As mentioned earlier, the university has also been quite generous in providing financial support for faculty presenting papers at both national and international conferences.

The fifth of Dil's criteria pertains to the transfer of knowledge between different organisational units. As a result of the flat organisational structure and the multidisciplinary nature of academic programmes and research, there is considerable transfer of information between the academic units. There is also considerable informal learning among faculty in their faculty clusters. The transfer of information between the non-academic units probably needs to be improved and there is still a fair bit of working in silos.

#### **Conclusions**

In its journey to be a Learning Organisation, IMU has perhaps done quite well in certain areas but is

deficient in others. Without proper, valid and reliable measurements it would be difficult to establish its status as a Learning Organisation. There are instruments which have been validated for this purpose such as the DLOQ and it is timely that IMU undertakes such an assessment. It should preferably be conducted by an external party. Only through such a systematic study can IMU ascertain its strengths and weaknesses. It should continue to build on its strengths and take concrete steps to address the areas of deficiency. By becoming a Learning Organisation, IMU will be able to stay ahead of its competitors not merely for commercial considerations but to become a quality university and fulfil the vision of its founders.

#### References

- 1. Senge, P. (1990). The Fifth Discipline. New York, Doubleday
- 2. Clark, B. R. (1987). The Academic Profession: National, Disciplinary and Institutional Settings. Los Angeles, University of California Press
- 3. Dill, D. Academic Accountability and University Adaptation: The architecture of an academic learning organization. Higher Education 1999; 38: 127-154
- 4. Dimensions of the Learning Organisation Questionnaire (DLOQ). http://www.lacrosseart.com/g3records/dloq\_instructions.html. Accessed 12 July 2012.

### **Chapter 3: IMU - A Community of Scholars**

# Joon-Wah Mak, Michael Thomas Haneline, Sivalingam Nalliah, Geok-Lin Khor, Nilesh Kumar and Stephen Ambu

#### **Abstract**

The concept of a community of scholars is embedded in IMU's vision statement where the tenets of innovation and excellence in education scholarship, research, professionalism and ethics are stressed. Scholarly activities are much more than academic excellence; they excite, drive and create the thirst for more.

Scholarship embodies activities that result in discovery, integration, application and teaching within an environment that accepts nothing less than the highest standards of professionalism and ethics.

The challenge would be to create the environment that would entice the whole IMU community to desire for and work passionately towards this. We are confident that this can be done as that foundation has been carefully laid for nearly two decades. IMU will need to identify and empower leaders in the scholarly activities of discovery, integration, application and teaching. These leaders in turn would interact within and between these areas in the spirit and substance of collegiality that is so vital for intellectual stimulation and advancement. This interaction must also involve the community at large, the ultimate aim being for IMU to be a credible source of knowledge, advice, consultancy, advocacy and above all, relevance.

IMU has put in place the mechanism for scholarly discovery and learning. The setting up of the IMU Institute of Research, Development and Innovation (IRDI) with Centres of Excellence in focus areas, and the IMU Centre of Education (ICE), will provide the leadership and

direction in these scholarly activities. The scholarly components of integration, application and teaching are on-going processes, but must be given greater emphasis.

# **Concept of a Scholarly Community**

The concept of a community of scholars in a university suggests a cooperative setting in which a faculty works together to educate a body of students. Varieties of scholarly activities that are carried out by many individuals who have diverse strengths make up the components and contribute to the success of a community of scholars. However, the traditional connotation of what constitutes scholarly activities tends to emphasise on research, often to the detriment of the other elements of teaching and learning. Hence, there is a need for a broader delineation of what it is that a community of scholars does and how they can work together to produce exceptional graduates. Indeed the tenets of innovation, excellence in learning and teaching, research, scholarship, ethics and professionalism are embodied in the vision statement of IMU.

#### **Scope of Scholarly Activity**

A seminal work that depicts the composition and extent of scholarly

activities was developed by Boyer.<sup>1</sup> The traditional limited definition of scholarly activity was portrayed as being deficient and a new comprehensive characterisation was proposed that assigned broader meaning and recognised the full scope of academic work. Boyer suggested that there was a need for a more inclusive view of what it means to be a scholar, recognising that knowledge is acquired through research, synthesis, practice, and teaching.

Thus, the work of the professoriate might be thought of as having four separate, yet overlapping, functions. These are scholarship of:

- Discovery,
- Integration,
- · Application, and
- Teaching.

The scholarship of discovery involves research in all of its forms. Research is especially important in health care as it contributes to the body of knowledge that defines it. Research should be a priority for all members of the IMU faculty, though not everyone should be inclined to carry out original research. A noble alternative to original research is writing for various publications, which can contribute greatly to the body of knowledge. Many professional

journals accept commentaries, letters, literature review, case studies, meta-analyses, book reviews, and brief communications. Other forms of writing that satisfy the definition of scholarly activity include textbook chapters, contributing to newsletters and reviewing manuscripts for journals.

The scholarship of integration refers to activities that lead to connections across the disciplines contributing to inter-disciplinary collaboration and learning. Integration encompasses serious, disciplined work that seeks to interpret, draw together, and bring new insight to bear on original research. The scholarship of integration also means interpretation, fitting one's own research, or the research of others, into larger intellectual domains. Translational research, which seeks to convert scientific discoveries into practical applications, is the epitome of integration. Translational research in a medical university can be permissive apart from being inclusive in collaborating with scientists and clinicians for the betterment of human life as discoveries are meaningfully applied to clinical practice. The pharmaceutical sector and molecular biologist would work in a to-andfro shared approach with the clinical scientists to achieve desired outcomes.

These first two types of scholarship reflect the investigative and synthesising traditions of academic life. They also reflect on the three 'I's of the IMU namely, imagination, innovation and insight.

The scholarship of application involves the utilisation of knowledge leading to its deployment in the educational environment. A scholar utilising application can responsibly apply knowledge to existing problems that will be of benefit to individuals as well as to the institution.

Service encompasses countless campus activities; for instance, serving on committees, advising student clubs and performing departmental duties. Services that are provided offcampus may also be included, such as participation in health screenings, volunteer clinics and youth clubs. In order to be considered scholarship. however, service activities must be directly linked to the individual's field of expertise and relate to their role as a professional. To be considered a scholarly activity, such service must be serious, demanding work that requires the rigor and the accountability typically associated with conducting research. The attributes of such a scholar connects well to the core values of the IMU.

The ability to lead and manage well can also be considered scholarly activity. Scholars will be collaborators and professionals who exhibit leadership and managerial skills. An example will be participation in programmes and committees that add value to a particular department and/or the University, such as acting as a role model for students and peers. Involvement in activities that are beneficial to a person's profession at the local, regional or national level would also fall into this category. Such strategies will propel student involvement in education and community service to greater heights.

The scholarship of teaching goes beyond the routine function of imparting knowledge to being a dynamic endeavour that utilises andragogic skills in both educating and enticing students to appreciate the art and science of teaching-learning so that they would excel as future scholars themselves. Teaching must encompass the continuum from undergraduate to graduate and professional development activities. Teaching embraces analogies, metaphors and images in order to build bridges between the teacher's

comprehension and the student's learning. In addition to traditional classroom teaching in university, activities like lecturing at regional, national or international meetings, as well as presenting at expert workshops and seminars would fall under the broad umbrella of 'teaching'.

It is of paramount importance to evaluate the effectiveness of teaching and student learning and to use the information gained to refine and improve teaching strategies. Another way to improve in this area is to take advantage of opportunities for faculty development. Utilisation of current pedagogic and andragogic principles and keeping abreast of effective teaching methods with the employment of e-learning, problem-based-learning, task-based learning and distributed learning at sites away from the primary site of the university using both face-to face and distance learning, the scholar goes beyond the conventional classroom setting to being competent in various teaching modes using multi-source and multi-media learning methods.

The ultimate aim is to foster a community of scholars whereby opportunities are provided that enable and facilitate all faculty members at IMU to achieve their potential in a way that best suits their personal interests and abilities, with academic excellence as the ultimate goal. At the same time, these scholars would be able to meet the objectives of the academic learning set in the learning model.

One should take cognisance of the fact that there are many other activities that are considered as scholarship; what have been discussed are what faculty members are typically involved in. Faculty will be able to adapt to changing needs as they learn to simultaneously provide instructional learning in conventional teaching as they work to

be professionals in their own speciality or furthering innovative experiments in research.

The university should bestow appropriate recognition to scholars who have excelled in all the four elements of scholarship (in discovery, integration, application and teaching) by providing opportunities for academic advancement, incentives and promotions. Recognition of accomplishments by scholars would be a motivating factor for others to pursue all scholarly activities.

In summary, scholarly activity can be defined as the application of systematic approaches to the development of knowledge through intellectual inquiry and scholarly communication. It includes research, the dissemination of knowledge through such means as publications and presentations, and the application of new knowledge in professional practice and student learning. Scholarly activity can in general be categorised into activities that involve research, teaching and learning, and service. Any activity that involves the intellectual and creative process that brings credit to a faculty member and/ or the department and university in a significant way could be considered scholarly. Sometimes scholarly activities may fall outside the domain, role and function of the University.

# **Examples of Scholarly Activities at IMU**

#### **Discovery**

- a. Conducting or participating in research
- b. Creating something that stems from academic or professional investigation that leads to a patent (e.g., a drug or software).

#### **Integration**

- a. Preparing scholarly documents to support programme accreditation.
- b. Developing new educational programmes or services.
- c. Developing non-traditional or innovative learning experiences for students based on a review of the literature and consultation with experts.
- d. Synthesising, interpreting and disseminating new knowledge to others, such as policy makers, decision-makers and the public.
- e. Interacting with the community as a representative of the University and/ or a profession. For example, an interview appearing in a magazine, on television or radio, a magazine article or a public lecture.

#### **Application**

- a. Writing, translating, and publishing, especially in peer-reviewed journals. There are many other possible publishing outlets, including newsletters, monographs, commentaries, editorials, internet publications and book forewords.
- b. Serving on review panels and conducting reviews for peer reviewed journals.
- Serving on masters or doctoral thesis committees or as external examiners on doctoral committees.
- d. Serving as an external evaluator on program accreditation/recognition with professional associations and regulators at the provincial and/or national level.
- e. Developing educational materials with wide application, including textbooks, manuals and online learning objects.
- f. Developing and presenting papers at scholarly and/or scientific conferences.

#### **Teaching**

- a. Obtaining additional educational or professional qualifications.
- Developing non-traditional or innovative learning experiences for students based on a review of the literature and consultation with experts.
- c. Assisting students to engage in research projects and/or develop papers.
- d. Organising and presenting at professional development activities, such as seminars, conferences and workshops.
- e. Providing expertise as a consultant to others, such as local businesses, government agencies, and community groups.

### Clinically-Based Scholarly Activities

In the clinical setting involvement in postgraduate education and training are integral to scholarship. Postgraduate training involves:

- a. Supervision of training in the clinical setting to develop competency.
- b. Guiding trainees to achieve goals.
- Involvement in training by serving in the Conjoint Committees for Masters Examinations.
- d. Development of assessment tools for postgraduate examination.
- e. Serving as External Examiners in both postgraduate and undergraduate examinations.
- f. Educational research and scholarly comments on postgraduate education
- g. Specific learning activities for internship training and medical officer learning

### Relevance to the IMU Environment

The environment at the IMU continues to be conducive for scholarship and scholarly activities with experienced community members nurturing both students and fellows to achieve the objectives of the university.

#### Nurturing a Scholarly Environment

Scholarly activity is integral to effective student teaching/learning activities and is a component of all faculty work. IMU will facilitate faculty engagement in scholarly activity though provision of technical and logistic expertise, provision of resources and a safe environment to carry out research, and collaborate with external agencies. The increasingly corporate model of management experienced at many institutions restricts collegiality and the ability of faculty to engage in scholarly activity. The university will promote innovation and avoid factors that may hinder exercising of professional responsibilities by ensuring that such a model of management does not contribute to blunting of scholarly activity. It is the responsibility of the University to enable faculty engagement in scholarly activity. The lack of adequate resources, as well as institutional ignorance of the central role of scholarly activity, blocks faculty from fully exercising their professional responsibilities and makes it difficult to achieve teaching excellence.

The vision of the IMU to be a leading university in all aspects, including scholastic activity, would be aligned to processes engaging faculty to scholarship. Faculty will be provided opportunities to be engaged in scholarship (i.e., research, service and professional development) consistent with the academic development and academic enquiry enmeshed in the

University's mission, vision, and its core values.

As part of faculty development, a "certification" for teaching at IMU is being developed wherein faculty members can become recognised by the University as being capable teachers. The certification process would require that the candidate attend various seminars and workshops, with assessment, to attain progressive levels of competency (e.g., basic, intermediate, advanced).

#### **Professionalism and Ethics**

The scholar initiates his or her career in an educational research environment or learning site which fosters not only knowledge acquisition and competence in skills, but also promotes mature emotional growth widening his horizon for readiness to work as a professional. The components of professionalism are honesty, reliability, integrity, compassion and empathy, self-awareness, altruism, communication and collaboration. Leadership and interpersonal learning, though not explicitly taught, are yet other characteristics that are expected and demonstrated through planned and structured vertical and horizontal integration of the curriculum. This is facilitated through academic mentoring and regular appraisals and evaluation.<sup>2</sup>

The American Board of Paediatrics has requested programme directors to evaluate professionalism and document such training through the Verification of Clinical Competence for all residents in paediatrics for Board Certification. The Accreditation Council for Graduate Medical Education (ACGME) reiterates graduates to be committed to carrying out professional responsibilities adhering to ethical principles and to be sensitive to societal diversity.

Clearly professionalism goes beyond academic knowledge; skills and

behaviour are integral to the scholar's characteristics. To be a complete scholar, one needs to demonstrate critical thinking skills and be skilful in meeting the community's expectation of a complete scholar. A complete scholar would be self-reflective and meet professional standards in their practice in the immediate workplace, as well as in the community at large.<sup>3</sup>

It is inevitable that scholars would interact with others from organisations and professional societies. A sense of connection in a multidimensional environment must evolve, requiring collegial institutional professionalism.

Specific skills that scholars should have are highlighted by the American Association of Advancement of Sciences, where a scholar is expected to uphold workplace etiquette, performance standards and projected goals. Complying with rules and regulations of the institution alone does not signify good professional conduct, which should also include enhancement of the intellectual contribution of others, and identifying and managing apparent and actual conflicts of interest and ethical violations. To be professional a high degree of personal integrity and honesty is required. Advancing and promoting one's vocation and discipline by participating in professional society activities and serving on advisory boards and peer review panels indicates personal development and ability to work with organisations for the advancement of the sciences. Working with funding agencies and being involved in grantsmanship indicates scholarship and keenness in taking the discipline to greater heights.

The renewed interest in the teaching of professionalism beyond the undergraduate school into residency programs has propagated programme directors to develop their curricula so

that graduates of academic institutes would be complete scholars. Continued efforts to monitor and evaluate professional behaviour beyond the graduate school are now apparent.<sup>4,5</sup>

## Leadership, Role Modelling and Mentoring

IMU will identify leaders at all levels and provide the environment for them to function at the appropriate level. Examples are in the clusters of research emphasis, education, teaching and learning, services, consultancy, etc. They must not function in isolation but must deliberately interact to stimulate, challenge and generate ideas as befits a community of scholars. Leaders through their passionate discourse and interaction in an environment that emphasises professionalism, ethics, collegiality, critical thinking, and learning ethos will spark and influence the right values among colleagues.

#### Recommendations

# **Specific Recommendations to Improve Scholarly Activities**

Setting up of an IMU Research Institute with Centres of Excellence The IMU is working towards the status of a research university through strategies that could be implemented over five year periods with periodic reviews so as to align these to prevailing conditions in the country. A planned Research Institute (IRDI) with Centres of Excellence (COE) in thrust areas should provide the leadership in research direction, grant application support, translational activities, communications, research management and oversight, as well as the creation of a dynamic research culture and environment. Identification of funding sources for research, especially from external and international sources, and facilitating applications for these funds should be important functions of the Institute. In

addition, it would provide advice on commercialisation of products, services, patent applications and consultancies.

#### **Core Research Areas**

Core research areas should be identified and funded with a view to develop COE in these research areas within a stipulated timeline. Information on the areas of research emphasis and COE should be disseminated in a userfriendly way via the IMU website. This will facilitate prospective post-graduate students in finding the appropriate guides and demonstrate to them the strength of research areas corresponding to the name of the School under the University.

#### **Post-graduate Studies**

The role of senior post-graduate (PhD) students of the University in the teaching of undergraduate students should be determined with a required minimum number of hours of teaching experience obligatory as one of the passing criteria. This would ensure the quality of PhD/MD students in the scholarship of teaching and future progression to lecturership in the University.

#### **Facilitating Research**

Many faculty members are currently involved with a heavy workload in cross-teaching into different schools as content-experts. The University should look into their workload and appoint suitable numbers of content-experts so that the faculty has enough time to be involved in research and remain productive in the publication of quality articles.

IMU should consider creating postdoctoral positions for each of the thrust areas. The postdoctoral candidate will be expected to generate sufficient external funds to support the research

as a well as drive the respective niche areas

For faculty who are interested and have shown an aptitude for research, the terms of their employment may be modified to reflect the increased proportion of time allowed for research. This should be matched by well-defined negotiated performance targets, including the quantum of external research grants successfully obtained and other indicators of research output.

# Enhancement of IMU Website for Dissemination of Information

A literary record of the International Medical University's journey of establishing 'A forward-looking outcome based University with incorporation of most-timely and innovative teaching-learning methods' from 'International Medical College' in collaboration with the world's pioneer academics in medical education should be incorporated in the University website for the benefit of the next generation of academic leaders in the University.

The University website should incorporate the IMU philosophy of a 'Learning Model' in a user-friendlyway so that academics and accrediting agencies like MQA, as well as parents and prospective employers of IMU graduates could know about it. The outcomes of different programmes should be depicted in a user-friendly way in the IMU website. Presently the programmes are detailed as 'structure', 'aims', 'key-features' and 'contents' in a Q & A format, which is quite userfriendly. The special features of IMU as a University in depicting the outcomes that make the products most compatible with the healthcare industry should be highlighted more and featured across all the programmes.

The criteria for the 'scholarship of excellence in teaching' currently being determined by IMU will need to be implemented.

#### Strengthening of Clinical and Translational Research

Close cooperation between clinicians and scientists has made it possible for biomedical research to be applied in the clinical field. Clinical epidemiology and meta-analysis through the Cochrane database can be encouraged to further develop this area. Common grouses include lack of time and access to clinical data, as most of the clinical work is done in Ministry of Health hospitals. When IMU has its own hospital more clinical research is possible. Techniques in epidemiology studies and field work studies can be improved through training and making statistical assistance and consultancy available at the IMU. The Research Institute should provide these services to all researchers who need them

# Centre of Excellence in Medical or Health Sciences Education Research

The establishment of the Centre for Medical Education (CtME) at the IMU has been pivotal in advancing medical education research. Faculty members are now exposed to teaching and assessment methods

Education research has been recognised as an important scholastic activity. Strategies need to be in place so that the full potential of medical education can be realised through research, publications and professional advancement in the field.

The University should take some steps to develop a COE in Medical or Health Sciences Education research. To generate databases, the CtME should have Departments for Assessment of Teaching-learning, Evaluation of Courses/Programmes and Development of Curriculum which can oversee the educational activities of the schools and determine the quality criteria.

Effort should be taken to capture systematically in the IMU website the deliberations made by well-renowned educationists which have been presented at medical education conferences arranged by the University. This information could be used by the academics of IMU as well as academics from other Malaysian Universities.

#### **Certification in Education**

More faculty members should be encouraged to improve their professional standing as teachers by pursuing certificates and advanced degrees in education studies. This will result in a large pool of trainers to support the teaching-learning activities at the IMU. Most IMU faculty members should obtain their Diploma in Education within the first 2 years of their employment.

# Role of the University Library as Centre for Archiving Research

The Librarian of the IMU together with support from the Information Technology department plays a vital role in academic advancement. As research activities advance, all on-going research and publications should be archived for access to faculty and other stakeholders. To facilitate this IMU needs to upgrade the IMU e-Journal to be an indexed electronic journal. The IMU e-Journal should be the main portal for sharing knowledge and progress of research apart from its primary function as a portal for sharing published information. Scholars will need to look into how the IMU e-Journal can be used for

this purpose, working closely with the Librarian of the IMU.

## Scholarly Activities and the Community

In the last two decades IMU faculty members have carried out integration and application of scholarly activities in teaching and learning that have impacted on the community at large. Some of these activities have been captured in the various chapters of this book and they serve to document the essence of scholarly pursuits to provide inspiration, serve as resource for institutional memory and for learning. As IMU identifies and empowers leaders in the scholarly activities of discovery, integration, application and teaching, these leaders in turn would interact within and between these areas in the spirit and substance of collegiality that is so vital for intellectual stimulation and advancement. The University needs to examine how we have interacted with and engaged the community at large and how this should be supported to ensure that IMU continues to be a credible and relevant source of knowledge and expertise.

#### Conclusion

The concept of a community of scholars in a university suggests a cooperative setting in which a faculty works together to educate a body of students. The tenets of innovation, excellence in learning and teaching, research, scholarship, ethics and professionalism are embodied in the vision statement of IMU. Scholarly activity can be defined as the application of systematic approaches to the development of knowledge through intellectual inquiry and scholarly communication. Any activity that involves the intellectual and creative process that brings credit to a faculty member and/or the university in a significant way could

and should be considered scholarly. Thus scholarship can be in the areas of discovery, integration, applications and in teaching.

Although the foundation for a community of scholars at the IMU has been laid for nearly two decades, we need to strategise on how to integrate scholarly activities in a meaningful and cohesive manner that allows for collegial interaction amongst all faculty members within an environment of the highest professional and ethical standards. We need to identify and empower leaders at all levels to champion scholarship in discovery, teaching, integration and application. There must be a conscious effort to create opportunities for scholars at IMU to engage with the community and to demonstrate that their activities, as well as those of the health care professionals that IMU produces, are relevant and for the service to the nation.

The Research Institute (IRDI) and the Centre for Education (ICE), and the respective Centres of Excellence will play pivotal roles in shaping the direction and provide the platform for the stimulation of intellectual discourse on integration and application of scholarly findings for the benefit of society.

#### References

- 1. Boyer, E.L., Scholarship Reconsidered: Priorities of the Professoriate, Menlo Park, Calif; The Carnegie Foundation for the Advancement of Teaching, 1990b. Chapter 2: Enlarging the Perspective. p16.
- American Association for Advancement of Sciences 2009.
   Career basics advice and resources for scientists. http://sciencecareers.org/ careerbasicspdf. Retrieved 25th May 2011.3.

- 3. Vitae: Realising the potential of researchers. http://www.vitae.ac.uk.
- Klien E, Jackson JC, Kratz L, et al. Teaching Professionalism to Residents. Academic Medicine 2003; 78(1): 26-34.
- 5. Papadekis M, Hodgson C, Teherani A, et al. Unprofessional behavior in Medical Schools is associated with subsequent disciplinary actions by state medical board. Academic Medicine 2004; 79(3): 244-24.



### **Chapter 4: Research Activities, Management and Oversight**

### Tan Sri Dato' Dr Abu Bakar Suleiman and Joon-Wah Mak

#### **Abstract**

Research is an important activity at all universities as it complements and contributes to excellence in teaching and learning. The current vibrant research environment and culture in IMU has evolved through planned development of the elements needed for research management and oversight, research infrastructure, funding mechanism, and human capacity building in research. The structure and functions of the IMU Joint Committee on Research and Ethics which oversees the scientific and ethical appropriateness of all research carried out in IMU are consistent with accepted national and international requirements. Continuous monitoring and audit of the research projects are carried out to ensure compliance with approved provisions and research integrity. Measurements of the quality of research output based on publications in indexed journals and their impact factors and patents are carried out yearly. More robust measures to assess the utility of the research, and translation of research findings into application for patient care and public health, as well as contributions to evidence based practice will also be taken into consideration.

The research programme has received both internal as well as external funding support; internal support for physical infrastructure development, equipment, research management, training and funding has been about RM 1-1.5 million per year. In addition RM 700,000 per year is allocated as seed funding to initiate studies on novel research ideas and generate preliminary data to support submission of project proposals for external funding. Another RM 1 million per year is allocated for various undergraduate research projects. External funds obtained through competitive grant applications are about 47% of the total research funds in 2011. In 2010 and 2011, 109 and 127 papers respectively were in indexed journals and more than 60% were in Tier Q1 and Q2 journals.

The IMU Institute of Research, Development and Innovation (IRDI) set up in 2012 will, through its functional Centres of Excellence, provide the leadership in focussed research in the following areas: (a) bioactive molecules and drug discovery, (b) cancer and stem cell research, (c) environmental and population health, and (d) education research. In addition, the commercialisation and innovation units through strategic industrial linkages will provide specialised testing and consultancy services. Training in research methodologies will also be a function of IRDI. With these planned activities in place, we believe that the IRDI will be able to meet the future challenges in the research environment.

#### **Background**

Research is a necessary activity of a University as it contributes to teaching-learning and drives academic excellence. Indeed the reputation of a university depends on its research activities and output. The International Medical University (IMU) has achieved much in research since this started in late 2000.

This has been possible due to good research management, substantial investment in research infrastructure, and funding from both internal and external sources.

Research must be a core activity in all universities of repute, especially in research universities. The importance of inquiry and discovery within the community of scholars of research universities in driving teaching and learning has been aptly emphasised in the report of the Boyer Commission on Educating Undergraduates in the Research University.<sup>1</sup>

It is essential that all research activities and related processes must be carried out within an environment that is of the highest professional and ethical standards. To achieve this there must be regular and robust research management review and oversight mechanisms that ensure adherence to established institutional, national and

international guidelines and ethical norms.2,3 These activities which are within the purview of the Institutional Review Board (IRB) must be carried out regularly through audit and appropriate measurements of the ethics, quality, utility and contributions of the research process and output.

The University is aware that internal funding is needed to provide the infrastructure, management support, 'seed-funding' to initiate research activities, and to support postgraduate and undergraduate research. We are also aware that external support for research is essential as this ensures relevance of the research programme at IMU and allows benchmarking of our research quality against those at national and international levels. Success in obtaining external research funding reflects the competitiveness of our researchers, ensures the relevance of research programmes to public and industry, and indirectly indicates the reputation of the faculty and university.

Regular and timely strategic reviews of IMU's research, including those associated with undergraduate and postgraduate programmes are part of good governance. Thus a critical appraisal of the direction, its relevance to the learning activities of the University and the needs of industry, and the investment costs in relation to measurable returns, should be analysed. Periodic situational analyses regarding current strengths and deficiencies as well as future opportunities and challenges should also be components of such reviews.

Research drives excellence in teaching/ learning activities in the continuum from undergraduate to postgraduate education and professional development. Furthermore, research findings provide the framework for new knowledge and understanding which can be translated and applied for the benefit of society. It is believed that a multidisciplinary and team approach in research can provide efficiency in addressing research questions. Thus it will be essential to harness research ideas and capabilities within and outside of IMU as partners in the research process.

#### **Research Activities**

Research activities started in IMU when we became a university some 12 years ago. Management support throughout this period has been crucial in the rapid development of the infrastructure support as well as the required enablers to create the present credible research environment and culture in IMU. While it is necessary that continued University support be available to enhance and further develop research at IMU, there is an urgent need to plan for a sustainable model to defray partially the high cost of research.

Currently, the drivers for research are undergraduate and postgraduate research, faculty interest, management support, and academic and regulatory requirements. While the primary

activities of IMU are teaching and learning, research is seen as an important core activity which drives excellence in the former two and is therefore accepted as an integral function of any university.

#### **Research Funding and Support**

Research activities at the IMU started in 2000 through a very modest internal research fund of RM 41,000 given in support of seven projects. Internal grants have since increased throughout the years and by 2011 this was in excess of RM 700,000 for faculty and postgraduate research. In addition, about RM 900,000 were spent yearly on undergraduate research (as required under the various programmes in medicine, pharmacy, nutrition and dietetics, psychology, and nursing) (Fig. 1). Furthermore, capital expenditure of about RM 1-1.5 million per year was allocated to acquire essential research equipment. Within the last five years the floor space provided for research has doubled to over 26,000 sq. feet and an experimental animal facility (770 sq. feet) with the state of the art animal caging and maintenance was built.

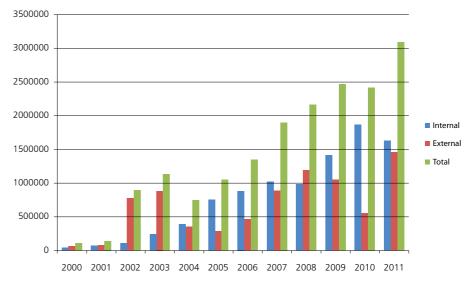


Fig.1 Research funding (RM) from 2000-2011

#### **Research Areas**

The research programme which started as an ad hoc programme based on the interest of faculty members, progressively evolved into one which catered to the individual faculty interest, expertise available, external funding opportunities, and potential for consultancies and commercialisation. There was also a conscious effort to develop infrastructure and obtain equipment to match the above. This approach resulted in a rapid increase in the types and numbers of research projects. From the very modest 9 research projects approved in 2000, by 2011 the number of research projects approved was 180, representing a 20-fold increase (Fig. 2).

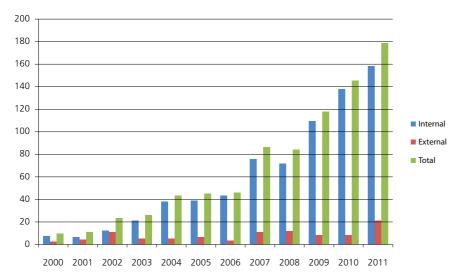


Fig. 2 Research projects approved by year and funding source

Research activities in the early years were initially in the areas of interest of researchers and as research groups formed, these were progressively directed into seven defined areas, these being:

- 1. Bioactive molecules
- 2. Cancer biology and related stem cell research
- 3. Pharmaceutics and drug delivery systems
- 4. Natural compounds and nutraceuticals
- 5. Environmental health research
- 6. Clinical research
- 7. Medical education research

While some of the above areas have developed much faster than others, these were thrust areas agreed to and defined during the Celebration of Research Seminar held in August 2008.

In tandem with the development in research activities a conscious effort was made to engage with industrial partners in relevant areas to strengthen our research programme and to look into the potential of providing consultancies, specialised testing services, and enter into joint research and development projects. We have also taken stock of our research output not only in terms of the traditional measures of research excellence such as publications in ISI indexed journals, patents, and scientific presentations, but also other outputs of research such as expertise for consultancies and biological products. We have initiated steps to identify the relevant industrial partners to collaborate and jointly develop these areas

We have now identified research areas where IMU researchers can contribute substantially in contract research, consultancy, product development and services, these being:

- Environmental health (especially in indoor air and water quality; food contaminants)
- 2. Bioactivity testing of natural products, biological products, and pharmaceuticals
- 3. Clinical drug trials, including bioequivalence testing
- 4. Specialised testing for biomarkers and genetics, environmental and food pollution

### Research Capacity Building and Nurturing

In 2004 IMU initiated research training programmes to increase the faculty capacity in research through the Graduate Research Assistant (GRA) and the Trainee Lecturer Schemes, the former being training for the Masters and the latter for the PhD programmes by research. These are essentially scholarship schemes to increase not only the research capacity in IMU but also to train our own academic staff. At the same time the BMedSc programme (for medical students transferring to graduate entry medical schools) and the Postgraduate MSc and PhD by research

were started. These programmes have been extremely successful and by the end of 2011, 158 BMedSc, 18 MSc, and 7 PhDs have successfully graduated.

Regular training workshops in research methodology, research proposal writing, research ethics and professionalism and in Good Clinical Practice are carried out at yearly intervals to equip our researchers with the necessary skills, meet regulatory requirements, and to facilitate the research process.

#### **Research Supervision**

Research is an important component of undergraduate and graduate programmes in all universities. The expected learning outcomes of the research process at the undergraduate and postgraduate levels are similar although the specific scope and depth may differ. In programmes where taught courses are part of the masters and doctoral degrees, the research component though reduced in scale, shares all the features of graduate programmes where research is the primary component.

The undergraduate who is just starting to learn about the research process, is usually exposed to research for the first time. At this level, the expected learning outcomes will be knowledge on the role, importance and contribution of basic and applied research to the advancement of science and development. The candidate would understand that all research must be research question and where appropriate, hypothesis driven. The appropriate technical skills needed for the project will be acquired and data capture, analysis, and interpretation learned through the research process. Presentation skills are acquired through the defence of the project proposal, presentation of research findings (in oral and thesis format), as well as through the viva examination process.

An important learning outcome includes knowledge and prevention of scientific misconduct including plagiarism. The importance of teamwork and professionalism and ethics in the research process is emphasised. Training in Good Laboratory Practice, Good Clinical Practice, Good Science Practice, laboratory safety, use of laboratory equipment and intensive training in techniques applied in the research project are usually acquired during this period.

The supervisor introduces and facilitates learning the principles of research and ensures that the undergraduate is conversant with the practical requirements of the project. The teacher-apprentice relationship in terms of technical skills related to the research topic is most evident at the undergraduate level. Mentoring and role-modelling are also important during the supervisory process. An important area to address and applied at the undergraduate and graduate levels will be negotiation skills in authorship and position of authors in the by-line of published papers.

At the graduate levels, Master of Science (MSc) candidates are expected to initiate the research topic and ask the relevant research questions. The supervisor(s) will fine tune the research question, objectives of the study and hypothesis of the project proposal produced by the MSc student. The important inputs crucial for the success of the MSc project will be the supervisor's advice on funding, other resources, and availability of appropriate specimens and infrastructure for the project. Basic technical skills should have been acquired during the undergraduate years; any newer or more complicated

techniques will usually be shown by or developed together with the supervisor. The MSc candidate is expected to acquire mastery of all the techniques used or related to the research topic. The skills of working with colleagues and to engage in research discussions are part of the research process. Critical thinking skills are developed through discussions and opportunities for intellectual exchanges with supervisors, colleagues and other scientists.

At the PhD level the candidate will normally have gone through the undergraduate and MSc degrees and would have acquired many of the skills needed for decision on the choice of supervisor and research topic. The doctoral student is expected to generate the research question and hypothesis of the research project. The appropriate study design should be generated by the candidate with some fine tuning by the supervisor. The technical aspects of the project will consist of established or novel techniques and the candidate is expected to acquire or develop these on his own or in consultation with the supervisor. When technical problems arise the candidate will discuss these with the supervisor on approaches to be taken. An important role of the supervisor will be to challenge the thinking of the candidate throughout the execution of the entire research process. An expected primary outcome of the doctoral programme is the finding of and contribution to new, important knowledge in the particular field of study. The candidate should be able to articulate the importance of the findings and how these contribute to the advancement in the discipline. Identification of shortcomings and new areas for further research are requirements as will be the publication of the findings in refereed, high impact iournals. The mentor's role of the supervisor cannot be over-emphasised in this interaction. An important learning outcome not formally verbalised, is the acquisition of critical thinking skills doctoral graduates are expected to develop during the process. This is the most important learning outcome for the candidate.

The research and supervisory processes can therefore be viewed as a continuum with different levels of emphasis depending on the level of candidature. The continuum is applicable for the research process including research topic identification, research design and methodology, technical training, data analysis and thesis writing. Here the supervisors' support and involvement is most intense at the undergraduate level, medium at the Master's level, and much less at the doctoral level.

There is another continuum in development of scientific thought and critical thinking. The role of the supervisor will increase progressively from the role of teacher-apprentice at the undergraduate level to that of intense two-way interaction of these aspects at the doctoral level.

Professionalism and ethics in research is formed through the interaction between supervisor and supervisee. There are many opportunities during the interaction between them for both positive and negative values to be transferred and imbibed. These include values of discipline, scientific honesty and ethical values not only in publications but also the whole chain of the research process. The supervisor is both a mentor and powerful role model for positive and negative values and practices.

#### **Research Output**

Research output in terms of publications in ISI Journals has increased credibly throughout the period, with a progressive increase in indexed published papers as indicated in Table 1 for the last four years. We have in addition to Impact Factor (IF) taken other robust measures like total citations and h-index of the Journal and the ranking of the journal into consideration.

**Table 1:** Quality indicators of scientific journal publications, from 2007-2011, International Medical University.

| Year | Publications  |       |                                   |         |                      |                       |
|------|---|-------|-----------------------------------|---------|----------------------|-----------------------|
|      | No. in ISI/<br>Scopus<br>indexed:<br>Scimagor.<br>com<br>Journals (%) | Total | Total<br>Impact<br>Factor<br>(IF) | Mean IF | Total C/D<br>(2yrs)* | Mean<br>C/D<br>(2yrs) |
| 2007 | 74 (77.1%)  | 96    | 127.282                           | 1.720   | 116.282              | 1.571                 |
| 2008 | 91 (81.3%)  | 112   | 97.314                            | 1.069   | 105.359              | 1.158                 |
| 2009 | 91 (88.4%)  | 103   | 120.2437                          | 1.321   | 135.458              | 1.489                 |
| 2010 | 109 (82.0%)   | 133   | 204.639                           | 1.877   | 209.289              | 1.920                 |
| 2011 | 127 (83.0%)   | 153   | 268.107                           | 2.111   | 147.139              | 1.159                 |

<sup>\*</sup> C/D (2yrs): Citations per document (2y) measures the scientific impact of an average article in the journal for the last 2 years; equivalent to journal IF (Thomson Reuters) TM

The quality of IMU publications in relation to the journal rankings as obtained from the Scopus Index website at: http://www.scimagojr.com (accessed 04 May 2012) is as shown in Fig. 3. The ranking of the journal where papers are published is an indication of the scientific quality of the papers in their respective disciplines, and takes care of the vast differences in impact factors between journals of various disciplines. For example, journals frequently referred to by many readers such as New England Journal of Medicine has an IF of 53.484 compared to American Journal of Clinical Nutrition with an IF of 6.606 in 2010 respectively, even though both are Tier O1 Journals.

There is increasing improvement in the percentage of papers published in journals with a higher ranking. In Fig 3 it is clear that the majority of papers (31.25% - 43.69%) were in Tier Q2 from 2007-2009. There was a dramatic improvement in 2010 and 2011 where 36.1% and 34% were in Tier Q1 journals, and 60.9% and 63.4% were in the top two tiers.

#### Journal Ranking of IMU Publications, 2007-2011\*

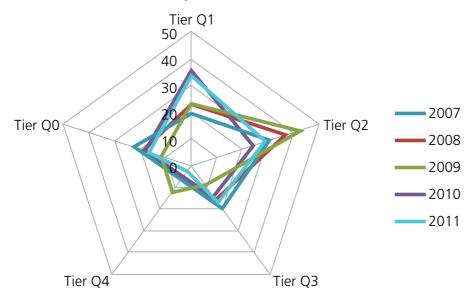


Fig. 3 Radar plot of journal rankings where IMU scientific papers are published, 2007-2011.

\*Assessed from http//www.scimagojr.com on 4 May 2012;
Tiers Q1-Q4 are journal ranks from quartile 1 – quartile 4 respectively;

Q0 represents non-indexed journals

#### **Key Challenges and Responses**

The key challenges to the further development of research at IMU will be the following:

- 1. Impact of economic slowdown and changes in governmental funding policies for research
- 2. Balance between teaching/learning activities and research
- 3. Capacity building in research webs and networks
- 4. Balance between research groups and research interests
- 5. Alignment of research with personal, institutional, national and global needs
- 6. More robust output measurements of applicability and utility of research

IMU has formed and must continually seek further strategic linkages with both local and international groups to have access to external research grants. It must collaborate with industry to have access to research grants from industry and apply for specialised governmental funds, and to commercialise specialised testing and consultancies. We need to identify research products (both biological products and expertise) which can be commercialised through industrial partners.

The focus areas of research at IMU for the next five years will be influenced by the above scenario. These approaches will enable IMU to generate external revenue

which would defray partially the cost of research and allow researchers to evaluate the relevance of their research.

The IMU Foundation that is being set up will be expected to play an important role in sourcing for and managing funds for research. The establishment of an IMU Institute of Research, Development and Innovation (IRDI) will also be a strategic step to ensure sustained development of research. Functional Centres of Excellence in four areas are being set up, these being:

- (a) Bioactive Molecules and Drug Discovery
- (b) Environmental and Population Health
- (c) Cancer and Stem Cell Research
- (d) Education Research

It is opportune that after more than ten years of research IMU has started to have some credible research products other than its publications in ISI Journals. It has through its research activities developed both expertise and products in various areas amongst which are:

- 1. Biological products (microbiological, recombinant proteins, monoclonal antibodies, etc.)
- 2. Testing services (environmental and food quality and pollutants; biomarkers for disease susceptibility and wellness; genetic testing; bioequivalence and bioavailability assays)
- 3. Other expertise and consultancies (environmental health, contract research; clinical drug trials, etc.)

The IRDI is expected to play a crucial role in research development and innovation. Amongst some of its important functions will be to:

- 1. Negotiate and coordinate all contract research
- 2. Manage and have oversight of all research carried out in IMU

- 3. Source and coordinate research funding
- Coordinate consultancies and related services
- 5. Disburse and monitor utilisation of research funding
- 6. Recommend research findings, products, process, etc. for patent filing
- 7. Identify and commercialise research findings and products
- 8. Coordinate and commercialise specialised testing services
- 9. Source and identify partners for research and development
- 10. Explore areas for innovation and translational research
- 11. Recommend further areas for development

#### **Research Culture**

If IMU is to be recognised as an excellent global private medical and health university, it has to imbibe the highest values not only in teaching and learning activities but also in embracing a culture of excellence in research. We need to excel not only in fundamental research which can contribute to new knowledge but also to applied research which is the foundation for translation and application research and evidence-based practice.

While it is easier to foster a vibrant research culture in non-clinical disciplines, there are numerous challenges faced by those in the clinical disciplines. In fact some 15 years ago, this issue was highlighted in a Lancet editorial where it was felt that it may be asking too much of academic clinicians to do well in all the three requirements of clinical duties, research and teaching.4 However, the importance of a research culture that develops a critical faculty in a postgraduate academic setting being

an invaluable asset for any career in medicine was stressed. Some lessons can be learned on how to increase the research culture in clinical departments where increased clinical workload had affected research output. In a Radiology Department this was achieved through a scorecard approached which was reviewed at quarterly intervals and with set targets of research output and quality. In addition, support for research proposal preparation, paper writing, and other administrative support were introduced.5 We will have these as part of the functions of IRDI.

A robust research culture complements the supervisory process; it draws vitality from the robust intellectual interactions between disciplines and scientists within a community of scholars of a university. This important web of intellectual processes finds optimal benefit only when clinical and basic science disciplines interact so that translational and applications research ideas can germinate and blossom.

The perceived value of research by the institution and by the faculty members of various disciplines influences its research culture. We will ensure that research both in the clinical and non-clinical domains are given their fair recognition and that this is communicated appropriately to all faculty members.

### Research Management and Oversight

It cannot be over-emphasised that the robustness of any research programme will be dependent on the establishment of an appropriate mechanism for research management and continuous oversight of all research activities. The need for a robust mechanism to review, approve, and provide oversight on research integrity and related ethics and professionalism issues was recognised

at the onset in 2001. The IMU Institutional Review Board on Research and Ethics (IMU-JC) was duly formed according to requirements of Malaysian Guidelines for Good Clinical Practice<sup>2</sup> and the International Committee on Harmonisation of Good Clinical Practice (ICH-GCP) and with adherence to provisions of the Declaration of Helsinki 2008.<sup>3</sup> All research proposals undergo vetting on the scientific and ethical aspects by the IMU-JC before they can proceed. The decision of the IMU-JC on a proposal is made within 6 weeks of submission.

Adherence to established ethical and regulatory guidelines through continuous oversight of projects starts from approval and throughout the whole research process. It also involves monitoring and oversight of the publication, communications and utilisation of research results.

It is now increasingly accepted that more robust measurements of the research output of a project is needed. The traditional measures by the number of papers published in Tier 1 Journals with impressive Impact Factors or Hirsch Index is inadequate; neither is the number of patents filed and granted. It has to be measured through utility of the results and in the medical and health sector, through applications of research for patient care or public health practice and evidence-based medicine. Results must also lead to newer understanding or approaches to medical and health problems and have the potential to be translated into newer avenues of research or patient care. This needs data mining of research findings and translating these research results into potentially utilisable applications. Examples of such studies in the medical setting will be chronic diseases affecting populations such as diabetes mellitus and as recently pointed out, for difficult to treat and fatal diseases

such as pancreatic cancer.<sup>6</sup> It has been emphasised that the enormous amount of rapidly generated results through technological advances are not often interpreted meaningfully to clinicians so that these can be translated into appropriate applications and information on the limitations.

**Conclusion** 

There is no doubt that IMU has a relatively robust research environment that has complemented its teaching and learning activities. This has been achieved over the last decade through systematic planning for and setting up of a robust mechanism for research management and oversight, investment in physical research infrastructure, provision of research funding, human research capacity building and research nurturing through trainee lecturers and graduate research assistants, and introduction of undergraduate and graduate research programmes. IMU has now launched its next phase for research development through the setting up of the Institute of Research, Development and Innovation (IRDI) with its functional Centres of Excellence, support and training facilities, and commercialisation and consultation units.

Research output as measured by the traditional tools of high quality research publications in top ranking journals has steadily improved and we have started to commercialise our research expertise through contract research, testing and consultancies. We are putting in place more robust measurements of research output other than those mentioned above. Methods to evaluate the translation of research results into applications and contributions to evidence-based practice will be additional components to the traditional measures, to give a more realistic

evaluation of research contributions to IMU, the community and nation. The functional Centres of Excellence under the umbrella of the Institute of Research, Development and Innovation will serve as our platform to meet the research challenges in the next decade.

#### References

- Boyer Commission on Educating Undergraduates in the Research University, Stoney Brook, NY. Reinventing Undergraduate Education: A Blueprint for America's Research Universities., Carnegie Foundation for the Advancement of Teaching, Princeton, NJ, (1998), 53p.
- 2. Ministry of Health Malaysia.
  Malaysian Guidelines for Good
  Clinical Practice 2nd Edition, 2004.
  Adapted from the ICH Harmonised
  Tripartite Guideline E6: Note for
  Guidance on Good Clinical Practice
  (PMP/ICH/135/95).
- 3. World Medical Association
  Declaration of Helsinki. Ethical
  Principles for Medical Research
  Involving Human Subjects. 59th
  WMA General Assembly, Seoul,
  October 2008.
- 4. Anon. A research culture that asks too much. The Lancet 1997; 349: 9051.
- 5. Brody AS, Donnelly LF. Building a culture of research among clinical pediatric radiologists: a multifaceted, programmatic approach. Pediatric Radiology 2009; 39: 367-370.
- Strimpakos AS, Syrigos KN, Wasif Saif M. Translational research. New findings and potential future applications in pancreatic adenocarcinoma. J Pancreas 2012; 13(2): 177-179.



# Chapter 5: Medical and Health Education in IMU - Evolution of the Curriculum

### Victor Lim, Sivalingam Nalliah, Nilesh Kumar, Hla Yee Yee, Ramesh Jutti, Siang-Tong Kew and Kandasami Palayan

#### The Establishment of the International Medical College (IMC)

In 1991, three Malaysian academicians comprising Kamal Salih, Mei Ling Young and the late Saidi Hashim together with the help of Ron Harden and Ian Hart, started work on a unique model of international partnership in the training of doctors. Ron Harden was the Professor of Medical Education at the University of Dundee while Ian Hart was the Professor of Medical Education at the University of Ottawa. Ron Harden and Ian Hart had previously worked with Saidi Hashim in establishing Malaysia's third medical school at Universiti Sains Malaysia (USM) in 1979. USM was probably the first medical school in Asia to adopt a problem-based integrated approach. The international reputation of Ron Harden and Ian Hart helped lend credibility to the IMC project. Through their personal links with schools in the UK and Ireland, five medical schools joined the original consortium namely Dundee, the Royal College of Surgeons of Ireland, Liverpool, Aberdeen and Glasgow.

The International Medical College (IMC) was officially launched on 13 April 1992 by the then Malaysia's Education Minister, Datuk Amar Dr Sulaiman Haji Daud who later became the second Chancellor of the University. The IMC had the full support of the Ministry of Education and Ministry of Health. What began as an innovative concept of international collaboration in medical education has thus become a reality. The establishment of the IMC was also in line with the Malaysian government's objective of making the country a leading centre for educational excellence in the region and to provide more Malaysian students the opportunity to become doctors and healthcare professionals.

IMC started with half a medical programme. Nonetheless the Phase I curriculum which was conducted over the first five semesters at IMC was very much a progressive, systems based, integrated medical sciences course.

The curriculum was not only innovative and unique in its learning-teaching methodologies; it had to be designed to a standard that is acceptable to some of the best medical schools in the world. Under the credit transfer arrangement, the Phase 1 in IMC has to be equivalent to the first two years of the medical courses of the partner schools. The basic foundation in medical sciences that the students received at IMC has therefore to be of sufficient quality to enable them to transfer and continue their training (Phase 2) at any one of these partner medical schools (PMS). Today, the original consortium of five schools has increased to over thirty and these medical schools are located in the United Kingdom, Ireland, New Zealand, Canada, the USA and Australia. Students who successfully complete Phase 2 graduate with the degree of the PMS.

Early clinical exposure and the use of a skills laboratory was a hallmark of the Phase 1 curriculum at IMC. The Clinical Skills Unit which was established in IMC was the first of its kind in the ASEAN region and was designed based on the skills laboratories in Maastricht, the Netherlands and St Bartholomew's in London, the two such major laboratories then in existence in Europe.

An international search for the Foundation Dean was initiated. Professor John S Beck, an Emeritus Professor of Pathology from the University of Dundee was appointed the Foundation Dean of the IMC and Sir Patrick Forrest, Emeritus Professor of Surgery from the University of Edinburgh as the Associate Dean. In 1993, the IMC admitted its pioneer batch of 75 medical students.

The fledging institution had the benefit of experienced and reputable persons as members of its Board of Governors, the International Consultative Committee and the Professional Advisory Education Committee (PEAC). An Academic

Council (AC) was formed, comprising of the Deans or their representatives from all the PMS. AC functions as an external quality assurance body and meets at least once a year. This annual interaction is very useful to IMC and subsequently the International Medical University (IMU). During these discussions, there is much exchange of new information and experiences and IMU has been able to adopt many best practices as a result of this. The partnership with the many PMS enables the IMU to have access to a wide range of expertise in medical education and visiting experts from the PMS hold regular training sessions for IMU faculty in all aspects of medical and health professional education.

## The International Medical University

On 4 February 1999, the IMC was granted university status and became the International Medical University (IMU). With the new status, the university was able to award its own degrees and the IMU Clinical School was established in Seremban to give students the option of completing the entire medical course in Malaysia and graduate with the MBBS (IMU). The IMU Clinical School admitted its first cohort of 46 students in September 1999.

As with the Phase 1 curriculum, the clinical or Phase 2 curriculum was designed to challenge the status quo in clinical training. An outcome based curriculum was adopted with eight key outcome domains identified. These domains were adapted from the World Federation for Medical Education (WFME) domains. The basic educational philosophy of IMC that emphasises self-directed learning was maintained. Newer learning methods like task-based learning (TBL) and the use of clinical portfolios were introduced. A unique feature of the Phase 2 curriculum was the final semester of senior clerkship.

This was again something quite new in the field of medical education in Malaysia. The final or 10th semester was specifically designed to prepare the student for housemanship. The students spent six months in Batu Pahat Hospital, a fairly small general hospital with some 250 beds and the final semester students functioned essentially as shadow house officers; undertaking clinical procedures and assuming patient care responsibilities under the supervision of their lecturers and Ministry of Health consultants.

In 2004 IMU launched its programmes in Pharmacy and Nursing. Research activities were strengthened with the establishment of the Master and PhD programmes by research. Considerable investments were made in infrastructure development at Bukit Jalil and Seremban. The number of teachers increased significantly through the recruitment of experienced and high caliber academics from Malaysia and abroad. In 2008, six more undergraduate degree courses were introduced: Dentistry, Nutrition & Dietetics, Medical Biotechnology, Psychology, Biomedical Science and Pharmaceutical Chemistry. A Bachelor of Nursing Science (Hons) programme was introduced in 2009. This is a programme designed to enable registered nurses to upgrade their qualifications from diploma to a degree level. All the new programmes were designed in a manner akin to the medical programme, using an integrated modular approach and problem-based learning. As with the medical programme, credit transfer arrangements with overseas partner universities were established: hence the Dentistry and Health Science programmes have to be benchmarked to internationally acceptable standards.

More clinical training facilities for its various programmes were secured through its close working relationship with the Ministry of Health. In addition to the Tunku Jafar Hospital in Seremban, IMU has also established training centres in hospitals in Batu Pahat, Kluang, Kuala Pilah, Port Dickson, Kuala Kubu Bahru and Gombak.

In 2010, a degree programme in Chiropractic was started. This was, and still is, the first and only university-level course in Malaysia and South East Asia. The Chinese Medicine programme began in February 2011. These programmes adopted an evidence-based approach through modern educational principles and scientific research. With the introduction of courses in Complementary Medicine, IMU's consortium of partner universities was further widened to include leading universities in China.

#### The IMU Learning Model

In 2008, IMU crafted its Learning Model. This was the first time a document was produced that aligned the Vision and Mission of the university with its educational philosophy and educational outcomes. This Learning Model now serves as the basic template for all programmes in the university.

The Learning Model was designed to enable IMU to achieve its Vision as envisaged by its founders. The founders foresaw IMU to be an innovative global centre of excellence in learning and research, supporting a community of scholars and professionals committed to serving society. They wanted the university to promote the development of students to become competent, ethical, caring and inquiring citizens; as well as visionary leaders. This Vision Statement clearly identifies some of the more important and desired outcomes expected of its graduates. The Learning Model reinforces the university's declared pedagogical philosophy that emphasizes learning and where the

primary role of faculty is not to teach but to ensure that the student has learnt. This model is also designed to promote self-learning and to inculcate the culture of life-long learning.

A key element of the Learning Model is the reiteration that programmes in IMU will be outcome based. For this purpose the eight outcome domains which were identified for the medical course were further extended to all other programmes. They are in the domains of:

- 1. Application of basic sciences in the practice of the profession
- 2. Psychomotor skills
- 3. Family and community issues in health care
- 4. Disease prevention and health promotion
- 5. Communication skills
- 6. Critical thinking, problem solving and research
- 7. Self-directed life-long learning with skills in information and resource management
- 8. Professionalism, ethics and personal development

All IMU programmes now adopt the above domains to develop their specific educational outcomes. These outcomes will drive all aspects of the curriculum in terms of content and organisation, delivery and educational settings, assessment and quality activities.

Curriculum mapping is a crucial element in the Learning Model. Each programme is expected to develop a detailed curriculum map specifying the outcomes at the point of exit as well as at every stage of the programme up to individual lesson outcomes. The lesson outcomes must be clearly stated and be related to one or more of the university's educational outcome domains. Students will be provided with a learning plan

which is based on the educational outcomes. This will be a logical plan that will guide the student through a predetermined path. This plan will guide student learning and provide them with the opportunity of reflecting on their individual learning achievements upon completion of each stage of the programme.

The content of the programme should cover all the stated outcomes. It is often difficult to specify the breadth or depth of content but the student will be informed of the depth and breadth required to pass an assessment. Every encouragement and resource will be provided for students to go beyond that is required for passing. Students who surpass this "minimum" should be appropriately rewarded. Although informing students of the so-called "minimum" would make sense, it may also be self-defeating as students may opt to strive only for the bare minimum in order to progress. This aspect of the Learning Model should be reviewed.

The organisation of the content should provide for both horizontal and vertical integration and provide opportunities for students to revisit concepts and principles (the spiral curriculum) as well as to acquire integration skills.

A variety of methods are used to deliver the content, selecting the most appropriate delivery tool to help the student achieve the lesson outcomes. Learning rather than teaching is emphasized and the delivery methods should be so designed to promote learning. There should also be strong and significant elements of independent learning, integration skills, critical thinking and problem solving. To ensure successful independent learning the necessary support and infrastructure like broad-band wireless Internet and Intranet access are provided for the students. There is a logical

progression from directed self-learning to self-directed learning as the student progresses to the later semesters. There is a rigorous and continuous evaluation of teaching and learning strategies to ensure that they are in line with the best available evidence.

The importance of role modeling in the learning of ethics and professionalism is recognized and measures have been put in place to ensure that the faculty are themselves professional and ethical. The use of technology to make delivery of learning more efficient and effective is promoted but it is important to recognize that learning will drive the technology and not the other way round. Inter-profession learning is encouraged wherever possible. The delivery methods place emphasis on the preparation of the student for the workplace and appropriate industry linkages have been developed to achieve this. Both curricular and extracurricular activities contribute to helping students achieve the desired educational outcomes.

All stated outcomes are assessed with an appropriate sampling across all outcomes. As in teaching and learning methodologies, a variety of methods are employed, selecting the most appropriate for each specific purpose. Students in IMU experience a range of assessment methods in their programmes. There are both formative and summative exercises and remedial measures are put in place for those identified to need them. Criterion referencing is used and a passing mark that is appropriate is established through standard setting.

The Learning Model also emphasises the importance of a quality system to ensure that the outcomes are achieved at each stage of the programme. For all activities the programmes must ensure that the quality cycle is complete with

appropriate remedial actions to close the loop. Regular feedback is obtained from all stakeholders including students, faculty, alumni, employers and the public.

#### **Curriculum reviews**

As a general rule IMU undertakes a major review after the programme has completed one cycle i.e. the duration of the programme which may be between 3 – 5 years.

In 2010 the School of Medicine undertook a major review of the curriculum. In undertaking the curriculum review the school had consciously adopted a more balanced method using primarily a demand-side approach. The School took into account input from various sources namely;

- 1. The Ministry of Health through its meetings with the Director-General of Health
- 2. The Malaysian Medical Council and the Malaysian Qualifications Agency; based on the most recent joint accreditation visit report
- 3. The views of the partner medical schools as expressed during the meetings of Academic Council
- 4. The views of the Professional Education Advisory Committee and a recent review of the assessment practices in the medical programme conducted by this committee
- 5. The views of the medical profession, alumni, students and patients as expressed at a forum on "Malaysia's Doctor of Tomorrow" organized by the university at the launch of the curriculum review
- 6. Globally referenced documents including the Educating Physicians Report by the Carnegie Foundation, the General Medical Council's Tomorrow's Doctor, the Scottish Doctor and the WHO/WFME Guidelines.

7. The views of faculty as expressed during the numerous workshops organized in conjunction with this review.

The review was led by the Dean of Teaching and Learning. The Centre for Medical Education (CtME) played a key role in organizing the various activities and providing the expert resources in medical education. A number of different working groups tasked with reviewing specific aspects of the curriculum were established. Recommendations of the working groups were presented at retreats where all faculty members are invited to attend and contribute their views. The draft of the review was also presented at the Academic Council in 2011 where the views of the partner medical schools were sought. The entire process took slightly over a year and resulted in a fairly major revamp of the curriculum. The revised curriculum had subsequently been endorsed by both the Faculty Board and Senate of the university and was implemented in August 2011.

In essence the main objective of the revised medical programme is to produce doctors who will be able to function in the 21st century. These are doctors who:

- will place patient safety in the forefront of their practice
- are knowledgeable and skilled
- are ethical and professional in their practice
- are committed to lifelong learning and continuous quality improvement
- practice equality and social responsibility
- are competent and caring

Similar major curriculum reviews have also been undertaken for the Bachelor of Pharmacy, Bachelor of Nursing, Bachelor of Biomedical Science and Bachelor of Medical Biotechnology programmes.

#### Support for Medical Education in IMU

Medical education expertise in institutions offering medical and other health courses is now recognized as a necessity. IMU since its establishment in 1992, has attached great importance to medical education. Today it prides itself as being a leader in medical education in Malaysia having benefitted significantly from the frequent interactions with international experts in medical education over the last two decades. IMU organised the Asian Medical Education Conference (AMEA) in 2011 and the Ottawa Conference in 2012.

In 1997 IMC undertook a major curriculum review of its medical programme with the assistance of international experts including Ron Harden and Ian Hart. Among the recommendations from this review was the appointment of a Curriculum Development Officer (CDO). The remit of the CDO was to oversee the development of the medical curriculum at the IMC with emphasis on enhancing the PBL process and the introduction of innovative approaches that would drive student-directed learning (SDL) including web-based and interactive learning.

The Medical Education Unit was established in 1999, the same year IMC was elevated to the status of a university, the International Medical University (IMU). The Medical Education Unit was placed under the Curriculum Development Officer who was assisted by an Educational Development Assistant. The primary function of this unit was to oversee innovations in teaching-learning activities of the Phase 1 medical programme. The Unit was also involved in planning and organising faculty development activities particularly in innovative delivery methods such as developing web-based educational material and improving the PBL process.

The Medical Education Unit was subsequently upgraded to the Centre for Medical Education and Media (CMEM) with two functional units namely the Medical Education Unit and the Media Unit. The Medical Education Unit continued to play an active role in planning, development and implementation of new teaching strategies as well as providing a leadership role in the effective use of innovative educational technology. The Media Unit was tasked with the development of interactive and webbased learning modules. The centre also provided support for the information technology needs of both faculty and students. Continuing faculty development activities were conducted to ensure quality teaching and to create an optimal learning environment in keeping with the mission of the institution.

In December 1999, the university moved to its present main campus in Bukit Jalil, Kuala Lumpur. There was a further reorganization with The Media Unit being transferred to the Information Technology Department as it was felt that the development of e-learning tools could be more effectively achieved there. The Medical Education and Research Unit (MERU) was established with the Head of the Unit reporting directly to the Dean of the Faculty of Medicine. MERU played a key role in planning, development and implementation of new teaching-learning strategies and organising faculty development activities. MERU was also tasked with driving educational research in the university and conducting quality assurance in education.

In 2006, with the introduction of more programmes and courses, there was a need to further enhance MERU's effectiveness in improving the standard of medical and health professional education in IMU and to raise its level

and quality of research. To this end, a major reorganization of the structure and function was undertaken. The name of the unit was changed to the Centre for Medical Education. (CtME) and it became a common resource around which all educational activities of the university would revolve.

The mains roles of CtME are to

- a. Work closely with all programme coordinators and provide advice and support for the pedagogical aspects of curriculum development, management, evaluation and improvement for all academic programmes in the university
- b. Provide advice and support for the quality aspects of all academic programmes of the university
- c. Provide teacher-training and retraining for faculty
- d. Encourage and facilitate innovative approaches in learning-teaching acitivities in the university
- e. Conduct research in medical and health professional education

The Centre was headed by a Director who reports directly to the Executive Dean of the Faculty. The Director provides academic and administrative leadership for the Centre and plans and implements all activities of the Centre as well as establishing appropriate linkages with similar institutions within and outside the country. The Director is assisted by two Deputy Directors who were appointed on a joint appointment basis between the Centre and their respective Schools. One Deputy Director took charge of training, innovations and research while the other Deputy Director looked after aspects academic quality assurance.

Other faculty members who have a special interest in medical education are appointed as Fellows. Fellows of the Centre spend up to 2 sessions a week at

the Centre and assist the Director and Deputy Directors in preparing necessary reports for the various accreditation bodies. They also head working groups established for specific tasks related to health professional education in the university. They often also serve as resource for the various continuing professional development activities for faculty.

The CtME undertakes regular training sessions for faculty in teaching scholarship. It had also established collaborations with partner schools. Experts from these partner schools visit the Centre to conduct training and advise on medical education research.

In 2011 plans were made to further strengthen the Centre and to make it a leading centre for medical education in the region. To better reflect its expanded role, the Centre has been renamed the IMU Centre for Education (ICE). These plans include establishing more full time posts for the Centre and to create visiting professorships for distinguished medical educationists from around the world. There will be full time faculty appointments to the Centre. The Centre will intensify its training programmes for both internal as well as external clients. Postgraduate programmes in professional health education at certificate, diploma, Master and PhD levels will be established. The Centre will continue to organize international and national conferences and workshops. Plans are also put in place to enhance research and publication activities. The Centre will play a key role as a facilitator and enabler in the university's quest to be a truly learning organization.

#### **Conclusions**

Despite being a relative new institution of higher learning, the International Medical University has made fairly significant progress in medical and health professional education. As a small private university which receives no financial aid from the government, its resources are understandably rather limited. Much of the progress it had achieved is the result of its close relationships with its partner schools. The partner schools have been extremely generous in helping the university develop over the past two decades.

In 2010, the Malaysian government inaugurated the Malaysian Qualifications Agency Rating System for Malaysian Higher Education Institutions (SETARA 2009). This is a rating system which measures the quality of undergraduate teaching and learning at institutions of higher learning in Malaysia. IMU achieved a Tier-5 (Excellent) rating, thus putting it on par with the more established and older public universities which are all far better resourced.

Today there are 34 medical schools in Malaysia, both public and private. The number of dental, pharmacy and allied health training institutions has also increased significantly. Competition for good quality students and faculty is therefore very keen. The past two decades may have been quite challenging for IMU but the next two decades will be even more so. As the premier private medical and health university in Malaysia, IMU must strive to maintain its position and to do so, it must continue to improve and innovate and to deliver quality programmes that are designed to produce health care professionals that possess the skills and competencies required by the health care systems of the 21st century.

## 5.1: Ethics and Professionalism Sivalingam Nalliah

The tenets of professionalism and ethics are based largely on the principles of beneficence, non-maleficence, respect for autonomy of the patient and justice in health care incorporating attributes of fairness, loyalty and morality. The core values of the International Medical University (IMU) identified by the acronym TRUST enshrines a concept where a value system would be the identifiable factor that contributes to the institute's unique status and sustenance. For centuries the learning of professionalism and medical ethics remained implicit as students and faculty learned the principles through experience and from role models. To make the teaching of ethics and professionalism explicit, all academic programmes of IMU have integrated into the core subjects identified elements of this affective domain. Line managers and corporate staff of IMU address the domain of ethics and professional practice in dealing with all stakeholders in order to be aligned to the core values identified by IMU. Professionalism and ethical practice will be the dominant domain which would promote the identity of IMU as an institution of high standing.

A general consensus among educationalists is too much core knowledge has to be mastered without developing personal skills and appropriate attitudes for the practice of medicine. Professional and regulatory bodies lament that a paradigm shift is apparent in that medicine and other life sciences are no longer a 'calling' but a pathway to a career.

Several factors have been implicated as barriers in heath professional education, including the diminishing role of the master practitioner who is not within easy reach of large number of students in the present environment where medicine and other health programmes are taught. Distributed learning through multi-site and multi-mode approaches is now a necessity. Conventional face to face teaching is not always possible because of logistics and accessibility to learning opportunities. Such systems may also not be necessary if there is adequate courseware that can be delivered efficiently incorporating a robust evaluation and assessment system. The role of e-learning has enabled changes to be made to conventional teaching and improved communication through electronic media has been put to good use in curriculum delivery. The setback in such evolutionary education is the possible alienation of personal skills that are essential in professional and personal development.

Medical technology has proliferated rapidly contributing to sophistication and diagnostic accuracy. This, however, has not developed without risk of being a barrier to ethics and professionalism. Compartmentalised care by sub-specialists as organs of the patient are 'processed' by technological gadgets both in the clinical and laboratory settings has contributed to issues questioning the very tenets of professionalism and ethics. Undeniably overzealous investigations, use of expensive medication and ready resort to technology have impacted negatively on the art of healthcare. Empathy, being caring and being accountable are attributes to be seen to develop so as to meet both internal and external client's expectations. Hiring personnel who are aligned to the core values of the IMU and providing adequate opportunities to learn the core values become crucial strategies to adopt.

Clinical practice confronts the student with the need for development of empathy, compassion, sensitivity, reality,

sympathy and involvement. Most of the programs in the IMU have built in them a formal program to teach professionalism and ethics. Time and again the content and the delivery system are revisited to ensure the attributes of being a professional are seen to be developing. The 360 degree evaluation of performance evaluation of faculty and staff and formative assessment of students provide a framework to build the strengths required for readiness to practice as professionals. Few professions require skills and attitudes to be practiced within a very high value system like the health profession and the need to maintain integrity against the barriers mentioned. Although it is an arduous task to teach ethics and professionalism in an 'unethical and materialistic' world, the IMU has prevailed by returning to the core moral values and behaviour that typify the medical and health profession by threading the contents of ethics teaching throughout the spiral curriculum.

William Osler referred to Clinical Medicine as a 'science of uncertainty and art of probability'. Uncertainty can be reduced by gathering data on the ailment, applying cognition and medical knowledge with clinical reasoning so as to propose a plan to meet the patient's needs. Strengths in good communication skills, knowledge of culture and religion and socio-economic status are vital assets that are gained through effective teaching methods and experiential learning. Good clinical judgement, the use of epidemiological principles, the awareness of social inequality and applying the principles of ethics promote good professional practice and enhances ethical behavior.

Information and communication technology (ICT) including the Internet have impacted positively on the practice of medicine, care of patients and running of hospitals and institutes. Rapid access to information and the use of evidence-based medicine is now possible as long as the appropriate courseware is well developed and available. The moral values of personnel using ICT are tested against conventional approaches of clinical care, technical management and societal values. The situation is especially complex in the modern health delivery systems. Rising patient expectations and levels of education cultural make it inappropriate and undesirable for health professionals to take a purely paternalistic approach in their interactions with patients.

Transplantation procedures, assisted conception techniques, organ donation and issues related to defining death as a finite event require the health professional, legislator and the community at large to work together in resolving moral and cultural conflicts. The programs at the IMU will be continually reviewed to align learning to address controversial and developing issues that affect ethical and professional behavior.

Human genetics is now regarded as a science of inequality, of human particularity and individual differences. Stem cell research and molecular biology are now buzz words in medical research. Contract research has been criticised as a means of gathering data in developed countries for the safe use of expensive drugs in a minority affluent. Moral views and professional practice need to be considered before an action is taken or when it is time to implement the action. Both students and faculty at the IMU must be proficient in dealing with the far reaching consequences of research proposals, processes and results derived from research conducted in IMU or elsewhere.

Soliciting for funds and obtaining grants for medical research can involve moral

and professional issues. Recruitment of subjects to participate in clinical research, the use of human tissues and the need to employ well scrutinised study protocols involves rigorous processes that are well within ethical and professional practice. The Research and Ethics Committee at the IMU plays both consultative and gatekeeper roles. Research workers and students need to exhibit competencies in conducting research through tutorage and apprenticeship.

Safety in medicine is described as 'freedom from accidental injury while errors are failure of planned action to be completed as intended or use of a wrong plan to achieve a desired aim.' It is professionally wrong to commit errors as both human life and financial loss are implicated. Good clinical practice includes patient safety as integral to clinical medicine. The entire subject of patient safety is now reflected in the revised curricula of the IMU.

Professionalism at the workplace creates an environment that is conducive and safe so as to improve efficiency and motivate its employees to be productive. Professionalism relates to exercising reasonable care and judgement. This would not only achieve and maintain independence but promote healthy team spirit and add to the objectivity of business related activities.

A code of conduct is in place to govern the conduct of employees. The concept of professionalism at the workplace has been incorporated into the core values of the organisation. The IMU continues to strive to make the environment a safe place to work through concerted efforts at making the workplace happy, being equitable and maintaining a high standard of professional practice at all strata of employment.

The health care professions, in the new millennium, are moving towards a new dimension where health care professional will play the role of advisor subscribing to the concepts of patient autonomy, social justice in health care and primacy of patient welfare. The teaching of medical ethics will be explicitly enshrined in the health professional curriculum as they are relevant to the practice of modern healthcare. Changes in the healthcare system present new challenges and other developments like alternative medicine and technological advances will continue to present ethical problems to be resolved. The master practitioner and corporate leader at the IMU will now have a bigger role in taking on the expanded task of health professional education and ethics.

#### References

- 1. Feinstein AR. Clinical Judgment New York Krieger, 1974.
- 2. Christakis N. Death Foretold Prophecy and Prognosis in Medical Care Chicago University Press, 1999
- 3. Sharpe VA. Medical Harm: Historical, Conceptual and Ethical Dimensions of latrogenic Illness New York Cambridge Unit Press, 1988.

# 5.2: Application of knowledge: Best Evidence and Outcome Based Education Nilesh Kumar

The exponential growth of research and knowledge in health care during the last century has made it pertinent that all the disciplines of health care services follow the 'Evidence Databases' to guide practitioners in each discipline<sup>1,2,3.</sup> David Sackett<sup>4</sup> defined evidence-based medicine as "the conscientious, explicit and judicious use of current best evidence in making decisions about the

care of individual patients". Harden et al., 1999 commented that the adoption of best-evidence-medical-education (BEME) does not require the teacher to be a researcher in education<sup>5</sup>. The teacher should be able to appraise the evidence available and come to a decision on the basis of his or her professional judgement.

In 2008 International Medical University (IMU) developed its learning model in keeping with IMU's declared pedagogical philosophy, which emphasises learning and where the primary role of faculty is not to teach but to ensure the student has learnt. The learning model declared the University's educational philosophy of training health care professionals of the future to be knowledgeable, acquiring good and competent skills with the ability to apply best evidence practice in patient care and management. The University's philosophy also gave direction towards producing professionals who would be caring, possess an analytical and enquiring mind and practice the culture of lifelong learning. A key element of the Learning Model was the adoption of outcome-based curricula for all IMU's academic programmes based on the following domains:

- 1. Application of basic sciences in the practice of the profession
- 2. Psychomotor skills / Clinical skills
- 3. Family and community issues in health care
- 4. Disease prevention and health promotion
- 5. Communication skills
- 6. Critical thinking, problem solving and research
- 7. Self-directed life-long learner with skills in information and resource management
- 8. Professionalism, ethics and personal development

In keeping with the learning model, all programmes in IMU use curriculum delivery tools which enhance self-directed learning and instil the habit of lifelong learning such as problem-based-learning, task-based-learning, seminars, community-based-projects, and community and family case studies.

Programmes are also increasing their focus on attainment of competencies. In the medical programme, an E-log for clinical competency has been developed based on consensus views built on professional judgement and experience and modelled after the Scottish Doctor (Simpson et al., 20026). The expected clinical competencies in gradually ascending scale of 0 to 4 from semester 1 to semester 10 have been established for the medical programme. In Dentistry, competency tests are conducted on patient simulators in the Dental Skills Centre followed later by tests carried out on real patients in the Oral Health Centre. The student has to be certified to be competent in the required tasks before being allowed to next stage. In Phase III of the Pharmacy programme, students are required to gain competencies and real-life professional experience of a pharmacist as both scientist and practitioner. In the Nursing programme, a proficiency record log over the 4 years has been developed to ensure that each student acquires the experience and competencies in essential nursing procedures. Students are assigned specific clinical tasks which are their competencies and are assessed by the instructor.

Mapping of outcomes in Phase 1 and Phase 2 of the Medical Program has been completed in compliance with the IMU learning model. The Phase I programme maps the outcomes across semester 1 to semester 5 modules whereas Phase II maps the outcomes across 113 core problems which are

designed to encourage problem-based and independent learning. The exit competencies in both the Phase I and Phase II BDS Dental Programme have also been mapped out. In Pharmacy, phase outcomes are mapped under the following domains: (i) professional standards of practice; (ii) team work; (iii) ethical stance; (iv) empathy; (v) life-long learning and (vi) evidencebased practice. Similarly, all essential components of the nursing programme including basic and clinical science knowledge component, nursing practice and skill components have been determined and mapped from year 1 to vear 4.

Outcome based education is implemented in all the other health science programmes and learning outcomes in the different semesters are mapped under the IMU's outcome domains. The learning taxonomy, using the MQA approach of cognitive, psychomotor and affective domains, are also being mapped for the modules in different semesters.

#### References

- 1. Humphreys BL, McCutcheon DE. Growth patterns in the National Library of Medicine's serials collection and in Index Medicus journals, 1966-1985. Bull Med Libr Assoc 1994, 82: 18-24.
- 2. Arndt KA. Information excess in medicine. Overview, relevance to dermatology, and strategies for coping. Arch Dermatol1992, 128: 1249-1256.
- 3. Hojat M, Nasca TJ, J E, Frsiby A, Veloski J, Gonnella J. An operational measure of physician lifelong learning: its development, components and preliminary psychometric data. Med Teach 2003, 25: 433-437.

- 4. Sackett DL, Straus SE, Richardson WS, Rosenberg W, Haynes RB. Evidence-Based Medicine: How to Practice and Teach EBM. 2000, London, Churchill Livingstone.
- 5. Harden RM, Grant J, Buckley G, Hart IR. BEME Guide No.1: Best Evidence Medical Education. Med Teach 1999, 21(6): 533-562.
- Simpson JG, Furnace J, Crosby et al. The Scottish doctor- learning outcomes for the medical undergraduate in Scotland: a foundation for competent and reflective practitioners. Med Teach 2002. 24: 136-143.

### 5.3: Inter-professional Education

Hla YeeYee

The International Medical University recognises that it is not only the curricula that needs to be aligned to the changing expectations of society; the delivery of curricula and the educational environment (physical and interpersonal) also need to be conducive to the development of the learner into an efficient and caring professional working in a team towards the common goal of quality patient care. The provision of effective patient care now depends much more on the individual practitioner's understanding of the need to collaborate within and between healthcare teams in community settings and the care provided in hospitals1.

The old concept of doctors as team leaders and other healthcare professions in the support role is no longer appropriate as many tasks traditionally done by doctors are being taken over by others. The demarcation between professions is no longer clear-cut, and overlapping of roles is inevitable. Healthcare professionals can no longer afford to be territorial

and the mindset needs to be changed. It would be difficult to do this after graduation, when they are placed in an often stressful hospital setting. Giving students from different programmes an opportunity to get to know each other, the way they think & study, the way they reason and how they cope with challenging situations would help to change the mindset. The IMU has students in various health professional programmes under one roof and is therefore an ideal place to provide such opportunities.

Successful implementation of Interprofessional Education (IPE) would achieve the following <sup>2</sup>:

- Improvement of the quality of care given to patients as IPE underpins the reality of the complexity of healthcare.
   Single professions or individual professionals working in isolation do not have the expertise to respond adequately and effectively to the complexities of many service users' need.
- Professionals are encouraged to learn with, from and about each other.
- Respect for the integrity and appreciation of the contribution of the various members of the health-care team are instilled. Learners are seen as equal learners, even though there may be differentials in power, position or status in the workplace.
- Practice within professions is enhanced
- Professional satisfaction is increased.

The IMU shall provide learning opportunities for students to recognise the heterogeneity of the nature of work within professions and to instill in students respect for each other's profession both in and outside the classroom. These will take the form of shared components in the curriculum content, combined small group learning (practicals, PBL, history-taking, ward

rounds), simulated situations in the Skills Centre, community projects and extracurricular activities. Student involvement in IMU-led community projects like the Kampung Angkat and the Charity Run also provide excellent opportunities for interaction between students from different programmes as well as with their Faculty Mentors.

#### References

- Parsell G,Bligh J (1998).
   Interprofessional Learning. Postgrad Med J 1998; 74: 89-95 www.ncbi. nlm.nih.gov/pmc/articles/.../pdf/postmedj00086-00
- 2. Principles of Interprofessional Learning-Faculty Development -NHS. www.faculty.londondeanery.ac.uk

### 5.4: Leadership Victor Lim

There are many definitions of leadership. A simple definition would be a process whereby an individual influences a group of individuals to achieve a common goal. In IMU leadership is a quality that we would want to have in all our staff and students. The university's vision explicitly states that we shall produce visionary leaders and the tag-line of IMU's core values emphasises that "TRUST builds Tomorrow's Leaders".

Leadership has no hierarchical connotation. Leadership qualities can be engendered at all levels. It is important to distinguish between a leader and a boss. Bosses have the authority to deliver orders and directives but this does not necessarily make them leaders. The followers of a boss comply with the orders and directives because of fear of the consequences of non-compliance. The followers of a leader want to achieve the high goals set by the leader because they believe in and share a

common vision. Some bosses are also leaders but not all; in fact there are many bosses but few leaders.

Leaders are made not born. Acquisition of knowledge and certain skills are essential in the making of a leader. While leadership is learned, the skills and knowledge processed by the leader can be influenced by the individual's attributes or traits, such as beliefs, values, ethics, and character. Knowledge and skills contribute directly to the process of leadership, while the other attributes give the leader certain characteristics that make him or her unique.

Key elements in leadership are trustworthiness and professionalism. People will follow a leader who they can trust and have confidence in. A good leader is someone who truly inspires, someone who genuinely cares about the growth and development of their staff, and someone who is respected. Leaders are conscious of their strengths and weakness and continually seek selfimprovement. Leaders constantly reflect on their actions and interactions with others and take responsibility for them. Leaders are role models who care for the welfare of their teams. A leader has good problem-solving, decision making and planning skills. Most importantly leaders are good communicators who inspire their teams and clearly explain to them the goals to be achieved and the processes that have to be undertaken. Leaders harness internal energy to accomplish their visions with persistence and clarity and help their employees rise up to carry out their own purpose within the organisation.

In IMU we aim to provide our students and staff opportunities to gain appropriate leadership skills in addition to the education and training in their respective vocations. To do so we need to create an educational environment

for students and staff alike to learn leadership. Such an environment cannot be left to chance. Deliberate measures are taken to achieve this. An interdisciplinary approach is taken and encompasses

- 1. a knowledge component on leadership theory
- 2. practical and experiential learning to develop the skills
- 3. reflection on their knowledge and experience to learn and grow

Both curricular and extracurricular activities are to be planned to allow everyone to have the opportunity to play and experience a leadership role. For the students, the Deans and Academic Services Department will work closely with the Student Affairs Department to plan and implement such a programme. For the staff the Human Resources Department will similarly plan and implement a leadership programme. The experiential and reflective components should as far as possible be integrated with routine tasks, learning activities, extracurricular events and community services.

IMU regards the acquisition of leadership skills as an important component of student and staff learning. A learning environment that promotes the learning of leadership skills needs to be created to allow for opportunities for knowledge acquisition, practical application and reflection of experience in an integrated manner.

#### Reference

1. Guthrie KL, Thompson S. Creating Meaningful Environments for Leadership Education. Journal of Leadership Education 2010; 9:50-4.

### 5.5: Life-long learning Ramesh Jutti

Life-long learning (LLL) has been defined as:

"A process of gaining knowledge and skills (and competence/mastery) that continues throughout a person's life."

"A continuous building of skills and knowledge through a lifetime experience beyond formal education"

In IMU, LLL encompasses developing individual learning styles, study skills (learning to learn), reflective practices for deeper learning and a concept of the continuum of learning with a spiraling effect which may last a life time

LLL is a lifelong process, is voluntary and self-motivated with a sense of engagement to learning. It is a self-funded pursuit of knowledge & skills and is both reflective and experiential. LLL will share mixed connotations with other educational concepts, like adult learning, continuing education, permanent education, perpetual learning, continual learning and other terms that relate to learning beyond the formal educational system.

Lifelong learners need to focus on learning "to know" (an approach to learning that is flexible, critical and capable); learning "to do" (acquiring and applying skills, including life skills); learning "to be" (promoting creativity and personal fulfillment); and learning "to live together" (exercising tolerance, understanding and mutual respect).

The emphasis will be on "learning to learn" and the ability to keep learning for a lifetime. Higher-level understanding is through reflection and informal learning. Learners need to reflect upon learning and analyse their personal

development. The goal of participation in learning is more significant than the reason why.

The benefits of LLL are personal, social and economic. LLL develops one's natural abilities, opens the mind and creates a curious and hungry mind. It increases wisdom, keeps one up to date and helps adaptation to change. LLL actively contributes to society, allows a person to communicate and establish relationships as well as make new friends. It enriches life and promotes self-fulfillment. LLL is a necessity in the era of globalisation and allows the learner to adapt to technological advancements and to changing nature of work.

IMU will aim to transform 'education and training' into 'lifelong learning' through informal learning, selfmotivated learning, self-funded learning and universal participation (learning for all purposes - social, economic and personal). Towards this end IMU will offer a systemic view of learning, comprising all forms of formal and informal learning, emphasise the centrality of the learner and the need to cater for the diversity of learner needs, as well as the motivation to learn, and draw attention to self-paced and self-directed learning. IMU will move increasingly to an individualized model and will stress on the multiple objectives of education, which include economic, social or cultural outcomes: the personal development as a scholar, and citizenship.

In this process IMU will recognise and value all forms of learning, not just formal courses of study; bring together learners and learning opportunities; make provision for standards, guidelines and mechanisms whereby achievements can be recognised and rewarded and emphasise the reformulation of access in the different settings where learning

can occur. IMU will also create a learning culture by giving learning a higher profile, both in terms of image and by providing incentives for the people most reticent to opt for learning; strive for excellence through the introduction of quality control and indicators to measure progress and introduce innovative pedagogy. Valuing learning is a key element in the creation of a culture of learning.

As lifelong learning is competency driven, IMU has introduced new curricula, new teaching methods and adopted new pedagogical models. Formal systems of delivery are made more open and flexible, so that such opportunities can truly be tailored to the needs of the learner, or indeed the potential learner. As the content of learning, the way learning is accessed, and where it takes place may vary depending on the learner and their learning requirements, IMU will use new processes for education delivery and technologies to support the varied and dynamic needs of the learners.

As IMU moves towards a full learning organisation, educators will function more as guides and facilitators to sources of knowledge and develop individualised learning plans for the learners. People will increasingly learn in groups and from each other. Educators themselves are lifelong learners and there is a need to link initial training with ongoing professional development. Assessment will be used to guide learning strategies (assessment for learning) and to identify pathways for future learning. IMU will identify and address motivational barriers (especially social and personal factors) that hinder some people from participating fully in life-long learning.

IMU will recognise and value all forms of learning, not just formal courses of study. It will make provision for standards, guidelines and mechanisms whereby achievements can be recognized and rewarded and introduce quality controls and indicators to measure progress.

#### **References:**

- http://ec.europa.eu/education/ policies/lll/lll\_en.html
- Nordstrom N., 2008, Top 10 Benefits of Lifelong Learning, Published at http://www.selfgrowth.com/ articles/Top\_10\_Benefits of Lifelong Learning.html
- 3. European Society of Association Education, 2005, What is Lifelong Learning? The view from the European Commission, European Society of Association Education, viewed 30 September 2010, [5].
- 4. Delors, J., 1996, Learning: The treasure within Report to UNESCO of the International Commission on Education for the Twenty-first Century, UNESCO.
- 5. Learning as a Way of Being: Strategies for Survival in a World of Permanent White Water. Jossey-Bass, Inc 1989.

### 5.6: Peer Learning Hla Yee Yee

Peer learning is an integral part of IMU's educational policy and supports its motto "Together. Learning". It is not meant to replace teacher-led learning activities; nor is it a strategy to ease a dearth of quality teachers. In a peer group learning setting, the learner is not burdened with the presence of a teacher and feels more free and in command of his /her learning. This academic freedom fosters confidence and self-directed learning.

As a learning organisation, learning is not merely confined to student learning.

Faculty and corporate staff also need to continue to learn and peer learning will be the major delivery mode for the staff of IMU.

It is established that regardless of content, people working in small groups tend to learn more of what is taught and retain it longer than when the same content is presented in other instructional forms. The format can vary and may be formal or informal, and this learning strategy is also known by other terms e.g. cooperative learning, collaborative learning, collective learning, learning communities, peer teaching, peer group learning, reciprocal learning, team learning, study circles, study groups, and work groups. Educationists also assert that the best way to learn is to teach others. In peer learning, reciprocal teaching and learning together go hand in hand.

Peer learning is ideal for instilling a sense of responsibility and fostering effective team-working albeit the effort may not be graded. It also provides an opportunity for the person to hone his or her communication skills (including presentation skills). While working as a team, learners also develop skills such as active and tolerant listening, helping one another in mastering content, giving and receiving constructive criticism, and managing disagreements. Finishing an assigned task on time requires planning, time management and people management skills. Another advantage of learning together is that students see for themselves the diversity in terms of learning styles, rates of learning, memorising, synthesising and reflecting. The fast learner needs to develop patience and the slow learner learns how to learn from the others.

The barriers to peer group learning may present as learner resistance because more facts can be delivered through teacher-led learning like lectures while peer group learning takes more time to master the same content. Some simplistic arguments like "I paid to be taught by a teacher; not to learn from my peers" may also arise. There could be some friction within a group and students may want to change groups or replace a member of a group. But students who learn to adapt to such situations would have learnt to function in the real world.

Peer group learning for students in IMU takes place in Problem-based Learning (PBL) and task-based learning (TBL) sessions which are formal activities slotted into the time table. Ideally, peer groups should be small (not more than 8) because larger groups would encourage non-participation by some group members. Informal study groups are advised not to have more than 4 members.

Other group activities which require team work are the assignments given in certain modules like selectives, seminars, community projects and electives. Informal peer group learning in the form of study groups are encouraged, together with the "Buddy System" where senior and junior colleagues are paired.

#### References

- Collaborative Learning:Group Work and Study Teams. Tools for Teaching by Barbara Gross Davis; Jossey-Bass Publishers: San Francisco, 1993.
- 2. The Koblenz Model within Anglo-American Cultural Studies at German Universities http://www. developingteachers.com/articles\_ tchtraining/koblenz1\_jody.htm

#### 5.7: Teamwork Siang-Tong Kew

Teamwork is work performed by a team towards a common goal.

In health care, teamwork has been defined as "a dynamic process involving two or more healthcare professionals with complementary backgrounds and skills, sharing common health goals and exercising concerted physical and mental effort in assessing, planning or evaluating patient care."

Effective health care requires teamwork. Everyone involved must work together for a common goal – i.e. helping the patient. In the Institute of Medicine 1999 report "To err is human: building a safer health care system" researchers reported that teamwork has a direct effect on patient safety and treatment outcomes. Teams that work well together make fewer mistakes, and results in better treatment outcomes i.e. improved quality of care. For team members, team work promises increased job satisfaction, stress reduction, and more effective time management.

There is a difference between an individual working as part of a group and an individual working as part of a team. In a team, members work inter-dependently, and work towards team goals. They understand these goals are accomplished best by mutual support. Team members feel a sense of ownership, they collaborate together and use their talent and experience to contribute towards accomplishing the team's objectives. Team members base their success on trust, and all members are encouraged to express their opinions, views and questions. Team members accept diversity, make a conscious effort to be honest, respectful and listen to every person's point of

view. Team members see conflict as a part of human nature and they react to it by treating it as an opportunity to hear about new ideas and opinions. Everybody in the team wants to resolve problem constructively. Team members participate equally in making decision, but understand that the team leader should make the final decision.

There are three elements in the Ministry of Health of Malaysia's corporate culture, promoted since the late 1990's namely, Caring, Teamwork and Professionalism. It is therefore important to prepare the future health care professionals to work in team, while they are still in training.

Teamwork is a way of life in IMU. Students get exposed to working in teams from their first semester right through to their final semester. Examples are aplenty: problem based and task based learning (PBL/TBL), seminars, laboratory sessions, students' research projects, community and family case study (CFCS), clinical groups, community services, sports events and social events. Students generally feel comfortable working in teams, as they can talk and discuss with one another. Brainstorming opens up the views and perspective of everyone in the team. Team members share experiences. Teams are more effective, as burden is shared, and chores delegated and distributed. Teams can study and learn together. Team members learn communication skills. and learn to accept diversity.

Some of the negative aspects of teamwork include: over-dependence of team members on others, members only concerned with individual assignments and fail to see the big picture, laidback members who remain passive and unwilling to contribute, and over-domineering leader sidelining members.

IMU places great emphasis in working in teams in order that that IMU graduates will fit in well in the working environment of the MOH or other health care institutions.

#### References

- 1. Xyrichis A, Ream E .Teamwork: a concept analysis. Jan 2008; 61(2): 232-41.
- Kohn L, Corrigan J, Donaldson M (eds) (2000) To Err Is Human: Building a Safer Health System. Washington: National Academy Press.
- What Are the Benefits of Teamwork in Healthcare? | eHow.co.uk http:// www.ehow.co.uk/list 6576957
- 4. Teamwork in the Classroom: www. ndt-ed.org/.../ClassroomTips

## 5.8: Service to others Kandasami Palayan

Institutions that provide training of health care professionals have a responsibility to instill among their staff and students the sense and appreciation of social contract. Service related learning activities enable staff and students to develop personally, socially, academically and morally. IMU shall nurture health professionals who will be dedicated to serve and improve the quality of life in their communities. It shall engage all members of the university community, including students, faculty and corporate staff in service activities. IMU shall be a leader in providing service to others and an agent of social change in the nation.

Service to the community is a moral obligation of the university. The learning experience in the community is different from that of traditional formal education; it exposes students to the real-life environment. By understanding

the needs of the community, students become responsible adults who can compete successfully and contribute to the world in a more meaningful way. It also helps to integrate and engage all members of IMU in a common purpose, including students, faculty and corporate staff in service activities. The students, faculty and corporate personnel will have opportunities to develop their interpersonal skills and leadership attributes. These activities will also serve to foster the close relationship and understanding among all members of the IMU family.

Community activities will be an integral part of the curriculum. The activities shall be centrally coordinated to integrate and engage all members of the IMU community. IMU shall also engage our partners in training, namely the Ministry of Health and other relevant institutions. Services shall be achieved through a variety of health promotion and prevention programs involving all departments and disciplines, both academic and corporate. IMU shall contribute to improving the health status of the community by providing exemplary patient care, responding to community needs, and providing continuing health care education

IMU will continue to expand and improve upon its community service programmes like the "Kampung Angkat" project. These projects will serve not only to improve the health status of the community but will also provide opportunities for student learning and population-based research.



### **Chapter 6: Human Capacity Building and Quality Issues**

### Peter Pook and Francis Wen

#### Introduction

In the International Medical University (IMU), our greatest asset is our human capital. It is our human capital that has transformed IMU from a dream into a reality. Today, IMU is a reputable private medical university in Malaysia and we aspire to be a leading private Asian health educator that creates value through integrating education, healthcare and research in the near future. In order to achieve this, we need to ensure that our human capital would have the capability and capacity to stay relevant for the future.

Since our inception in 1992 as the International Medical College (IMC), our staff force of 362 in 2008 has grown steadily and rapidly in the past 5 years to the current 550 in 2012 and we are still expanding. The significant increase in headcount is due to the human capital needs in tandem with the growth of our student numbers and our academic programmes for both undergraduates and postgraduates in the Schools of Medicine, Dentistry, Postgraduate Studies and Research, and Pharmacy and Health Sciences which includes traditional and complementary medicine.

#### The Early Years (1999 - 2000)

During the early years of our inception, our human capital building focused on reaching out to the world's best medical educators to buy-in our dream of building the first private medical college in Malaysia. The early faculty comprised of dreamers, believers and optimists that made IMC to succeed. These leaders also realised that in order for it to work, they must continuously challenge each other to excel through the three "Is" of the IMU - innovation, imagination and insight and continuously build a robust talent pipeline that will elevate the College to greater heights. This

was realised in 1999 when IMC was accorded University status by the Government of Malaysia.

The journey of capacity building began with the recruitment of key staff and medical lecturers to run the early programmes. This came with support from our dedicated management team and partner medical schools with the establishment of the Academic Council (AC) and the Professional Education Advisory Committee (PEAC). The AC was established in 1992 where its membership comprised of the Deans or their representatives from all our partner medical schools and partner dental schools and all members of the IMU Senate. The key objective of this set up is to help the IMC and later the IMU to continuously improve in various areas of medical education development. These areas included admissions process, curriculum and its delivery, assessment, method of transfer to partner schools, faculty appointments and development. as well as research and postgraduate training. Feedback from the faculty and partners are used to improve efficiency and effectiveness in all areas that we do. It is our philosophy that feedback is critical to improve ourselves. Hence, we value the feedback from our partner

schools, our government regulatory bodies, our commercial partners, parents, vendors, faculty members, staff and even students to move forward.

The outcome of these is measured by the quality of the students that we take in and produce. Over the years the criteria for our student intake have become more stringent. Our students' performance in both the IMU and our partner schools have always been the measurement of our quality and standards. In addition the feedback from employers who employ our graduates are also a testimony of the standard of our students. The same goes in the recruitment of our academic staff where the selection of our faculty members are increasingly stringent to ensure the best job fit. With a quality faculty, the output would be an effective teaching and learning delivery system, increase in ISI research publications and increase in clinical consultancies by our academic staff.

In 2001, the Professional Education Advisory Committee (PEAC) was established to provide advice and guidance to the IMU on all quality matters relating to the education and training of students enrolled in the professional undergraduate, postgraduate and continuing professional development (CPD) programmes of the IMU. PEAC's focus is to advise and share with the IMU on best practices in all educational matters related to IMU's degrees, postgraduate and CPD programmes. The high standards challenge our human capital to be robust and up to mark. Hence the quality of our faculty must withstand the assessments recommended and this therefore provides a drastic push to our efforts in human capacity building at IMU.

### Expansion of Programmes (2001 – Present)

Our human capital capacity building also gained momentum in line with our expansion of programmes from medical to health sciences. Our Dentistry programme was launched in 2008, the Bachelor of Medical Science programme in 2003, Bachelor of Pharmacy programme in 2004, followed by Nursing in 2005, Nutrition and Dietetics in 2008. Chiropractic in 2010 and Chinese Medicine in 2011 . All in all there are 15 undergraduate programmes, 4 postgraduate Masters and 1 PhD programmes to date. With the increase in the number of programmes, our human capital needs to be strengthened in order to meet regulatory requirements of the Staff: Student Ratio and the stringent requirements of the Academic Council and PEAC.

There was a substantial increase of headcount in our faculty. At part of talent sourcing the IMU went on a two prong strategy to recruit talents externally from all over the world, getting the right skills and competencies into the faculty and at the same time developing our home grown internal talents to meet the changing needs. There was an influx of foreign faculty

members that makes the IMU truly international. Today, almost 50% of our faculty are foreigners from 20 different nationalities. This provides an opportunity for our students to draw from a wealth of experiences available through the diversified faculty members and best practices worldwide.

### Capacity Building in Academic and Research

Our aim is to strengthen our staff bench strength in both academic and research. thereby developing a robust human capital pipeline for the IMU. In line with this aim, several great initiatives have been planned and implemented. The Medical Education and Research Unit (MERU) was established with the Head of the Unit reporting directly to the Dean of the Faculty of Medicine. MERU played a key role in planning, development and implementation of new teaching-learning strategies and organising faculty development activities. MERU was also tasked with driving educational research in the university and conducting quality assurance in education.

In 2007, with the introduction of more programmes and courses, there was a need to further enhance MERU's effectiveness in improving the standard of medical and health professional education in IMU and to raise IMU's level and quality of research. To this end, a major reorganisation of the structure and function was undertaken. The name of the unit was changed to the Centre for Medical Education (CtME) and it became a common resource around which all educational activities of the university would revolve.

The key functions of CtME are to work closely with all programme coordinators and provide advice and support for the pedagogical aspects of curriculum development, management,

evaluation and improvement for all academic programmes in the university. It also provides advice and support for the quality aspects of all academic programmes of the university and trains our faculty on "teacher-training and retraining". Apart from the above the Centre encourages and facilitates innovative approaches in learningteaching activities and conducts research in medical and health professional education. Mandatory programmes were introduced for new faculty members who joined us within the first 6 months to ensure certain standards in teaching and learning are met with strict adherence, as part of our quality initiatives. All these would enhance our human capability in the IMU.

In 2011 plans were made to further strengthen the Centre and to make it a leading centre for medical education in the region and to better reflect its expanded role, the Centre has been renamed the IMU Centre for Education (ICE). These plans include establishing more full time posts for the Centre and creating visiting professorships for distinguished medical educationists from around the world. There will be full time faculty appointments to the Centre. The Centre will intensify its training programmes for both internal as well as external clients. Postgraduate programmes in professional health education at certificate, diploma, Master and PhD levels will be established. The Centre will continue to organise international and national conferences and workshops. Plans are also put in place to enhance research and publication activities. The Centre will play a key role as a facilitator and enabler in the university's quest to be a truly learning organisation.

The IMU has also strategically set apart an increasing budget each year to enable all faculty members to attend and present their publications in local, regional and international conferences. This reflects the seriousness of the IMU to develop our human capability with the objective of enhancing the effectiveness and quality of our faculty.

In addition to this, there were also several programmes initiated to train our local Malaysians as part of capacity building and succession planning. The Lecturer One and Graduate Research Assistants (GRA) Programmes were initiated in 2004 where we sponsored 9 lecturers and 7 GRAs to complete their postgraduate Master and PhD degrees. This was followed by the introduction of the Trainee Lecturer Programme for Clinical School which was launched in 2006. This programme sponsors doctors to complete their full time post-graduate specialisation over a period of 4 years in local universities, after which they will serve the IMU for a 4-year period. These formal programmes are part of the University's plan to build and enhance the capability and quality of our human capital.

Strategic partnerships with external parties which include our partner schools and business associates have also played an important role in our human capacity building. We have sent our staff to partner schools overseas to learn and exchange ideas to give them a real life experience on how others conduct their teaching-learning activities in their respective universities. Capacity building is not only confined to class room learning, workshops or competency-based training.It also embraces on-the-job learning, educational tours and short term assignments that have enriched our employees' exposure both locally and overseas.

## Capacity Building of Non-Academic Staff

As for the non-academic staff, the

growth of the University has also provided a clearer career path for them. In the early years, the needs were more straightforward which was to support the faculty in their corporate and academic roles. However, the capability and capacity building in the non-academic side have also grown in tandem with the growth in the faculty. Job roles and multi-tasking have been enhanced and increased with the current and future needs. Staff have been trained and exposed in a more structured manner. Competency-based training was introduced to enhance the competencies required for the nonacademic staff which includes technical and soft-skills competencies.

The Managers Development Programme and Executive Development Programme were designed in 2012 to ensure training and learning interventions are more structured and aligned with the business needs. Soft skills workshops like Coaching for Performance, Kepner-Trego's Problem Solving and Decision Making, Customer Services, Time Management, Performance Management and others were implemented for both the academic and non-academic staff to enhance soft skills and competencies. Apart from these non-academic staff are also required to enhance their technical competencies unique to their roles. In addition to classroom training, the on-the-job exposure, multi-tasking, and partner schools educational visits were also part of the overall capability building for nonacademic staff.

#### **Capacity for Project ASPIRE**

In 2011, the IMU embarked on a five-year strategic plan under Project ASPIRE (2011-2015). In this strategy, the goal is to transform the IMU to be a leading private Asian health educator that creates value through integrating education, healthcare and research by

2015. This ambitious dream pushes the University to relook at its human capital strategy, to develop move avenues where our human capital can be developed further to execute the various initiatives. We believe that different leadership skill sets and competencies are required to support the achievement of each strategy.

One of the internal training providers to enhance the capability is our IMU Centre for Continuing Education (ICCE) which was launched by the President in 2011. It was set up under one of the IMU 5-years' strategic plan (ASPIRE) initiatives to provide quality continuing education programmes to healthcare providers. Its vision is to be a leading Asian life-long educator in healthcare recognised for quality and innovative education programmes. ICCE seeks to utilise the expertise of the University besides leveraging on the expertise of the partner Universities, industrial partners and other agencies through smart partnership to deliver enriching and effective educational experiences. These courses are made up of seminars. hands-on workshops and even conferences delivered through face-toface, e-learning or blended mode.

In 2011, ICCE has facilitated the successful conduct of over 20 exciting continuing professional development (CPD) programmes by various departments/teams in the university. They cover a broad area of specialties ranging from research to healthcare related courses and even English language proficiency. Examples include Good Clinical Practice (GCP) Seminar and IMU-HTJ MRCP PACES Preparatory Course that continue to be popular CPD courses. As for 2012, ICCE plans to further expand its range of CPD courses coverage to include training for librarians in areas such as information technology, e-learning, medical laboratory and human resources.

In the aspect of human capacity building, the computer revolution has set a new era in teaching and learning. Our faculty are trained using the technology to deliver their teaching activities through e-learning. The focus on using the various social media to reach out to our students and network with their fellow academics has also put us in an advantageous position to engage our staff and students through innovative ways. This would also help us to stay relevant in the future to be aligned with future trends and needs of the younger generation. In addition, e-learning is also an effective way to fulfil the dreams of adult learners especially postgraduate programmes, at their convenience via the web.

The Institute of Research, Development and Innovation (IRDI) was established in 2012 to serve as a platform to support all research activities at IMU. In addition, it aims to realign our research direction in order to enhance our competitiveness in securing external grants, and to efficiently utilise our resources and expertise as well as to enhance the research capability of our faculty. IRDI also serves as a training provider to beef up the capability of our resources in research, development and innovation.

#### HR Strategy (2011-2015)

In order to support the business growth and ASPIRE plan, we have developed a five-year human capital transformational road map for the IMU. Realising the criticality of our human capital asset, our HR vision is to optimise IMU's human capital to meet the future needs. This vision is supported by four strategic themes:-

- To improve organisation effectiveness
- To enhance human capital optimisation
- To strengthen capability for the future
- To building a sustainable performance culture

The HR interventions to be put in place to support the strategic themes are focused on compensation and benefits, recruitment and selection, performance management, talent management and training and development. These interventions are supported with a strong foundation of our core values and culture. Building a strong belief system is fundamental for our success as it is in our belief that drives what we do. Our leadership stems from a belief system that is based on values which include respect for people, honesty, integrity, professionalism and trust. Our core values are derived from the acronym T.R.U.S.T. which stands for trustworthiness, responsiveness, unity, service and tenacity.

We realise that in order to attract, build and retain our talents, we need to be competitive in our total remuneration which covers both the transactional and relational rewards. Transactional rewards would mean staying competitive in the market in terms of monetary rewards and benefits, although it may not be the deciding factor for retention. However, focusing on relational rewards is a must have to attract and retain our employees as it engages staff on a personal level. These would be the relational matters that touch the hearts of the employees. Setting a clear vision and mission, the organisational culture, values and philosophy, the development of our human capital, providing them a career path in the organisation, the learning and development, the leadership and the setting of a conducive work environment where everyone feels important and respected, are motivating factors that will retain our talents.

#### **Leadership and Talent Management**

Leadership and talent management would be our focus to drive our human capacity to the next level. In our talent management framework, we have identified and sourced for the right talents that not only possess the right technical skills but also the right soft skills to lead at all levels. In acquiring external talents, we have tightened our selection process to choose the right fit that would have the capacity to go further.

Internally, we need to continue to strengthen our staff bench strength to develop a robust talent pipeline for the future. Here, we have developed our employee Individual Development Plan (IDP) in 2012 for each staff to ensure their learning and development would take place systematically in a structured manner. Training needs analysis has been drawn over a period of 3 years to facilitate closing of competency gaps and prepare high potentials to take on greater responsibilities as part of succession planning. In our IDP, the focus is on two key areas of development, (1) Personal Development, and (2) Professional Development.



The personal development focuses on areas of managing self, managing others and managing work. These would include the development of soft skills like self-awareness, problem-solving and decision making, performance coaching, customer service skills, emotional intelligence, managing conflicts, and leadership development to enhance the personal development. The professional development focuses on acquiring knowledge, acquiring technical skills, building technical competencies and active networking which will build the employees capacity professional development.

The training needs will list down all the requirements for both professional and personal development with the gaps of our employees. All training and developmental interventions to close these gaps will be planned systematically with priorities given to critical needs areas that are required to support the business and in line with our strategic plan. This would cover both for our academic and non-academic staff.

Leadership development has always been a priority in the IMU where we have identified potential leaders to be trained for future roles. We believe the capacity building of our human capital falls on the quality of our leadership at all levels. It is our leaders that create clarity of purpose and a common focus for their teams. It is our leaders that build passion and commitment in their teams and create excitement for the future and motivation for achieving the organisation's strategic goals. It is this passion and commitment from the employees, supported by good management systems and a performance-oriented culture that ensures excellence in the execution. By growing our talents from both externally and internally, we are strengthening our bench strength and creating a pool of capable leaders to

take on greater responsibilities for succession planning and future strategic needs so as to remain competitive and relevant for the future.

#### **Current and Future Challenges**

The education industry has grown tremendously in Malaysia over the past 10 years with many other institutions offering similar programmes and stiff competition. The stringent requirements from our government regulators have also added on to the challenges faced by many private universities today. The shortage of good qualified academic staff has always been a challenge where many of these are highly sought after by competitors in the industry. The hiring and selection of competent candidates have always been a criterion in the IMU to capitalise on skills that have the capacity to move us further.

Apart from the external hiring, the retention of our employees is also an area of concern where our internal talents are enticed by external parties to join them. The efforts put in to train, develop and engage our employees will be in vain if attrition rates grow to a level of concern. We are thankful that the past records have shown that the employee turnover in the IMU has been below the industry average. However, we should not take this lightly as our human capital is our greatest asset.

Internally, one of the growing challenges arising from our human capital growth is managing diversity within the institution. The IMU started small as a college but with its steady expansion over the past 10 years, there was an influx of foreign academic staff from all over the world that are attracted to join us. We have in 2012 academic staff from 20 different nationalities ranging from the first world to the third world. Our academicians come from the United Kingdom, Europe, United States, Canada, the Middle East,

Africa and South Asia. This diversity has created both a wealth of ideas and learning as well as understanding the different cultures to streamline them into a One IMU Culture to move forward. While we respect diversity and individualism, there should be a common goal where all have a clear understanding on the way forward. Human capacity building across multiple generations is also a challenge to be acknowledged with. The IMU in its diversity has employees who range from several cultural generations from the Veterans, to Baby Boomers, to Generation X, to Generation Y and now the newly acknowledged Generation Z that will be in the workforce soon. Each of these generations has its own unique characteristics that motivate them. Hence, for capacity building we need to be sensitive to the differences of the generation gaps and what makes them tick.

The challenge of time spent in teaching and learning versus time spent on research and professional development is also an increasing concern. The availability of external funding for research or research grants from the Government is also seen to be reducing. These challenges coupled with issues on the execution of our strategy should not be neglected. With ASPIRE in place, 27 initiatives have been developed and are to be implemented in various stages over the next 5 years. The challenge of understanding and balancing these initiatives with the on-going operational work is an art to be mastered. This may pose a concern for some who come from a single-focused organisation rather than multi-tasking with matrix reporting. The ASPIRE challenges the employees in many areas, pushing the academia to be accountable for their schools' performance which includes producing quality students with self-sustainability. It also our dream to become an altruistic Academic Health Centre against the current commercialisation practices in the healthcare industry. Being a private university, this is an entire new mindset that our employees may have to learn to make it work with imagination, innovation and insight.

#### Conclusion

In conclusion, our human capacity building in the IMU has been an exciting journey with much progress seen over the past 20 years. We have grown from a small medical college to one of the leading medical universities in Malaysia producing quality medical and health sciences professionals. The capacity building in the IMU has been designed carefully to meet the demands of the University at each stage of its needs as well as planning the long term needs to achieve its strategic objectives. The methodology used in capacity building to enhance our human capital capability ranges from the traditional classroom training, workshops, regional and international conferences to e-learning, on-the-job exposure, educational tours, inter-varsity assignments and other collaborative partnerships with our partner schools and business associates. Our training and development are planned internally from the Human Resources Department, IT, ICE, ICCE, e-Learning Department, Research and Postgraduate Studies. We have successfully grown our faculty and corporate staff to meet the present needs and in preparation for the future needs.

With the launch of ASPIRE in January 2011, our human capacity building has been intensified through an ambitious human resource strategy to ensure that the IMU has robust and sustainable human capital talents that are able to remain strategic and relevant for the future.

The above comes not without obstacles and challenges in the ever challenging environment. Employee attraction and retention is still and will still be a factor to be worked upon. Enhancing our competitiveness and employee engagement will be the key to overcome this. In terms of managing diversity, the generational gaps and even balancing the ever demanding strategies, the development of leaders that can lead with emotional intelligence, insight and innovation are fundamental to move the organisation forward in the new century. It is the quality of our leaders that we have that will make a difference in the IMU today and make IMU relevant in the future. With strong leaders equipped with the right leadership capabilities, we are confident that the IMU will achieve its dream to be a leading private Asian health educator that creates value through integrating education, healthcare and research in the near future.



### **Chapter 7: IMU Clinical and Healthcare Services**

### Siang-Tong Kew, Kandasami Palayan, David Kok-Seng Wong, Verna Kar-Mun Lee, Allan Kah-Heng Pau and Teddric Jon Mohr

#### Ministry of Health facilities for clinical training

The International Medical University (IMU) initially called the International Medical College (IMC) was established in 1992 to meet the Malaysian Government's objective of achieving improved health care and better doctor: population ratio. IMC was granted university status in February 1999 thus providing an additional option to students to read the whole medical degree (MBBS) in Malaysia. In the planning of the University, there was emphasis not only on developing a good curriculum but also providing an environment that would be suitable for student teaching-learning activities. To achieve this, IMU has striven towards integration of student teaching-learning and healthcare services.

IMU does not have its own teaching hospital. Through a memorandum of understanding Ministry of Health (MOH) facilities are used by IMU for clinical training. Students are posted to primary care centres (e.g. community health clinics, government health clinics, general practitioner clinics) as well as secondary and tertiary care facilities. The latter facilities include Hospital Tuanku Ja'afar Seremban (HTJS), Hospital Port Dickson (HPD) and Hospital Tuanku Ampuan Najihah Kuala Pilah (HTAN) in Negeri Sembilan; Hospital Batu Pahat (HBP) and Hospital Kluang in Johore; and Hospital Kuala Kubu Bharu and Hospital Orang Asli Gombak in Selangor. Students also receive training in primary care at several MOH health clinics in Selangor and Negeri Sembilan. The clinical facilities provide a unique educational environment where students are exposed to a continuum of different levels of healthcare settings and are able to appreciate the integrated manner in which health services are delivered in the country. Students also observe integration of different clinical disciplines and support services, referral pattern and comprehensive health promotion and disease prevention programmes.

IMU has established a unique relationship with the Ministry of Health (MOH) in the training of doctors. The experience of a private medical school working together with the MOH in the delivery of healthcare service and sharing the teaching-learning activities is unique. Ministry of Health hospitals are traditionally service hospitals and the experience of working with a private medical university is new. Over the years a smart partnership has developed between the two organisations. The MOH clinicians participate in the teaching, supervision and assessment of IMU students, while the IMU academicians provide health care services in addition to their teaching responsibilities. The following measures are in place to enhance and support the clinical training of IMU students:

- A Memorandum of Understanding (MOU) between the Government of Malaysia and IMU for the training of Medical Students at MOH Facilities.
- The Joint Committee (National), Joint Management Committee (State) and Joint Implementation Committee at Hospital level have been established to oversee the smooth conduct of teaching-learning activities.

- Formalisation MOH facilities as Teaching Hospitals – Hospital Batu Pahat and Hospital Port Dickson have been officially launched as Teaching Hospitals by the MOH.
- MOH clinicians involved in teaching activities are formally appointed as Honorary Lecturers, Senior Honorary Lecturers, Senior Honorary Clinical Consultants to the University.

Since the establishment of Clinical School, IMU has endeavoured to help transform the MOH facilities into a "teaching hospital" with special commitments to teaching, research and tertiary care. The presence of IMU clinicians at the teaching facilities has contributed to significant change in clinical practice at these teaching facilities. The presence of IMU clinicians has resulted in a substantial increase in the care provided to patients. IMU has played a pivotal role in the expansion of existing services and the development of several new services at HTJS: namely Endoscopy Services, Minimal Access Surgery, Paediatric Surgery, Gastrointestinal Surgery, Laparoscopic Surgery, Paediatric Neurology, Foetomaternal Medicine, Gastroenterology & Hepatology and Respiratory Medicine.

Historically, HTJS was the principle teaching hospital for Phase I clinical training since 1995. In September 1999, Phase 2 clinical training was introduced at HTJS in addition to Phase I training. With the expansion of clinical training, students were distributed to multiple clinical sites to prevent student overload at any particular training site. The clinical training programme took into consideration the fact that hospital admissions today are mainly confined to sick patients; hospital stays have become shorter with ambulatory care as a preferred option. Although intensive care facilities have rapidly expanded, they are not suitable for student training. The University has progressively transferred clinical training from major hospitals to smaller hospitals and ambulatory care settings.

In addition to HTJS, clinical training of IMU students are now distributed to several new sites and they include Hospital Port Dickson, Hospital Tuanku Ampuan Najihah Kuala Pilah, Hospital Batu Pahat, Hospital Kluang and several Health Clinics.

#### Hospital Tuanku Ja'afar, Seremban

HTJS, formerly known as Seremban General Hospital, is the state and referral hospital for the state of Negeri Sembilan. Established in 1930, it acquired a new 8-storey building in 1969. It has a bed capacity of 995 beds and most of the clinical specialities and support services. HTJS has been designated by the Ministry of Health as the First Responder for any emergencies arising at the Kuala Lumpur International Airport (KLIA) requiring medical assistance. This hospital is used for undergraduate, postgraduate and subspecialty training. The Hospital is constantly being upgraded and refurbished to meet the increasing demands on the service. In 2004, a new multidisciplinary specialist clinic block replaced the old outpatients' clinic. Substantial amount of ward based teaching has been transferred to this facility. The Intensive Care Unit (ICU), the Coronary Care Unit (CCU) and High Dependency Unit (HDU) have undergone major upgrading and expansion exercises to support the increasing complexity of cases that are being handled at the Hospital. These facilities are now being equipped with state-of-the-art facilities. The A&E unit has been extensively renovated and



Hospital Tuanku Ja'afar, Seremban is the main teaching hospital for IMU students

expanded to serve as the main referral hospital for KLIA airport disasters. The imaging services have been upgraded with Computerised Tomography (CT) Scanners, Ultrasound scanners, MRI scanners and Mammography machine. Pathology and haematology services have benefited from additional floor space and the services have vastly improved. Ambulatory Care Centre of HTJS opened in 2012. It has 145 beds, and is currently providing Endoscopy, Dialysis, Surgical Day Care, Oncology, Paediatrics, Medical and Nephrology Day care services. A Women and children hospital is under construction, and is expected to open in 2013. It will increase the total bed-strength by 346 beds.



Hospital Batu Pahat provides an excellent environment for senior clerkship for semester 10 students



IMU lecturers from Batu Pahat offer specialist outpatient service in Hospital Kluang



Hospital Tuanku Ampuan Najihah, Kuala Pilah, teaching hospital for semesters 8 and 9 medical students



IMU lecturers from Seremban have regular specialist clinic sessions and inpatient care in Hospital Port Dickson

#### **Expansion of clinical training to Hospital Batu Pahat**

Hospital Batu Pahat (HBP) in Johor is a modern nucleus hospital operational since November 1994. It is a 314-bedded specialist hospital providing secondary and tertiary care services. It has the following specialty services, namely Internal Medicine, General Surgery, Orthopaedics, Paediatrics, Ophthalmology, Obstetrics and Gynaecology and Anaesthesiology. The workload and the case mix are suitable for undergraduate training. HBP was launched as an IMU teaching hospital in March 2003. The IMU senior clerkship programme of Semester 10 is conducted at this facility. The hospital provides an excellent environment similar to where most of our students will be posted once they graduate. Being a smaller hospital, this facility provides the opportunity for students to have close rapport with patients and staff members

#### **Expansion of clinical training to Hospital Kluang**

Hospital Kluang is a new 268-bedded hospital officially opened on 20 December 2011. It has an annual admission of more than 20,000 patients, and handles about 134,000 outpatients a year. In addition, the Accident and Emergency unit sees about 96,000 patients a year. There are close to 3,000 deliveries per year. The Hospital has fairly good support services. It has operation theatres, laboratory services, radiology services and intensive care services, and offers basic specialist services. IMU clinicians stationed at Batu Pahat Clinical School offer specialist outpatient service on a regular basis. Hospital Kluang has become an additional teaching facility since 2007 and semester 10 students are posted to Hospital Kluang on a rotational basis.

#### **Expansion of clinical training to Hospital Port Dickson**

Hospital Port Dickson Hospital is situated about 30 km from Seremban, and is less than half an hour from the Seremban Clinical School by car. It is a 93-bedded nucleus-hospital of the Ministry of Health. It offers inpatient, outpatient services and emergency services by medical officers. IMU Specialists run regular outpatient clinics and conduct ward rounds in this hospital. Since March 2004, students in major disciplines (Internal Medicine, General Surgery, Obstetrics & Gynaecology, Paediatrics, Ophthalmology, ENT, Psychiatry and Orthopaedics) regularly attend teaching sessions at this facility. The hospital was officially launched as a teaching hospital of IMU on 7th March 2005.

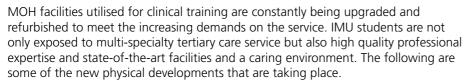
## Expansion of clinical training to Hospital Tuanku Ampuan Najihah, Kuala Pilah.

Hospital Tuanku Ampuan Najihah (HTAN) is a 314 bedded secondary care hospital sited about 40km from Seremban. It was sanctioned as an additional teaching hospital for IMU in 2008. It has the following specialty services, namely Internal Medicine, General Surgery, Orthopaedics, Paediatrics, Ophthalmology, Obstetrics and Gynaecology and Anaesthesiology. Like Hospital Batu Pahat, the workload and the case mix are suitable for undergraduate training. HTAN was launched as an IMU teaching hospital in March 2010.

#### **Expansion of clinical training to Health Clinics**

MOH has sanctioned several health clinics in the state of Selangor and Negeri Sembilan for clinical training in primary care. Faculty from the Department of Family Medicine conduct clinics and teaching activities regularly at these facilities. The major facilities utilised by IMU include the following:

- Klinik Kesihatan Seremban in the vicinity of HTJS: this is a large modern primary health care facility handling about 1200 patients a day. The Maternal & Child Health Clinic here has a load of approximately 170 patients per day.
- Klinik Kesihatan Ampangan located about 8 km from the Clinical School sees 240 patients a day. A Maternal & Child Health facility is attached to this facility. IMU students are posted on a regular basis for Family Medicine Training.
- Klinik Kesihatan Port Dickson is a large primary care facility located about 25 km away from the Clinical School. It handles a load of about 290 patients a day. The Maternal & Child Health Clinic close by has a load of more than 80 patients per day.



- 1. Woman and Child Health Centre, Hospital Tuanku Ja'afar
  This facility is being built adjacent to the Clinical School. It is expected to be ready
  in 2013. This 6-storey block with 314 beds will be a dedicated facility to manage
  patients with gynaecology, obstetrics and paediatric problems.
- 2. New Service Block at Hospital Batu Pahat
  A 6-storey service block is expected to be commissioned for use in 2012. This
  facility will increase the current bed strength of the hospital from 314 beds to 514.

The bed strength in the MOH Clinical Facilities by the end of 2012 are displayed in the table below:

Bed Strength of IMU Teaching Hospitals (MOH), Year 2012

|    | Hospitals                                  | Bed Strengths         |
|----|--|-----------------------|
| 1. | Hospital Tuanku Ja'afar Seremban           | 995 (old block + ACC) |
| 2. | Hospital Port Dickson                      | 94                    |
| 3. | Hospital Tuanku Ampuan Najihah Kuala Pilah | 314                   |
| 4. | Hospital Kluang                            | 268                   |
| 5. | Hospital Batu Pahat                        | 314                   |
|    | Total                                      | 1985                  |



Seremban Health Clinic



Ampangan Health Clinic

Lecturers from Family Medicine provide clinical service in Seremban and Ampangan Health Clinics



IMU Healthcare Services in the Bukit Jalil main campus

#### **IMU Healthcare Services**

#### **Background**

International Medical University started as International Medical College (IMC) in 1992. In the last 20 years, it has established itself as a leader in the private medical and health educator sector in this country.

In the early 2000's, IMU realised that it was over-dependent on medical education, especially the IMU-PMS model. Looming ahead were serious threats from competitors, changes in legislation in countries of partner schools, economic uncertainty and limited scope of expansion in undergraduate healthcare education. Amongst the strategies proposed in mitigating the education over-dependence was to diversify the IMU portfolio of business into healthcare services.

Ministry of Health has granted the use of several hospitals and scores of health centres for the training of IMU students through memorandums of understanding. Nevertheless, medical education is not complete without its own healthcare services component. Looking ahead, IMU healthcare would benefit IMU education by providing an additional clinical environment for faculty and students in teaching-learning, in conducting research and in future expansion into post-graduate programmes in medicine, dentistry and health sciences. IMU Healthcare would also re-position IMU as a unique brand to stay ahead of the competition.

Hence, it was imperative that IMU builds its own healthcare facilities.

#### **Objective**

IMU Healthcare aimed to provide a comprehensive range of services from medical, dental, pharmacy, allied health to complementary healthcare services such as chiropractic and Chinese medicine. The essential elements in the IMU healthcare philosophy include an integrated multidisciplinary team approach, salaried healthcare providers with team-based incentives, services with emphasis on wellness and preventive care, broad range of care from primary to tertiary with standard of care benchmarked to the best available standards worldwide. and using innovative yet proven patient management models.

#### From planning to reality

A strategic planning meeting for IMU Healthcare was held in December 2008. The IMU board of directors, Khazanah's representatives on the IMU board, CEO of a private medical centre and a private healthcare consultant participated actively with the IMU deans and heads of department during a two-day meeting. Following that, research and consultation with external parties were carried out to study the feasibility and best healthcare models for IMU healthcare in 2009.

Finally, the IMU board of directors approved the IMU healthcare business and financial proposal in October 2009. Physical facilities planning and renovations work for the IMU Chiropractic Centre and IMU Specialist Clinic started in November 2009 and was completed in May 2010. Recruitment of healthcare staff and procurement of medical equipment, furniture, health information system software and hardware were carried out simultaneously.

The application for MOH approval was submitted in May 2010. Physical inspection by MOH officers took place in June 2010. IMU Medical Clinic was granted license to start practice in July 2010.

#### **IMU Healthcare Services**

IMU Healthcare services were officially opened by Dato' Seri Liow Tiong Lai, the Honourable Minister of Health of Malaysia on the 4th of December 2010, concurrent with the IMU inaugural conference on Chiropractic and Chinese medicine. IMU Healthcare is headed by Dr David Wong, the acting Healthcare Director. He is assisted by a team comprising of the Healthcare Manager. Heads of clinic/centres, and the supporting services from IMU Education team. IMU Healthcare envisioned to have an integrated healthcare system where clients have the option to have their health and wellness managed by a team of allopathic medical doctors, complementary healthcare providers such as chinese medicine physicians and chiropractors as well as members of the allied health that include the dietitian. clinical psychologist, pharmacist, and nurses. In future, additional healthcare providers may be included in the team.

Clinical and administrative information management system, called PMO, with electronic medical records was established in all the IMU healthcare centres.

An innovative "faculty practice plan" was also drawn up for members of the faculty. Besides providing opportunities for clinical practice, the plan ensures fair remuneration to the faculty staff whenever they practice after office hours in the IMU Healthcare facilities.

Together with IMU Education, a series of public talks on current important health issues were delivered by various faculty members in 2011 and 2012. They included the following:

*Medicine:* Hypertension; Quit smoking; Asthma; Colorectal Cancer; Health Screening; Diabetes, Depression.

Chiropractic: Upper extremity problems & their treatment; Philosophy, science and art of chiropractic; Headache, Back Pain.

Chinese Medicine: Effective Chinese Medicine therapy for neck pain; Chinese Medicine treatment & acupuncture therapy; Cupping for health; Chinese Medicine in maintaining good health.

Oral Health (Dental): Avoiding the drill, fill and pull of your child's teeth; Crooked teeth & braces; Lumps & bumps in your mouth; Oral wellness – starting point to good health; Role of fluoride in oral health; Oral habit.

*Nutrition & Dietetics:* Diet & weight management; Mind your food portion.



Dr George R Le Beau manipulating Datuk Seri Liow Tiong Lai's shoulder in IMU Chiropractic Centre

#### A. IMU Chiropractic Centre

IMU Chiropractic Centre, headed by Dr George R Le Beau, was opened to the public in April 2010. The centre offers chiropractic examination, structural assessment and chiropractic treatment, such as therapy, ultrasound, electrical muscle stimulation, intersegmental traction and rehabilitation exercise. Besides this, discount packages are offered to patients with 10 times treatment, special discount to children, elderly, IMU staff / student, and staff family members. The centre operates from 9am – 5pm on weekdays and 9am to 1pm on Saturdays. From Feb 2011, the centre has extended evening hours from 5.30pm – 8.00pm on every Tuesday & Thursday. Currently there are 5 Chiropractors scheduled for clinical practice. This is supported by 9 clinic assistants, a front desk officer and a receptionist.

Number of patient sessions increased gradually from 3220 by end of 2010 to 7550 in 2011. It is expected that over 10,000 patients will be seen in 2012. While most of the patients come from the Klang Valley, others have driven from as far as Johor Baru, and most of them are adult patients.

A second centre was opened in Taman Tun Dr Ismail in May of 2012 with two chiropractors. A third centre is expected to open before December 2012.



IMU Chiropractic Centre

#### B. IMU Medical Clinic (formerly known as IMU Specialist Clinic)

IMU Specialist Clinic, headed by Dr Verna Lee Kar Mun, was opened to the public in July 2010. The clinic offers family medicine services ranging from personalised wellness screening programme to management of acute and chronic primary care problems. It also provides plain radiography services, while laboratory service is being outsourced to Gribbles Pathology Lab. The clinic is open from 9am to 9pm on weekdays, and 9am to 1pm on Saturdays. Family Medicine faculty members from Seremban and Bukit Jalil are scheduled for clinical practice from 9am to 5pm, and a part time medical officer worked initially in the clinic from 5 to 9pm. From January 2012, a full time medical officer is scheduled from 9am to 7pm on weekdays and 9am to 1pm on Saturdays. Support staff consist of two staff nurses (SRN), a radiographer and a receptionist.

The number of patients increased gradually from 1059 by end of 2010 to 4386 in 2011. Majority of patients were adults coming from the Klang Valley.

Counselling services by academic dieticians and clinical psychologists were introduced in January 2011. Ambulatory psychiatry specialty, spine specialty, endocrinology and physiotherapy services were introduced in 2012.

IMU Medical Clinic is the first private medical clinic to obtain accreditation by the Malaysian Society of Quality Healthcare (MSQH) in December 2011.

#### C. IMU Oral Health Centre

The IMU Oral Health Centre treated its first patient on 14th January 2009 and was officially launched on 4th December 2010 by Datuk Seri Liow Tiong Lai, the Honourable Minister of Health Malaysia. It is headed by Dr Sneha Ravindranath and Professor Allan Pau Kah Heng. This Centre is equipped with the state of the art dental technology and provides patient-centred holistic dental care.

The IMU Oral Health Centre supports clinical training for undergraduate dental students, and provides routine and specialist dental services, ranging from prevention, hygiene and restorative care to orthodontics, advanced prosthodontics and implants services. We provide personalised care based on the principle of maximum interception and minimum invasion (MIMI) to achieve oral wellness.

There are two dental officers who screen and provide routine care, and 18 international faculty staff with specialty training providing specialist dental treatment. The Centre is managed by a practice manager and supported by two receptionists, seven dental surgery assistants, two radiographers and a treatment co-ordinator to ensure a positive experience for our patients. The operational hours are from 9am to 5pm on weekdays and 9am to 1pm on Saturdays. In addition we work on extended evening hours on Tuesdays and Thursdays until 8pm.

The number of patients treated over the years has increased gradually. In the first half of 2012, a total of 576 patients were seen, an increase of 17% from the previous six months. In addition, as part of our community services, we have provided a number of free dental check-ups and have also launched free Urgent Dental Service on 7th July 2012 providing emergency dental treatment during working hours.



IMU Medical Clinic accredited by the Malaysian Society of Quality Healthcare (from left: Datin Paduka Siti Sa'diah Sheikh Bakir, President of MSQH, Datuk Seri Liow Tiong Lai, Minister of Health Malaysia and Dr David Wong from IMU Healthcare)



A patient receiving treatment at the IMU Oral Health Centre



Dr. Liow at the IMU Chinese Medicine Centre

#### D. IMU Chinese Medicine Centre

IMU Chinese Medicine Centre, headed by Prof. Zhou Wen Xin from Shanghai, was opened in November 2011.

The centre offers herbal medication, acupuncture, moxibustion, baguan / cupping and tuina for children and adults. Besides these, there are also other traditional forms of chinese medicine therapy. The centre operates from 9am – 5pm on weekdays and 9am to 1pm on Saturdays. Currently a total of 7 Chinese Physicians are scheduled for clinic appointment. These physicians also work as lecturers at the university.

The number of patients attending increased gradually from a couple of hundreds (Nov-Dec'10) to nearly two thousand by the end of 2011. Overall, the demand for Chinese Medicine is mainly herbal medicine, followed by procedures like acupuncture and cupping services. Most of the patients are Chinese adults.

#### **Future of IMU Healthcare Services**

Beginning from 2012, IMU Healthcare will focus on growth, as part of our ASPIRE vision and mission. We have five clinics providing Medical(1), Dental(1), Chinese Medicine(1) and Chiropractic(2) services. These are operated by university faculty offering a high level of service to patients, while the students have a safe learning environment. The clinics will continue to expand in numbers and locations and in their breadth and depth of service to patients. The Chiropractic centre is the first to expand to an off-campus location in TTDI and is planning to expand to a second off-campus centre before the end of 2012.

In addition, there will soon be a tertiary level of care inclusive of a hospital with seamless integration of the clinic network for a full spectrum to meet patient's medical needs, be they acute or chronic disease treatment. This network will be known as the Academic Health Centre delivering world class medical care of international repute, encompassing selected centres of excellence. The Academic Health Centre will bring in a pioneering / innovative aspiration to develop interactive programmes between clinics, the Medical Centre and patients. The chosen centres of excellence will deliver research; develop training and innovative services, meeting the highest international standards and bringing to Malaysia and Southeast Asia medical services from the best of the best in the world. The Academic Health Centre through the Medical Centre and clinics will provide a standard setting service that will produce a training centre from which will exit health professionals trained not just in institutional and community based delivery systems but based on an individualised diagnostic and treatment process of the individual, be it acute or chronic disease management in a outcome continuum model. The IMU Oral Health Centre services component will also be integrated within IMU Healthcare services.

The current challenges for IMU healthcare are the lack of awareness and publicity to the general public of IMU Healthcare services as well as the lack of IMU as a strong brand in healthcare. A number of marketing plans are being implemented to mitigate these challenges.

# **Chapter 8: Activities under the IMU Cares Programme**

## Kok-Hai Ong and Mei-Ling Young

#### 1. Background

The International Medical University (IMU) strives to be an engaged university as well as a learning organisation. As an engaged university we need to establish excellent working relationships within members of our IMU family, including our Alumni, with industry and with the community to whom we serve. As a learning organisation, IMU and its community of staff, students and alumni will strive to share a common focus towards making meaningful contributions to the community in producing skilled, knowledgeable, caring and ethical health professionals who will serve the community at large. In the process, we will emphasise on life-long and team leaning.



In order to achieve these objectives, an important mechanism that IMU has established is through the activities under the "IMU Cares" programme. This will provide an effective channel for the direct involvement of staff, students and alumni. Such activities inevitably create opportunities for inter-professional learning, teamwork as well as putting into practice, the skills and knowledge acquired through formal 'classroom" settings.

As a consequence, direct involvement of community activities has now become an integral part of the key performance index (KPI) of IMU corporate and academic staff. For the students, such activities are integrated into the curriculum of all IMU academic programmes. IMU students now have many opportunities available to them either through the academic programmes, institution directed events such as Charity Runs and Carnivals, through student societies or, for new students, through orientation activities when they enter IMU. All these community service activities are held under the umbrella of "IMU Cares".

#### 2. "IMU Cares" Activities

For ease of comprehension, activities directly linked to the community carried out over the last twenty years in the history of IMU can be divided into various groups as follows:-

#### 2.1. Institution initiated Fund Raising Events

These fund raising events are initiated by the IMU management with the active support and participation of both IMU staff and students. They are carried out with the primary aim of raising money for charity as well as pro-active integration of staff, students and public towards an altruistic objective. Charity runs have been initiated over the past decade and the participation of the public was actively solicited. The





Participants doing warm up exercise during 2012 Charity Run & the launching of Chariofare





Prize giving ceremony for Chariofare Charity Run and picture of one of the stalls by the staff

latest Charity run held on 22 September 2012 attracted over 1,500 participants; and coupled with the Carnival and Charity Fair on the same day netted well in excess of RM 130,000. An earlier Charity Fair in 2011 also raised over RM 30,000. The IMU Charity Golf held in 2005, succeeded in raising nearly RM 60,000. For all these events, IMU provided a working budget as seed money for the initial planning and marketing and to ensure their smooth implementation. All the money that was raised goes to charity organisations that were pre-identified for each event during the planning stage. Apart from the money for charity, these university events also have the objectives of bringing about integration of its staff and student population as a single family as well as the realisation of the caring outcome.





Community service activities in collaboration with Mead Johnson Nutrition at PPR Kota Damansara (Section 8) Flats, Selangor; BMI measurements and dental examination





Public Health Fair with the Malaysian Pharmaceutical Society (MPS)

#### 2.2. Public Health Education and Health Screening Activities

The second important aspect of IMU's community activities involves public education on various health issues to create greater awareness among the general public in general and among focused groups in particular. These activities are carried out by IMU subject specialists among the academic staff as well as contributions from external specialists. On occasions, these activities are done in collaboration with specific non-government organisations (NGO's) or with industrial partners. Selected topics have included adolescent health, breast cancer, breast feeding, eye care, mental health, spine health, autism, oral health, smoking cessation, diabetes, etc. They are held as lectures/talks, panel discussions or seminars in the various campuses of the university or in the communities.

Health screening for the general public is directed towards assisting individual public members to identify their respective health problems. The objectives include allowing the IMU students to put into practice, the knowledge and skills that they have acquired from the University, to assist the public to take more a more proactive towards their own health and wellness, and where applicable, to understand specific health diseases or health problems within the community. These activities are carried out in a number of settings including in the IMU campuses, in community halls, in public areas such as shopping malls and in specific rural settings. Common parameters that are selected for careening include blood cholesterol, blood glucose, blood pressure, urine screening, oral health, physical examinations, PAP smears and nutritional status. The population screened includes both adults and children.

#### 2.3. Adoption of Communities

Another major objective of IMU that is to build into community projects includes creating opportunities for community based research involving the students, thus bringing about the application of knowledge gained in the classrooms towards academic excellence in research. Such activities also provide an excellent opportunity for faculty and students of the various academic programmes to work together as a team, thus bringing about inter-professional learning and team work. Towards this end, IMU has "adopted" a number of rural constituencies in the Klang Valley, Negeri Sembilan and Johor through collaboration with local health authorities and relevant local district authorities. These "Kampung Angkat" projects include the following:-

(a) Kampung Orang Asli, Serendah, located in Ulu Selangor, was among the first village to be adopted. It was "adopted" through the approval of the Orang Asli Affairs Department and the cooperation of the village administration. Demographic data for each family was established, followed by measurement and collation of health parameters into a database. This project was coordinated by the Department of Community Medicine of IMU and has the participation of the various departments of the University. A "clinic" was established and was used by both staff and students of the IMU Bukit Jalil campus. Visits included general health and oral health screening and health education. Some of the specific topics on health education among the village population include breast cancer, breast feeding, diabetes, smoking risks, alcoholism, immunisation, eye diseases, lice infestation and general hygiene. Individuals with specific health problems were referred to the local government health authorities for treatment and follow-up. Eve problems are resolved through collaboration with the Tun Hussein Onn Eye Hospital. Physical improvements on the surrounding environment are also carried out. These include relevant renovation work for the kampong "community" facilities, gotong royong activities, provision of public utilities, etc. Funds for these physical improvements are raised through sponsorship programmes by corporate bodies or community service clubs (e.g. Rotary, Lions, etc.) as well as through budget provided by IMU.





Health screening at Kampung Orang Asli, Serendah, Selangor

b) Damansara Constituency in Kuala Lumpur is an urban community with a mix of upper and lower income groups comprising the usual racial mix of the country. Projects were focused on the lower income groups. Regular activities carried out are similar to the Serendah project.





Promoting Nutritional Wellness Among the Residents of the PPR Kota Damansara (Section 8) Flats, Selangor by the staff and students IMU and Kiwanis Club, Bangsar







Oral health screening, oral health education and referral to Seremban hospital at Kampung Tekir, Labu, Negeri Sembilan





Health screening and Education Campaign at Kampung Bukit Kala, Gombak

- (c) Kampong Kala in Gombak, Selangor is yet another Orang Asli village where active health projects were held. This community is located near a small district hospital where direct access to health care facilities was within easy reach.
- (d) Kampung Tekir, Labu located in Negeri Sembilan is the project site for the IMU Clinical School. It is also an Orang Asli village. Regular visits to this village have been going on since the establishment of the clinical school. A very extensive database on health parameters has been established and intervention measures taken by the various clinical departments of the university.
- (e) For the IMU Clinical students in Batu Pahat, Johor, community work has been carried out among a number of villages around the district. Kampungs involved include Kampung Parit Wajiro, Sri Medan; Kampung Sejagong, Sri Medan and Kampung Sri Pantai Senggarang.



Oral health screening, needs assessment and oral health education as part of the Kampung Angkat Project at Kampung Sri Pantai, Senggarang and health screening at Kampung Parit Wajiro, Johor



#### 2.4. Non-governmental Organisations (NGO's) and other Activities

Through the twenty years, both IMU staff and students have been actively involved in charity organisations, health related NGO's as well as outreach projects in other countries. Many of these projects are initiated and championed by IMU student societies. Among the projects include blood and organ donation drive carried out every semester by the Buddhist Society, fund raising projects by the Muslim Society for orphanages and natural disasters abroad, fund raising by Helen Keller Society for the blind, community projects carried out in villages in Laos by the IMU Community Service Club, fund raising for MERCY during the tsunami and the earthquake disasters in Iran and Haiti.

Since 2002, the University holds regular Charity Runs & Carnivals to raise sizeable funds to be given to specific NGO's nominated by students and staff. For these major events, the University provides a working budget for their organisation together with financial support from the corporate sector. Total amount of money raised ranges between RM 40,000 to well in excess of RM100,000. In addition, specific student societies champion individual NGOs of their choice with small fund raising activities. Some of these NGOs are listed below:-



Student and staff of IMU supporting NASAM "Walk for Health" on 28 October 2012 at Taman Tasik Titiwangsa, Kuala Lumpur

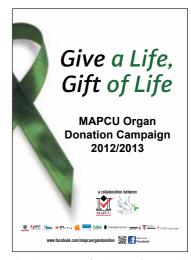


in collaboration with Jabatan Orang Asli Kuala and Klinik Kesihatan Serendah and Kampung Angkat Orang Asli, Serendah, Selangor

# Gift of Sight and Health Screening Programme Kubu Baru. Tun Hussein Onn Eve Hospital

## (a) P.S. The Children

Protect and Save The Children is actively involved in education and information dissemination on child abuse. It also provides treatment services for groups and individuals at its office premises and in shelter centers for abused children. P.S. The Children has also provided major training for professionals involved with children, with a focus on schools, non-profit and religious organisations, the community, corporations and government agencies.



MAPCU Organ Donation Campaign 2012/2013



Blood and organ donation drive campaign



IMU N&D students interacting with the stroke patients during a hands-on activity session on diet and stroke care



Ti-Ratana Centre, Desa Petaling



NASAM Centre, Petaling Jaya



NASOM Centre, Petaling Jaya



Rumah Shalom, Puchong

#### (b) Home of Peace

Home of Peace was set up to help girls from the squatters to achieve a fair share of their basic rights, emphasizing on education. The Home is also involved in community projects in the squatters including helping to place children in other homes, Identity Card application for both adults and children, sending the sick to hospitals, running a free tuition centre, providing school uniforms, shoes, bags and a monthly food distribution programme.

#### (c) YMCA Toy Library for Children with Special Needs

This programme promotes the welfare of children with special needs through toys that are safe for children with disabilities, helping them to develop self-confidence, discipline, and independence to cope in life.

#### (d) St. Jerome Home

This home in Petaling Jaya houses about 14 orphans and under-privileged children. The home is responsible for the day-to-day running of the home as well as the financing in terms of rental and monthly expenses, home maintenance, repairs and care for the children. The care for the children includes their food, clothing, school needs, etc.

#### (e) PJ Caring Home

PJ Caring Home is established for the mentally ill who are homeless or from poor income group. It adopts an open concept method i.e. allowing most patients to lead a life as ordinary as possible, encouraging interaction with society. Activities include short trips out to the shops and having a drink at the local coffee shop. There are about 20 patients at the home currently.

#### (f) Rumah Shalom

The home was founded in 1997 to help poor and destitute children. It provides them with opportunities for basic education and develop moral values in them. Apart from providing them with a home, it hopes to create self-esteem among them. To date, Rumah Shalom has 4 rented homes for girls, 1 for boys, a nursery, and a community home where tuition is taught to the children.

# (g) Pertumbuhan Anak Yatim dan Kebajikan Darul Izzah, Bangi & Temerloh Established in 1996, it is a non-profit organisation giving shelter to orphans and underprivileged children. The Home provides lodging and free education to its dependents at their in-house religious school, Asrama Darul "Izzah. It currently has about 50 boys and girls, aged 7 to 17 years old. The boys' hostel is situated in Bangi, Selangor and the girls' hostel is situated in Temerloh, Pahang. They need donations in cash, toiletries, foodstuff, stationery, etc

#### (h) Ti-Ratana

Ti-Ratana is a voluntary, not-for-profit, non-partisan and non-denominational organisation offering a wide scope of community services. The Society has, through years of hard work, expanded its services and programmes after acquiring a cluster of buildings at Salak South Bahru (Desa Petaling), Kuala Lumpur. It has a large range of dependents, from infants to very senior citizens.

#### (i) Pink Triangle Foundation

PT Foundation is a community based organisation developing and running programmes to serve people living with HIV and AIDS as well as community prone to be infected by HIV/AIDS such as drug users, sex workers, transgender and Men-who-have-Sex-with Men (MSM).

#### (j) MERCY, Malaysia

Malaysian Medical Relief Society (MERCY MALAYSIA) is a medical volunteer relief organisation that provides medical and humanitarian services at home and abroad. The IMU is linked up with Mercy Malaysia since early 2002 with the aim of encouraging IMU staff and students to be involved, directly or indirectly, with Mercy's programmes in other countries. This will give them first-hand experience in understanding disaster medicine as well as understanding life in another country and culture.

#### (k) The National Autism Society of Malaysia (NASOM)

NASOM is a non-profit, non-governmental welfare organisation which was formed as a national voluntary charitable organisation and aims at providing education, help, care and protection for people with autism and their family members. In April 2012, IMU organised community services activities at three different centres of NASOM to promote general and oral health awareness among the community with autistic problems. A seminar was held in IMU on 22 September 2012 to promote positive awareness towards autism in the society.

#### (I) Precious Childrens' Home

Precious Childrens' Home was formed in 1993 by its founders, Robert Paul and wife Evelyn Teo Paul at Petaling Jaya to help poor children, most of them with single parents. The home provides them with opportunities for basic education and helps to promote moral values in them. Currently the home houses 17 children ranging from 3-17 years old.

#### (m) Persatuan Kebajikan HOPE Worldwide KL

HOPE worldwide is an international non-profit, non-religious, organization established throughout the world. It has grown from 3 programmes in 1991 to over 150 programmes, spanning 6 continents and 100 nations with focus on 5 areas namely, Children, Education, Health, Senior Citizens and volunteerism (Global Outreach). HOPE worldwide Kuala Lumpur runs a free clinic in Jalan Sentul, Kuala Lumpur since year 2000 and have been treating more than 56,000 patients. They now have 6,000 patients in their database.

#### 2.5. Conclusion

It is clear that as a University, IMU expects its students and staff to be actively involved in activities that promote health and wellness in the community. By so doing, IMU ensures that these activities reflect a major objective of the University towards producing healthcare individuals that are ethical and caring, who works as an integral member within the healthcare team and who puts knowledge and skills learned into practice.





Autism awareness project at National Autism Society of Malaysia and seminar entitled "Autism: Insight and Interventions" organised by IMU on 21 and 22 September 2012.





Health awareness and health promotion activities among children in Precious Children's Home



## **Chapter 9: The Future**

#### Tan Sri Dato' Dr Abu Bakar Suleiman

Twenty years ago the International Medical University (IMU) came into being at a time when there was a shortage of doctors, and the government had an enabling policy of allowing the development of institutions of higher learning in the private sector. Many parents in Malaysia valued an overseas education, and have been prepared to invest substantial funds on their children's education. Many of them had the courage to put their trust in the International Medical College (IMC) that was newly formed.

As mentioned in the earlier chapters. IMC was formed by a group of exacademics from a public university in Malaysia, and had put in place a certain philosophy towards development of the college based on their experience at a public university. The early leaders got international experts in medical education to support their innovative concepts of allowing medical students from IMC to transfer to various medical schools in several countries in the British Commonwealth and The United States of America, to complete the medical course and qualify with the respective qualifications of those partner universities.

The early leaders in the IMC included highly qualified and respected academics in medical education from Scotland. They worked with local staff to create a robust platform that enabled the college to grow and prosper. During the Asian financial crisis of 1997/1998, the government recognised IMC's role, and conferred University status on IMC to become the International Medical University, so that medical students can complete the medical course locally and qualify for the MBBS degree from IMU.

The development of IMU was the result of an innovative idea that received support from various sectors at a

time when the country's shortage of doctors was pressing, and IMC, then IMU became Malaysia's first private Medical School. While the timing and circumstances were "right", IMU's success was the result of IMC and latter IMU's leaders of the time that had their priorities in the right place and gained the confidence of potential students, parents and the counterparts from the partner medical schools. In the last twenty years, the development of IMU as a premier medical school in Malaysia, that now delivers many other degree and post graduate degree programmes have been the result of good planning, sensible management and great support from the partner universities of IMU, and the shareholders of IMU.

Over the last twenty years, the growth of Malaysia's higher education in the private sector has been very rapid, and there are now many colleges and universities offering courses similar to that being delivered at IMU. This competitive environment will continue, and in considering the future, we have to live with this heightened competition.

The medical programme has been from the beginning, the core and the mainstay of IMU, and provided the platform for other courses to be created and delivered. Medicine and

healthcare are intertwined as one supports the other in so many different ways. The plans to develop a hospital and healthcare services have been in place from the beginning, awaiting the right time and circumstances to obtain support for its development. The future of IMU then depends on its further development in education, as well as its development in healthcare.

#### **Education**

Malaysians had for a long time depended on the public sector for higher education. The other option taken by many Malaysians was an overseas university education. However the local monopoly on higher education by public institutions in the country was broken when private colleges and universities were allowed to develop.

The development of private higher education in Malaysia have been phenomenal that now there are probably more students in private than public institutions of higher learning. However the future will be full of challenges for the private sector in higher education in Malaysia, as there are now so many private institutions of higher learning delivering similar courses. Certainly in Nursing, Medicine and Pharmacy, there had been reports in the media about there being too many

graduates, and that the government is reviewing the policy of compulsory service for doctors, dentists and pharmacists. The situation has now changed from an acute shortage of such healthcare professionals that compulsory service in the government had been necessary, to a situation that there will be an excess.

In future then, these categories of health professionals may no longer be assured of jobs, and will need to compete for the jobs that are available.

The implications for the future will be clear as there will be a decline in students for these courses, and only the best graduates will be selected for employment. This will also mean that only the "best" private institutions of higher learning will be chosen by the students or their parents.

# What will be the consideration of what constitute the "best"?

As a private university we need to focus on the priorities that provide the best education, the best student experience, and provide the skills, competencies, and the values that will help our graduates succeed in their careers. Hence our great focus will be on scholarship, especially on teaching and learning that is innovative, relevant and effective. Despite being a private university we have emphasised and invested in research in a significant way, as this is important for a university, it promotes our reputation and attracts academic staff interested in research and an academic career.

However the university needs to change in response to the changing environment. Examples of this can be viewed from the perspective of the students.

# Changing characteristics of students

Increasingly in future, new students who are school leavers, have been influenced by information technology, and may not remember life without computers or smartphones. They use instant messaging to contact peers and teachers. Many will be fascinated by new technologies. They may be critical of the existing political and social structure as their life experiences have given rise to different attitudes, perceptions and sensitivities.

They can have different learning styles, and their preferences may favour teamwork, experiential activities and the use of technology. They are used to multitasking, have open attitudes and have a collaborative approach. Their comfort with technology can be in contrast to their teachers who may not have achieved the same level of comfort.

The characteristics of these students need to be understood for us to be able to meet their expectations. Not only are they comfortable with technology, the internet and being connected is important for them, multitasking is a way of life and they prefer doing to passive learning, they are also impatient with little tolerance for delays, and will behave like consumers.

They will compare programmes, evaluate different institutions for the characteristics they would prefer in making their choices. Meeting their expectations then can determine the "competitiveness" of higher education institutions.

On the academic front, with so many competitors in private higher education, meeting the expectations of students and perspective employers are of paramount importance. In addition concerns about efficiency, productivity, accountability and innovations are all very important. In any private university the focus on teaching and learning would be paramount, and much of staff time will be on these activities. Time for research while important, will be secondary to teaching, learning and related activities. Attracting and retaining experienced, well qualified academic staff will be a continuing challenge, and increasing use of part time faculty will likely increase. This may be a positive thing as it allows for flexibility and diversity of expertise and experience to be made available. In addition as senior academic staff approach retirement, moving into part-time appointments allow them to continue making their experience and expertise available, while allowing the university to recruit new blood and talent.

As technology advances, and continuous computing is already with us, we can expect greater changes in the way teaching and learning is conducted. Online lectures have long been with us, and having audiences in different geographical locations learning together and reacting in real time, across different languages and cultural differences can be practical.

While most of our students presently are school leavers, in future there will be more mature students who will study part time, while still working full time. To meet this type of need, programme delivery will need to be more flexible to meet the need of these mature, working students. The potential of technology needs to be harnessed in innovative ways to enable teaching and learning to be more effective, productive, relevant and timely.

The use of simulations and virtual environments will be more intensive and widespread as we aspire to get

the students to be better prepared, and practically "work-ready". This makes preparation of the learning more demanding, and the focus on outcomes and competencies are important to achieve the objectives of "work readiness". All this will also imply the need for proper education of all academic staff for the scholarly activities that would be characteristic of IMU. While a strong start has already been made in this direction at IMU, the continuing education of IMU academic staff in these areas must be made a personal responsibility, for IMU to effect change and continue to be innovative. Hence our approach towards creating personal development plans for all staff, and the creation of a "learning" organisation at IMU are important tactical moves towards future success.

Higher education as a business has grown rapidly in Malaysia, especially in the last twenty years. As this sector has become saturated, it is now maturing. There have been comments in the media of too many institutions of higher learning in existence in Malaysia, with the occurrence of unemployed nurses, and the prospects of producing too many doctors and pharmacists in future. As the government positions get filled, competition for employment elsewhere will get intense. An indication of this despite what may still be considered "early" days is that, in one of the local pharmaceutical companies, pharmacists and doctors have now been recruited into the sales force, which generally have been filled by form five graduates. Hence as the higher education sector consolidates, institutions in this sector not only have to cope with different characteristics of students who are increasingly consumer oriented, they have to produce excellent graduates who are "work-ready" and meet the needs of prospective employers.

Some developments in higher education in other countries may be relevant to us.

The University of Phoenix is the largest private college in America with fifty thousand students. They offer degrees up to doctorate levels and have traditional academic faculty, who are all part-timers. Students attend classes at convenient hours, and there is an emphasis on assessment of student learning and faculty teaching, with a focus on teaching productivity. "Frills" such as electives, sports and leisure activities have been excluded from their programmes. Going forward extended learning through off campus education will become increasingly more important, as it will be more convenient and relevant to students, both school leavers and students who are at work. What is important is the realisation that higher education is in the education business, and not in the campus (or real property) business.

#### **Corporate Universities**

Corporate colleges is another growth area in higher education. Annick Renaud-Coulon, chair of the Global Council of Corporate Universities says there are 4000 such institutions now with 4 million students. This is not new as McDonalds have had Hamburger University in Oak Brook, Illinois since 1961. However examples of such corporate universities include Corporate Hydro-Power University in Moscow teaching turbine technology and energy efficiency, Petrobras University teaching the skills of pumping oil 7000 metres below the Atlantic where nobody had ever been before, and Infosys with a high tech Disney-World lake campus in Delhi, teaching advanced computer science. There are corporate universities in Asia, Latin America, Central Europe and Africa.

Big business had always had the pick of the best from world class universities. However nowadays, with cut-throat competition, rapidly developing technologies, and new management methods, businesses have developed learning needs, with skills that cannot be bought or outsourced. New graduates now cannot cope with the advanced skills required with the nature of demands to meet the challenges of drilling for oil where nobody has been before, or assembling modern aircraft or producing biofuels, for example.

In developing countries, the challenge is even more daunting as reflected in a recent study by McKinsev & Co. auoted by Newsweek, that found only 25 percent of new engineers, 15 percent of new finance and accounting graduates and 10 percent of overall college graduates were adequately prepared to work in multinational companies. Hence the development of corporate colleges by companies like Infosys, Petrobras, Vale, which of course is also a sign of progress. Their innovations and pioneering technologies have been at a level no universities can teach. This development, based on the need of the companies, may not be fully understood by mainstream academics. Traditional academics cannot accept the concept of "corporate" and "universities" being together. Renaud-Coulon mentioned that academics in Australia complained so much that corporate universities there had to rebrand themselves as "leadership centres".

An interesting development in Britain, amidst debate about private sector involvement in higher education, has been the development of Pearson College, based at the headquarters of Pearson, at the Strand, London. Pearson owns Penguin books, the Financial Times, and 50 percent of The Economist. The students will study for a degree in Business and Enterprise, and intern

with the College's corporate partners. A distinctive feature of Pearson College is the direct involvement of business and industry in designing courses.

The rise of corporate colleges and universities has been the result of the need for excellent graduates with the ability to communicate, collaborate, solve problems, work in teams and have excellent professional and technical skills. This type of graduates is relevant for Pearson College, Petrobras University or Infosys University.

It is also relevant for IMU and other medical universities. This is a challenge for all universities.

This ability to meet the changing demands of the future healthcare industry will be critically important to the future success of IMU.

# IMU Hospital and healthcare services

Medicine and the health professions share the need with other sectors for graduates with particular skills and competencies like communication, teamwork, leadership, problem solving and other aspects of professionalism. The role of hospitals and healthcare facilities are crucially important in the education of doctors and health professionals in providing the proper context, "real life" situation of work and the resources for teaching, learning and for research. The government facilities presently being used are invaluable for this purpose. In addition to this, IMU needs to develop its own hospital and healthcare facilities to complement the use of government facilities. This will be important for the future development of IMU as a university focused on medicine and health. It will not only differentiate IMU as an institution of higher learning of significance, but institutionally, IMU

can be developed as a major resource in medicine and health, nationally and regionally.

The hospital and healthcare system to be developed will be along the lines of an "Academic Health Centre" (AHC), where a network of healthcare facilities functions as a network for healthcare services, teaching and for research. It would also function to improve the health status of the community. In this concept of the AHC, performance of clinical and academic excellence would be expected, and there would be in place the integration of services, supported by a robust system of transparent governance. Clinical and academic performance will be consistently and reliably measured. Clear targets, standards and documentation of quality will be the norm. Leadership development will be in place for the staff, as no matter the level of performance achieved, striving to be better, will be what is expected. Developing this culture of excellence, will require the organisation to be values driven, and effective leadership will be crucial to the success of the AHC. Hence a significant number of people across different levels in the organisation must be engaged in the leadership process, to be able to face the complex challenges of achieving success.

Investment in leadership issues, including the vision, mission, strategy and values can result in organisational cohesiveness and determination, with an environment that promotes strong mentorship and strong role models.

The IMU hospital and healthcare system will include "Centres of Excellence" in specified services and achieve international standards so that we can develop partnerships in healthcare services, just as we have developed partnerships in education.

There are a number of principles based upon which healthcare service will be developed.

- Services will be based on the need of individuals, and the choices that they make. Individuals need to be well informed before making their choices
- Prevention is paramount. Health promotion, disease prevention, early detection must be emphasised. Identification of health risk factors, and their management will be important. We need to work closely with those with long term conditions and actively involve them in their own care, to enable them to attain a good quality of life
- Integrated care and partnerships will be the feature so that the network within the IMU healthcare system can contribute towards the achievement of continuous, coordinated care for the patient. Multidisciplinary teams with excellent communication within our network will be a feature of the system
- We must also focus on issues of equity, access and diversity. We can help improve access by improving services to the community that we serve, and provide health promotion, disease prevention and outreach services to deprived pockets of the population. We must also advocate for patients to be given adequate information to help them make their choices. We also need to be innovative in applying technology to expand our reach, and make services more effective and efficient

The concept of the "Academic Health Centre" (AHC) with a network of healthcare facilities providing integrated and comprehensive services will take time to develop, but will be the ideal for excellent healthcare service and for teaching and research. Increasingly the larger hospitals tend to deal with

more complex cases, suitable for postgraduate training, but much less so for undergraduate education. However the rest of the healthcare network within the AHC will be suitable for undergraduate education, where the experience for students will be more meaningful, and more realistic in terms of the settings of their future practice. Indeed in developed countries the undergraduate education for medicine has increasingly turned to clinics, ambulatory centres and community centres for clinical training as the experience here are more relevant for the undergraduates than spending too much time in major hospitals. The development of the AHC will widen the platform and scope for research. However the approach of identifying thrust areas to focus our research investment will continue. It will be anticipated that clinical research and research on health services, including economic studies can achieve prominence in our research programme in future.

In developing the AHC, all the facilities within that system will be designed, for excellence and provide services that creates value for patients. Recently the concept of value in healthcare has been emphasised by Porter from Harvard Business School, in terms of outcomes achieved in relation to cost of healthcare.

Successful new delivery models of healthcare are notoriously difficult to transfer and Bohmer from Harvard Business School, has suggested that the "habits" of high value healthcare organisations - repeated behaviors and activities and the ways of thinking that they reflect and engender - are shared. Horbar and co-workers have shown that such habits can be transferred. Bohmer suggests high value organisations are distinctive in engaging in the four habits he had described, systemically and truly

internalised into the culture and routine of the organisation.

Additionally the habits are integrated into the system for clinical management, focused more in clinical processes and outcomes, than on resources. While various approaches to managing clinical care for excellence will continue to evolve. Porter's emphasis on value, and Bohmer's observations on the four habits of high value healthcare organisations are worthy of our attention in planning our hospital and healthcare services. This shall require careful and detailed planning, not only of the physical facilities, but also the various processes, where advanced planning is a feature, and standards based on evidence will be the norm. This will apply to core clinical decisions as well as operational decisions. In essence, the AHC and the facilities will be built for the future where value based decision making will be common place, and a robust system of measurement will be consistently applied.

# Learning......can assessment drive learning?

Much has already been referred to regarding the future which is difficult to predict. In the past century, in the advanced countries, research had advanced at the expense of undergraduate teaching. With this realisation although research will continue to thrive, the emphasis on excellence in teaching and learning will surely grow. This should be particularly so in private universities which depend on tuition fees to survive. In our case we must excel with superb teaching and learning as a major feature of IMU's being.

The learning approaches, the learning modules developed must meet both the needs of the learners as well as the faculty's sense of excellence. What

is important will be for the various learning modules to be combined in the learning plan for individual students to meet the standards of competency that has been identified. A major change that needs to occur is in the way learning occurs. Presently learning is academic, driven by scientific research, profession based and quality decided by peers. However the new learning occurs with knowledge produced in the context of application, transdisciplinary and institutionally diverse. In the context of becoming a learning organisation, perpetual learning needs to be a feature, as a core activity and will be the way we are able to create and process information to obtain new knowledge.

Increasingly in the future, time will be a major constraint, and the changing demands of the workplace will put enormous pressures on universities in getting their graduates to be work ready. In moving to a competency-based model of education, learners will view universities as a knowledge base where various competencies can be achieved. In this situation different assessments will help the learner identify the knowledge base or skills that need to be strengthened or to be completely relearnt. Various assessments tools need to be available to facilitate this process.

In this process, the individual and the institution may decide on the learner's level of understanding and ability, and then determine what else needs to be learned, how that can be done, what and when different competencies can be measured and agree on the outcomes to be achieved. This focus on learning will improve effectiveness, and can to some extent tailor the learning to individual needs. Assessment then becomes very important in driving the learning.

#### **Conclusion**

What has already been mentioned is not new. Similarly the emphasis on the need for change is also not new. To succeed IMU must continue to identify specialised niches, and areas of distinction. We also need to be much more learner centred, decentralised and flexible. Technology will be a core feature of the dynamic change that will occur, and shape with faculty help, the nature of programmes delivered. In our environment where communication. analytical skills, creativity and problem solving are highly valued, our ability to promote self directed learning will be important, as the workplace will make increasing intellectual demands for life-long learning, making relevant the continuing and future role of the university.

#### References

- Diana Oblinger :Boomers. Gen-Xers. Millennials. Understanding the new students EDUCAUSE Review July/August 2003. http://net.educause.edu/ir/ library/pdf/erm0342.pdf
- 2. Arthur Levine: How the Academic Professional is changing. Daedalus Vol 26,4.Fall.1997
- 3. Mac Margolis : Corporate Learning. Newsweek, Sept 20, 2010. Pages 40-8
- 4. Guttenplan D.D: A school where courses are designed by businesses. International Herald Tribune, Dec 3, 2012, p 8.
- 5. Peter Noble, Fiona O'Neill, Andrew Kirk, Edward Hillhouse. Academic Health centres: Managing the transition from good to great. Clinical Medicine 2010: 10: 1: 16-9.

- 6. Porter MF, Teisberg EO. Redefining Healthcare. Creating value-based competition on results. Harvard Business School Press, 2007.
- 7. Bohmer RMJ, The Four Habits of High-Value Health Care organisations. N Engl J Med 2011: 365: 22: 2045-7.
- 8. Horbar JD, Plsek PE, Leahy K. NIC/Q 2000: establishing habits for improvement in neonatal intensive care units. Pediatrics 2003: 111 (4 Pt 2): e 397- e 410

# **PART THREE**KEY PERSONNEL AND SENIOR STAFF OF IMU

### **KEY PERSONNEL**



Chancellor

YBhg Dato' Seri Dr T. Devaraj DGPN DSPN DJN KMN BCK PKT MBBS (S'pore) FRCP (Edin) Dip Pall Med (Cardiff) FAM (Mal)



YBhg Dato' Dr Amir Abbas

(DPMP) Dr Med Sc (Hon) (UKM) FRCP DTM&H (L'pool) FAMM MBBS (UM-S'pore)

#### **Board of Governors**



Front (seated Left to Right): YBhg Tan Sri Dato' Dr. Yahya Awang; Dr Mei-Ling Young Back (standing Left to Right): YBhg Dato' Dr Amir Abbas; Tan Sri Dato' Dr Abu Bakar Suleiman; YBhg Prof Dato' Dr Gan Ee Kiang; YBhg Prof Emeritus Tan Sri Datuk Dr Anuwar Ali



#### **IMU Senate Members 2012**



#### **IMU PEAC Members 2012**



# **Senior Staff of IMU**

As of 31 December 2012, these are the senior staff of IMU who had carried on the tradition of delivering Healthcare Education Excellence and creating healthcare graduates that are committed to lifelong learning imbued with a sense of good citizenship, leadership and ethical behaviour.

#### CORPORATE MANAGEMENT



President

#### TAN SRI DATO' DR ABU BAKAR SULEIMAN

MB BS Hon MD (Monash) Hon DMed Sc (UKM) Hon DSc (UPM) Hon PhD (UMS) Hon MD (Qld) FRACP FAMM FAMS FRCP FRCPE FRCP FRCPI Hon FACP Hon FRCSI Hon FRCSE FAFPM FASc AMP (Harvard) Dr Abu Bakar Suleiman attended Malay College, Kuala Kangsar, St John's Institution, Kuala Lumpur and Geelong Grammar School in Victoria, Australia and obtained his MBBS from Monash University, Australia. He obtained the Masters of Medicine (Internal Medicine) from the University of Singapore. He became Fellow of the Royal Australasian College of Physicians and did his postgraduate training in Nephrology at Georgetown, University Hospital, Washington DC (USA) and Prince Henry's Hospital in Melbourne (1975 – 1976). He attended the Advanced Management Programme at Harvard Business School in 1991. He started the Department of Nephrology and developed the Nephrology and Dialysis services at Hospital Kuala Lumpur and extended this to other hospitals in the country. He became Director General of Health Malaysia from 1991 to 2001, and was appointed President of International Medical University in 2001. He was President, Malaysia Medical Association (1985); Master, Academy of Medicine Malaysia (1990-1998); Founding President, Malaysian Society of Nephrology (1984-1985); Founding President, Malaysian Society of Transplantation (1996-2002); President, Association of Private Hospitals, Malaysia (2002-2008); and President, Malaysian Health Informatics Association (MHIA). He is currently President, Board of Governors, National Kidney Foundation (NKF); President, National Diabetes Institute (NADI); Director/Chairman, Medical Defence Malaysia Berhad; Director, IMU Foundation; Chairman, IHH Healthcare Berhad; Chairman, Board of Directors – CCM, Duopharma, Biotech Berhad (CCMD).



Provost

MEI LING YOUNG

BA MA PhD

Dr Mei Ling Young is currently the Provost, International Medical University in Kuala Lumpur. She completed her undergraduate and postgraduate studies in the University of Auckland, (BA, MA [Hons in Geography]) and the Australian National University (PhD in Demography) respectively. Her field of study in demography is internal migration, structural change and the labour force. Dr Young joined Universiti Sains Malaysia in 1979 as lecturer in Development Studies, School of Social Sciences and left in 1985 to set up Sesama Consulting Group Sdn. Bhd. She was also an Associate Research Fellow with the Malaysia Institute of Economic Research where she wrote on regional development, manpower planning and private education. In 1991, she established the IMC with Datuk Dr Kamal Salih and the late Dr Saidi Hashim. She is responsible for developing the credit transfer partnerships with the Partner Medical Schools from Australasia, North America, United Kingdom and Ireland. The consortium has grown from five to 37 partner schools including a twinned degree in pharmacy with the University of Strathclyde. Dr Young played a major role in the growth and development of the IMU since its inception in 1992. Her interest in medical education research is on longitudinal studies on IMU graduates. Dr Young is the Provost of the International Medical University, Executive Director of IMU Education Sdn. Bhd., Company Director of IMU Health and IMU Healthcare and Deputy President, Malaysian Association of Private Colleges & Universities (MAPCU).

Peter C K Pook is currently Vice-President & Executive Dean and Professor of Pharmacology at the Faculty of Medicine and Health, International Medical University (IMU) in Malaysia. He joined the IMU as Head of Pharmacy in January 2001 and was later appointed as Director of Pharmacy (2001-03) and as Acting Executive Dean (2001-03) of the Faculty of Medicine. In January 2004, he was appointed as Dean, School of Pharmacy and later as Dean, School of Pharmacy & Health Sciences (March 2005 until today). Prior to joining IMU, he held positions as Senior Lecturer (1994-95) and as Reader in Neuropharmacology (1995-98) in the School of Health Sciences, University of Sunderland, UK. He returned to Malaysia to take up the appointment as Professor of Pharmacology (1998-2000) in the Faculty of Medicine & Health Sciences, Universiti Putra Malaysia. He was appointed Head of Pharmacology Unit (1999- 2000) and Deputy Dean (Medical Sciences & Research, January 2000-December 2000). He obtained his PhD (1988) for his research on "Ligand binding and electrophysiological studies of Excitatory Amino Acid (EAA) receptors in the rat central nervous system", from the University of Bristol, UK. This project was funded by the Medical Research Council (MRC) under the guidance of Professor J C Watkins FRS. After obtaining his PhD, he continued his work as a MRC – funded scientist with the EAA Research Group under the leadership of Professor Watkins in the Department of Pharmacology, University of Bristol (1988-93, as Research Associate; February 1993 - December 1993 as Research Fellow). In 1992, Peter as the only biologist in the EAA Research Group, together with Professor Watkins and his colleagues who are mainly medicinal chemists, developed a new range of phenylglycine (PG) analogues of glutamate which could be used as pharmacological tools to study the EAA receptors. These novel glutamate analogues led Peter and his colleagues to first describe a new range of glutamate receptors – the "metabotropic glutamate receptors". These PG analogues of glutamate have paved the way for the development of other analogues which has led to the better understanding of the role of EAA receptors in a number of normal and abnormal brain functions including learning and memory, epilepsy and cerebral ischaemia. As a result of this work, he was given an award by the University of Bristol for "outstanding and significant contribution to research". Peter also has a strong interest in education and has a particular interest in designing outcomes based curriculum. To date, he has led several teams to successfully design over 10 undergraduate and postgraduate programmes for IMU. He has represented IMU as an auditor for the Malaysian Qualification Agency (MQA) and currently he has been appointed by MQA as Chair of the D-SETARA 11 (Health Sciences).



Vice-President and Executive Dean PETER C K POOK BSc (Hons) PhD



Vice-President, Research

MAK JOON WAH

MB BS MD DAP&E MPH FRCPath

FAMM FASc

JW Mak is currently the Dean, Postgraduate Studies & Research and concurrently the Vice-President for Research, and Professor of Pathology at the Faculty of Medicine and Health, International Medical University (IMU) in Kuala Lumpur. His previous appointments were at the Institute for Medical Research (IMR). Malaysia where he served in various capacities, culminating in his appointment as Director of the Institute in 1996. He served as a consultant in filariasis and malaria to the World Health Organisation on numerous occasions and was the Director of the WHO Collaborating Centre for Lymphatic Filariasis based at the IMR. He was also the Dean of the SEAMEO-TROPMED Post-graduate School for Applied Parasitology and Entomology from 1991-1996. On his retirement from IMR he was appointed Professor in the Department of Pathology, Faculty of Medicine and Health Sciences at Universiti Putra Malaysia, where he served for three years before joining IMU in 2001. He obtained his MBBS from the University of Singapore in 1967, Masters of Public Health (MPH) from the University of Malaya in 1976, and Doctor of Medicine (MD) from University of Singapore in 1980. He obtained his Membership and the Fellowship of the Royal College of Pathologists in 1983 and 1995 respectively. He was the President of Malaysian Society of Parasitology and Tropical Medicine in 1982 and the Founding Editor of its Journal, Tropical Biomedicine in 1985 and continued as its Editor until 1987. His fields of interest include tropical and parasitic diseases and he has published over 350 scientific papers. He was awarded the National Science Award in 1985 and the Merdeka Award for Outstanding Scholastic Achievement in 2011. He is married to Dr Choong MF, PhD and has two sons and a daughter. His leisure activities include gardening and reading.



Vice-President, Education

VICTOR K E LIM

MB BS MSc FRC Path FAMM FASc

Victor K E Lim is currently the Vice-President for Education and Professor of Pathology at the Faculty of Medicine and Health, International Medical University in Kuala Lumpur. Prior to this appointment he was the executive Dean of the Faculty of Medicine and Health from 2004 – 2011. Before joining the International Medical University he was the Director of the Infectious Diseases Research Centre at the Institute for Medical Research in Kuala Lumpur by virtue of a secondment from Universiti Kebangsaan Malaysia where he was the Professor of Microbiology and Deputy Dean (Academic Affairs) at the Faculty of Medicine, Universiti Kebangsaan Malaysia. He obtained his MBBS from the University of Malaya in 1974, MSc in Medical Microbiology from the University of London in 1978, and passed the Royal College of Pathologists examinations (MRCPath) in 1981. He was the President of the Western Pacific Society of Chemotherapy from 2004 - 2008, the Master of the Academy of Medicine of Malaysia from 2008 – 2011 and the President of the Malaysian Society for Infectious Diseases and Chemotherapy from 1999 – 2003. He is a Fellow of the Royal College of Pathologists, a Fellow of the Academy of Medicine of Malaysia, a Fellow of the Academy of Medicine of Singapore and a Fellow of the Academy of Sciences of Malaysia. He also held the position of Editor-in-Chief of the Malaysian Medical Journal from 1991 – 1998. He is a member of various governmental technical committees including the National Antibiotic and Infection Control Committee and the National Medical Testing Accreditation Committee. His fields of interest include antimicrobial chemotherapy and infectious diseases and has published and presented over 350 scientific papers. He is married to Dr Asma Omar, a Professor of Paediatrics at the University of Malaya. His leisure activities include doing mind games, jogging and looking for and partaking of good food.

Christy Chiu is currently the Chief Financial Officer since 2004 and Company Secretary of the IMU Education Sdn Bhd since 2008. She graduated from Monash University, Australia with B.Econs (Accounting) in 1984. She was admitted as a Fellow to CPA Australia in 2006 and has been a member of the Malaysian Institute of Accountants since 2007. Upon graduation, Christy returned to Malaysia in 1985 and worked as an audit assistant with KMG Hew and Tan, Kuala Lumpur for two years. For the next six years, she worked with Beca Carter Holdings and Ferner Ltd, Auckland, the largest consulting engineering firm in New Zealand. During this period, she was promoted from an Accountant to Group Accountant and finally to the Head of Department, overseeing the various finance functions of the Group. In 1992, Christy returned to Malaysia and was employed as the Regional Accountant for Southeast Asia by Jurutera Perunding Beca Carter Sdn Bhd (JPBC), Kuala Lumpur, travelling to various offices in the region. She joined International Medical College (IMC) in 1993. She set up the finance department and was responsible for the financial management of IMC until 1996. For the next three years, Christy was Financial Controller for Batu Tiga Quarry Sdn Bhd, a subsidiary of YTL Cement Bhd, Kuala Lumpur. In 1999, Christy resumed the position as Financial Controller of the Sesama Medical College Management Sdn Bhd (SMCM) including supervision of the Administration and Building Maintenance & Engineering Services. In 2010, she was appointed project leader for the IMU's Strategic Plan, ASPIRE where she worked closely with the senior management team, key staff and PwC to craft the Strategic Direction of IMU. She is responsible for the oversight on the implementation of the ASPIRE project. Christy is married with three children and she spends much of her Sundays teaching primary school children in the Sunday School at her church. She supports her husband in community work for the Residents' Association and the Parent Teacher Associations of their children's schools.



**Chief Financial Officer CHRISTY CHIU LAI HENG**BEcons FCPA CA(M)

Dato' Teddric Jon Mohr is CEO/Director, Healthcare, in IMU. Dato' Mohr is from the United States of America but has been in Malaysia for more than 13 years and is a Permanent Resident here. His presence is to lead IMU's Healthcare business and further deliver our ASPIRE's goals on developing a values-based Academic Health Centre for the IMU. Dato' Mohr has more than 40 years of professional healthcare management experience in the United States and Malaysia. He holds a Masters of Hospital Administration from University of Minnesota, USA, a Bachelor of Science in Accounting from the Southern Adventist University, Tennessee, USA and a Diploma in Electronics from United Electronics Institute, Kentucky, USA. Dato' Mohr is also a Fellow of the American College of Healthcare Executives. Prior to joining us, Dato' Mohr was the CEO of the Penang Adventist Hospital for 13 years. His own consultancy, Mohr & Associates Healthcare Consultants, Kalamazoo, Michigan, USA, was used to recover and reorganise bankrupt hospitals. Some of the senior management positions that Dato' Mohr had served were as President/CEO of Battle Creek Adventist Hospital, Battle Creek Michigan, USA and Executive Director/CEO of Allen County Hospital, Iola, Kansas, USA. Dato' Mohr was also active in the Rotary Club, Red Cross Society, and United Way in the United States. Apart from the American College of Healthcare Executives, he has been Board Member and Past Vice Chair of the Association of Private Hospitals Malaysia, preceptor of University of



CEO/Director, Healthcare
TEDDRIC JON MOHR
BSc MHA FACHE

Minnesota (MHA-ISP Program), Former Advanced Member of Healthcare Financial Management Association, Council member of Michigan Hospital Association, Board of Directors of Blue Cross Insurance of Kansas, and among several others, Past PR Committee member of the Malaysian Society in Quality Healthcare (MSQH). Dato' Mohr is responsible for the overall management and development of the university's healthcare which includes our potential IMU hospital and healthcare clinics (Medical, Chiropractic, Chinese Medicine and Dental).



**Director of External Affairs ONG KOK HAI**BSc (Hons) MPhil PhD

Ong Kok Hai has been intimately involved with the International Medical University even before its inception. He was a member of the core team that came together in 1991 to discuss, plan and execute the formation of a private medical college which became the basis for the establishment of the International Medical College (IMC) that was launched in 1992. Before joining IMC in 1993, he was the Foundation Head of the Department of Medical Microbiology and Parasitology at the School of Medical Science, University Sains Malaysia (USM) from 1979 to 1993. In fact, he was one of four academic staff who was seconded from the Faculty of Medicine, University Kebangsaan Malaysia (UKM) to start the medical school in USM. It was at USM medical school, that the problem-based learning approach in medical education was first introduced in 1979 to this part of the world. At USM, he was the academic coordinator for the planning and execution of the physical development of the medical school complex, including the university teaching hospital. Prior to this. he was the Medical Microbiologist in charge of the Kuala Lumpur Hospital Pathology Department in 1970-1973. It was during this period that the laboratory services for the hospital was initiated and established. In 1973, he left to pursue his MPhil and PhD at the University of Manchester, UK under a British Commonwealth Fellowship. He returned in 1976 to serve as lecturer at the UKM medical faculty. At UKM, he initiated and established the Diploma in Medical Laboratory Technology course in 1977 before he was seconded to USM. In research, his field of interest is in infectious diseases, particularly in rapid diagnosis. At USM, he started his major research in typhoid fever. The research team was able to discover a novel method for the specific diagnosis of typhoid fever in 1994. This was later patented and commercialized as EIA dot blot test, "Typhidot", and marketed in many countries where typhoid fever is endemic. He is also actively involved in commercialization of research findings. Professor Ong was born and schooled in Penang. In 1965, he was awarded a Colombo Plan scholarship to pursue his BSc (Hons) degree in Microbiology at the University of Guelph, Ontario, Canada. Currently, he is the Director of External Affairs in IMU. His other appointments in IMU, was as the Foundation Deputy Dean from 1993-1999 and Dean of Student Affairs from 1999 to 2005.

#### **DEANS**

Prof Dato' Dr Mrs S T Kew is currently the Dean of the School of Medicine and Professor in Internal Medicine, International Medical University. Prior to this appointment, she was the Dean of the Clinical School from 2009 – 2011, and Head of Department of Internal Medicine from 2007 – 2009. Before joining the International Medical University. Dr. Kew served as Consultant Physician and Gastroenterologist in Hospital Kuala Lumpur, a Ministry of Health hospital. She rose to the post of Head of Internal Medicine in the Ministry from 1999 – 2002. While in the Ministry, she helped to formalise higher specialist training in Gastroenterology and Internal Medicine in the country. Dr. Kew is the Past Master of the Academy of Medicine Malaysia, Past President of the College of Physicians, as well as Past President of the Malaysian Society of Gastroenterology and Hepatology. Currently she is the International Advisor of the Royal College of Physicians of London. She sits in the Conjoint Coordinating Committee for MRCP (UK) and MRCPCH Examination Malaysia. She is also a member of the Preliminary Inquiry Committee of the Malaysian Medical Council. Dr. Kew is active in both undergraduate and postgraduate medical education. She regularly examines in undergraduate examinations in public and private medical schools, as well as in the Master in Internal Medicine Examination of public universities. She is an examiner in the Membership of the Royal College of Physicians PACES examination, and hosts the PACES examination in IMU / Hospital Tuanku Ja'afar Seremban annually since 2009. Dr. Kew's research and academic interests include chronic hepatitis B and C, nonalcoholic steatohepatitis (NASH), irritable bowel syndrome and probiotics, NSAIDs and the gastrointestinal tract, adverse drug reactions, patients' safety, clinical practice guidelines, issues of medical professionalism and ethics, and clinical assessment especially Mini-CEX (clinical evaluation exercise).



School of Medicine
KEW SIANG TONG
MBBS (Sing) MRCP(UK) FRCP
(Lond Edin Glasg) FAMM FAMS
FRCPI FACP(Hon) FRACP(Hon)

Dr Srikumar Chakravarthi is an Associate Professor in Pathology and Acting Dean of Medical Sciences of the International Medical University. He has been in IMU for the past 8 years, and has been in academics and research for the past 17 years. He has been actively involved in clinical pathology work and laboratory work since 1995. In the field of research, he has numerous papers in indexed international peer reviewed journals, and has presented papers in numerous scientific conferences. His areas of research interest include cancer pathology, immunohistochemistry, natural products and drug toxicity studies.



Medical Sciences (Acting Dean)
SRIKUMAR CHAKRAVARTHI
MBBS MD (Pathology)
eMBA Dip Hosp Mgmt



Clinical School

ZAINUR RASHID ZAINUDDIN

MB BCh BAO LRCP & S DRCOG

MRCOG AM

Zainur Rashid Zainuddin is currently the Dean, IMU Clinical School and Associate Professor in the Department of Obstetrics & Gynaecology, International Medical University in Seremban, Negeri Sembilan. Prior to this appointment he was Head, Department of Obstetrics & Gynaecology, IMU from 2004-2009 and Associate Dean, IMU Clinical School from 2009-2011. Before joining the IMU he was a lecturer in the Department of Obstetrics & Gynaecology, Hospital UKM, Cheras Kuala Lumpur and a Registrar in Obstetrics & Gynaecology in Scarborough General Hospital, UK. He obtained his MBBCh from the Royal College of Surgeons in Ireland, Dublin in 1992, and passed the Royal College of Obstetricians and Gynaecologists (DRCOG) in 1999 and MRCOG in 2000. He is a member of various professional bodies such as Obstetrical & Gynaecological Society of Malaysia (OGSM), Malaysian Maternal and Neonatal Health Association (MAMANEH) and Islamic Medical Association of Malaysia (IMAM. He is a reviewer for Medical Journal of Malaysia, Malaysia Family Physician Journal and International e-Journal of Science, Medicine and Education (IeJSME). He is also an activist for NGOs such as Aman Palestine. I-Medik and MERCY Malaysia. He was appointed as Consultant, Aman Palestine Malaysia from 2006-2012. His fields of interest include humanitarian and volunteerism. He was one of the Malaysian representative for humanitarian and medical relief missions abroad including Acheh (Indonesia), Afghanistan, Lebanon and Gaza (Palestine).



School of Dentistry

TOH CHOOI GAIT

BDS Hons MSc FDSRCPS DRDRCS

FDSRCS

Professor Toh Chooi Gait is the founding Dean of Dentistry and Professor of Restorative Dentistry at the International Medical University in Kuala Lumpur. Prior to joining the International Medical University she was a professor in the Faculty of Dentistry, University of Malaya and had served in various capacities including Deputy Dean and Head of Department of Conservative Dentistry. She graduated with honours from the University of Singapore in 1974 and received the Commonwealth Medical Fellowship to pursue her postgraduate training at the Eastman Dental Institute of London from the period of 1977-1980 during which she acquired academic and professional qualifications including Master of Science in Conservative Dentistry (1978) from the University of London and Diploma in Restorative Dentistry (1980) from the Royal College of Surgeons of Edinburgh besides Fellow of Dental Surgery from the Royal College of Physicians and Surgeons of Glasgow (1980). She was conferred honorary fellowships by the Academy of Dentistry International (1987), International College of Dentists (1993) and Royal College of Surgeons of Edinburgh (1996). She received a number of research awards including a gold award with felicitations from the jurors for her research work on immediate loading in the posterior mandible with fixed prostheses at the 32nd Geneva International Exhibition of Inventions, Innovations and New Techniques, and Excellent Scientist Award from the Ministry of Higher Education (2004). She was the President of the South East Asian Association for Dental Education (2000-2002), President of the International Association for Dental Research (IADR) South East Asian Division (1977 – 1999). Founding President of Malaysian Section of IADR (SEA Division) (2000-2002), Founding Council Member of the Malaysian Academy of Aesthetic Dentistry (2004-2008) and member of Board of Directors, International Federation of Dental Educators and Associations (2007 – 2009). She is a member of the editorial boards of Operative Dentistry, the European Journal for Dental Education and

had served as a reviewer for other local and regional journals including Malaysian Dental Journal and Asian Journal of Aesthetic Dentistry. She is a member of various governmental technical committees including the National Committee for Oral Health Manpower Development, Task Force 2 on Dental Education, Qualifications Evaluation Committee and Specialist Sub-Committee on Restorative Dentistry. She has contributed articles to various peer-reviewed journals as author or co-author and has been invited to speak at numerous scientific and professional meetings locally and internationally. For leisure, she loves to spend time with family, shopping and playing mind games.

Michael J Rathbone is currently Professor of Pharmaceutical Technology and Dean of School of Pharmacy, International Medical University, Kuala Lumpur, Previously he was Associate Professor of Pharmaceutics. School of Pharmacy, Griffith University. Australia where he served as Acting Head of School. Prior to this he was the Director of Research at InterAg, New Zealand, where he spearheaded InterAg's modified release drug delivery research and directed their national and global collaborative research activities. Dr Rathbone obtained his undergraduate degree in Pharmacy at Leicester Polytechnic, UK (1980), and PhD in Pharmaceutics from the University of Aston, Birmingham, UK (1986). Over his career Dr Rathbone has invented many novel drug delivery systems, several of which have been commercialised. His knowledge of the entire spectrum of innovation, product research & development. cGMP analysis, manufacturing scale-up, QC analysis, stability testing and registration provides him with an extensive overview, and unparalleled experience, of the veterinary pharmaceutical industry. Dr Rathbone's research interests are in the area of systemic drug delivery via mucosal sites, the development of modified release drug delivery systems and controlled release veterinary drug delivery. Dr Rathbone has published over 150 scientific and professional papers, review articles, book chapters and scientific abstracts and is the co-inventor of numerous patents. He has co-edited eight Special Theme Issues of the journal Advanced Drug Delivery Reviews and six books on modified release drug delivery. Dr Rathbone is an Editor of the European Journal of Pharmaceutics and Biopharmaceutics and serves on the Editorial Board of several prestigious journals including Journal of Controlled Release, Journal of Pharmacy and BioAllied Sciences and Drug Delivery and Translational Research. Dr Rathbone serves on the Board of Directors of the Controlled Release Society. He received the Controlled Release Society Distinguished Service Award in 2007 and was inducted as a Fellow of the Controlled Release Society in 2009.



**School of Pharmacy MICHAEL J RATHBONE**BSc (Hons) PhD MRPharmSGB
FCRS



School of Health Sciences

KHOR GEOK LIN

BSc Hons MSc PhD

Professor Khor Geok Lin joined the Department of Nutrition & Dietetics, IMU in July 2010 and she is currently the Dean of School of Health Sciences. Prior to that, she was a Professor of Community Nutrition in the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia. Professor Khor obtained her BSc Agric (Hons) from McGill University, Canada under the auspices of the Colombo Plan scholarship, while her MSc from Guelph University, Canada was supported by the Canadian International Development Agency. The pursuit of her doctorate in the University of Malaya on the nutritional ecology of the indigenous community ("Orang Asli") gave her an indelible empathy for marginalized communities. A year as a Takemi Fellow at the Harvard School of Public Health on a Fulbright Scholarship further broadened her insights into global health issues. Professor Khor has also been bestowed the Asia Pacific Clinical Nutrition Society Award in 2004, the Association of Southeast Asian Institutions for Higher Learning Fellowship in 2001 and the Association of Commonwealth Universities Development Fellowship in 1995. In recent decades, she has led multi-disciplinary research teams that conducted interventions toward improving the nutritional well-being of low-income communities. Internationally, she has led multi-country research investigating nutrition transition outcomes. Her research interests straddle nutrition issues at the family, community and public health levels. Professor Khor has been actively involved in capacity development in nutrition not only in Malaysia, but internationally as well. Since 1996, she chairs a Technical Working Group for Training which spearheads nutrition training for the Ministry of Health. Prof Khor has been teaching graduate students in the SEAMEO Regional Centre for Food and Nutrition, University of Indonesia for more than 15 years. Since 2004, Professor Khor has been a member of the Technical Advisory Group of the United Nations World Food Programme. She is a Scientific Adviser of the International Life Sciences Institute for Southeast Asia. She is the chief editor of the Malaysian Journal of Nutrition, the official publication of the Nutrition Society of Malaysia, of which she is a founding member and trustee. She is an editorial board member of several international food and nutrition journals. Professor Khor has three children and two grandchildren, and tries to find time for reading, gardening, and attending fitness classes.

#### **ASSOCIATE DEANS**

Associate Professor Dr. Philip George is a Consultant Psychiatrist and Addiction Specialist. He is presently the Associate Dean at the Clinical School of the International Medical University and an Honorary Consultant Psychiatrist with Hospital Seremban. He is also a Visiting Consultant Psychiatrist at Assunta Hospital. He graduated with MB BS in 1988 and did his Masters in Psychiatry in 1996. He completed a Certificate in Substance Abuse with University of Melbourne in 2003. His areas of interest are in Managing Stress, Prevention of Substance Abuse, and Depression. His previous appointments include being Senior Staff Specialist at the Alcohol and Drug Program, Canberra Hospital, and Senior Staff Specialist, ACT Mental Health in Canberra, Australia. He is a member of the Academy of Medicine, Malaysian Psychiatric Association and Malaysian Mental Health Association and Co-Chairman of the Organising Committee for the 1st World Congress on Healthy Ageing, 2012. Some his recent achievements include being awarded the Diploma on Mood Disorders from the Lundbeck Institute, Skodsborg, Denmark in October 2010: Outstanding Service Award from the Australian Capital Territory Mental Health Services for the year 2009; and the Award for Innovation and Quality Assurance from the Australian Capital Territory Mental Health Services for the year 2009. Philip was the Organiser, Facilitator and Speaker for 'Holistic & Rehabilitative Approaches to Common Mental Health Issues in Developing Countries' – a six day workshop held at Dow University of Health Sciences, Karachi, Pakistan from 13th to 18th April, 2008.



Clinical School

PHILIP GEORGE

MBBS MMed (Psych)

Cert in Substance abuse

AM (Mal)

Seow Liang Lin is currently the Associate Dean of Clinical Oral Sciences at School of Dentistry, International Medical University in Kuala Lumpur. Prior to this appointment she was the Director of Oral Health Centre, IMU from 2009-2012. Before joining the International Medical University she has served as lecturer and senior lecturer at the University of Malaya for ten years. She obtained her BDS degree from University of Malava in 1991, MSc in Conservative Dentistry from Eastman Dental Institute, University of London in 1994, and passed the Royal College of Surgeons of England Examination (FDSRCS) in 1995. She obtained her PhD degree from University of Malaya in 2006. She was the Founding President of Malaysian Association for Prosthodontics and currently the Immediate Past President for this Association (2011-2013), the Honorary Publication Secretary for Malaysian Dental Association (2007-2010) and the Country Representative (1997-2005) and Council Member (2005-present) of the Asian Academy for Prosthodontics. She is a Fellow of the Royal College of Surgeons, England and a Fellow of the International College for Dentistry. She also held the position of Editor-in-Chief of the Malaysian Dental Journal from 2007-2010. She was also the Secretary (2004-2006) and Council Member (2006-2010) of International Association for Dental Research (Malaysian Chapter). She has special interest in aesthetic dentistry, dental materials and prosthodontics. She has published widely in numerous indexed and peer-reviewed journals. She has presented over 50 scientific papers and has won over 20 awards at international and local scientific conferences, namely, the Gold Medal and Best Oral Presentation at the 20th Anniversary CEREC Symposium in Germany, the Best Poster Presentation at The FDI World Congress in Shenzhen, the Best Oral Presentation at



School of Dentistry
SEOW LIANG LIN
BDS MSc FDSRCS PhD FICD

the Asian Academy of Prosthodontics Congress in Japan, Travel Award at the 12th International Association for Dental Research (IADR, SEA Division) Scientific Meeting, second prize for poster presentation at Singapore IDEM, Research Award at the IADR (SEA Division) Scientific Conference etc. She is married to Dr Wong Chee Piau, Associate Professor of Paediatrics at the University of Monash Malaysia. They have three children. Her leisure activities include gardening, travelling and watching movies.



School of Pharmacy

ER HUI MENG

BSc (Hons) PhD

Er Hui Meng is currently the Associate Dean of the School of Pharmacy at the Faculty of Medicine and Health, International Medical University in Kuala Lumpur. She obtained her BSc (Honours) from the University of Sydney in 1992, and PhD from the same university in 1997. Her area of work was on the design and synthesis of cisplatin analogues and their biological activities. She is also an Associate Member of the Malaysian Chemical Institute of Chemistry. Before joining the International Medical University in 1999, she was the Senior Chemist in the Research and Development department at the CCM Pharma Sdn Bhd. She has contributed to the development of a number of controlled release generic pharmaceutical products which are sold in the market today. She has played a major role in the design and implementation of the International Medical University Bachelor of Pharmacy (Honours) and BSc (Hons) Pharmaceutical Chemistry programmes. She was the Programme Coordinator for the IMU BSc (Hons) Pharmaceutical Chemistry programme from 2007 - 2009, and the Head of Department of Pharmaceutical Chemistry from 2010 – 2011. Her fields of interest include natural products and pharmaceutical analysis, as well as education research. She has been an invited reviewer for several peer reviewed journals including BMC Complementary and Alternative Medicine, Molecules and Malaysian Journal of Nutrition. She is also an external examiner for PhD dissertations and foundation programmes. She enjoys travelling and reading during her leisure time.



School of Health Sciences
WINNIE CHEE SIEW SWEE
BSc (Hons) Dietetics MSc PhD

Dr Winnie Chee is a Professor in the Department of Nutrition and Dietetics and Associate Dean of School of Health Sciences. She joined IMU on 2nd July 2008. She received her BSc Dietetics with First Class Honours in 1991 from Universiti Kebangsaan Malaysia. She later pursued her Masters and PhD in Nutrition from the same university in 1994 and 2004 respectively. She spent two years (2004-2006) as a post-doctoral fellow with the Nestle Research Center in Switzerland as project leader for research on bone bioactives. Prior to joining IMU, Associate Professor Winnie Chee was a lecturer for 13 years in UKM. Her specific areas of teaching are nutrition assessment, bone health, diabetes and renal nutrition as well as clinical dietetics. Her specific areas of research are in calcium and vitamin D in bone health, renal nutrition and diabetes nutritional management. She has also published extensively in these areas in peer-reviewed journals, proceedings and contributed to book chapters on nutrition. She has also been a reviewer for several journals such as the Malaysian Journal of Nutrition, Journal of Nutrition and the British Journal of Nutrition, She has also been an external examiner for several Masters and PhD thesis of local and international universities. Dr Winnie Chee was the former President of the Malaysian Dietitians' Association in 2005 and is currently an active member of several professional societies locally and overseas. She is currently chair of the working

group for nutrition recommendations for diabetes under the Malaysian Dietitians' Association and a member of the working group for several clinical practice guidelines pertaining to Type 2 DM, CKD and osteoporosis. She is also a member of the National Renal Registry for nutrition and the Technical Working Group for the Malaysian Dietary Guidelines for adults and children. She is a prominent speaker in many scientific conferences relating to renal nutrition and diabetes. She currently practices dietetics in the IMU Medical Center and IMU outpatient clinic in partnership with the Dietetic Department in Hospital Tuanku Ja'afar. In her spare time, she enjoys reading, movies, travelling and spending time with family.

Professor Stephen Periathamby Ambu joined IMU on November 6th 2006. He is attached to the Postgraduate Studies & Research/Department of Pathology. Professor Ambu is from Kuala Lumpur, and his qualifications are BSc (Zoology Major) (Madras University, India, 1973), MSc (Parasitology) (University College of North Wales, United Kingdom, 1976) and PhD (Biomedical Science) (University Malaya, 1981). Prior to joining IMU, Professor Ambu had served at the Institute for Medical Research (IMR), Ministry of Health Malaysia and Universiti Technologi MARA. He was the former Head of the Medical Ecology Division, Snake Farm (antivenom production) and the founding Head of the Environmental Health Research Centre at the IMR. He was also the Head of the WHO Collaborating Centre for Training to Eliminate Lymphatic Filariasis, IMR (2004 – 2005). Professor Ambu's specific areas of teaching are in Parasitology and Environmental Health. He has done research on parasitology, environmental health and ecology of small mammals and reptiles in relation to public health and has several publications to his credit in local and international journals. Currently there are a number of postgraduate students doing their MSc and PhD under his supervision. He is the immediate Past President/Life Member of the Malaysian Society of Parasitology and Tropical Medicine. He is also a Fellow of the Royal Society of Tropical Medicine and Hygiene (United Kingdom) and the Malaysian Scientific Association. He has also been a reviewer for several journals such as Tropical Biomedicine, Malaysian Journal of Science and the Medical Journal of Malaysia. He is on the Editorial Board of the Tropical Biomedicine. He has served on National Committees in air pollution and was involved in the preparation of Malaysia's Initial National Communication to the United Nations Framework Convention on Climate Change, Ministry of Science, Technology and the Environment. He has also contributed his expertise to the World Health Organisation as a Temporary Advisor to several environmental programmes conducted in the Western Pacific Region. He was an Adjunct Associate Professor in the Faculty of Environment and Agriculture, University of Western Sydney, Australia, from 2001 - 2004 and carried out many research projects in collaboration with the faculty members. In 1993, he received the Malaysian Society of Parasitology and Tropical Medicine Medal and in 2005 the Sandosham Medal. He was also awarded the excellent service awards by the Ministry of Health Malaysia in 1991, 1993, 1997 and 2003 and the AMN award by the Federal Government in 2000. Professor Ambu's hobbies are reading, travelling and gardening.



Postgraduate Studies and Research STEPHEN P AMBU BSc MSc PhD



CHU WAN LOY BSc PhD

Professor Chu Wan Loy is currently the Associate Dean of Research at the International Medical University (IMU) in Kuala Lumpur. Professor Chu joined IMU on April 1st 1999 as Lecturer, attached to the Division of Human Biology. He was the Programme Coordinator for the Medical Biotechnology Programme from 2009 – 2011. He obtained his BSc degree in Biochemistry from Universiti Kebangsaan Malaysia in 1988, and PhD from the University of Malaya in 1997. He undertook his post-doctoral training at the Marine Biotechnology Institute in Kamaishi, Japan from 1997 – 1998 with the support of a scholarship from the Japan International Cooperation Agency (JICA). Professor Chu has been actively involved in Algal Biotechnology research for more than 20 years. As an active member of the Malaysian Antarctic Research Programme (MARP), he has gone on three expeditions to the Antarctic and Arctic for the collection of polar algae. His research interests cover many aspects of algal biotechnology, ranging from bioactive compounds and nutraceuticals from algae, algae for bioremediation and toxicity testing, algae for biofuels to stress adaptation, and phylogenetics of algae. Professor Chu was the Honorary Secretary of the Asian Pacific Phycological Association (APPA) from 2005 - 2011, and Honorary Secretary of the Asian Pacific Society for Applied Phycology (APSAP) from 2003 – 2006. Presently, he is a Member of the Editorial Board of the Malaysian Journal of Science. He has published and presented over 120 scientific papers, and has supervised 8 PhD and 12 MSc students. In 2003, Professor Chu received the IMU Recognition Award for his achievements in research.

## PROFESSORS AND SENIOR MANAGERS

Professor John Tilagachandran Arokiasamy joined IMU on January 17th 2011. He is the Head of Community Medicine Division since 1 June 2012. Professor Arokiasamy is from Petaling Jaya, Selangor and has several qualifications having received his MBBS (Christian Medical College, Vellore, Madras University) in 1971, his MPH (University of Malaya) in 1976 and his MSc in Epidemiology (Harvard University) in 1977. Prior to joining IMU, Professor Arokiasamy had served in the Ministry of Health Malaysia and the Ministry of Defence Malaysia before joining the University of Malaya, where he served for 28 years training undergraduate students and also postgraduate public health students. Subsequently he spent 7 years in Melaka Manipal Medical College, where he served in various capacities including as Dean and Chief Executive. Professor Arokiasamy's specific areas of teaching are in Epidemiology, Medical Statistics and Research Methods. He has done research on the care of the elderly and non-communicable disease epidemiology and has several publications to his credit in local and international journals. He is the current President of the Asia Pacific Association of Medical Journal Editors (APAME). He has also been a reviewer for several Medical Journals such as Tropical Biomedicine, Preventive Medicine, International Journal of Medical Informatics, Asia Pacific Journal of Public Health and the Medical Journal of Malaysia. He was the former Editor of the latter, and presently continues to serve on its Editorial Board. Previously he had also served as President of the Asia Pacific Academic Consortium of Public Health. He has also contributed his expertise to the World Health Organisation as a Short Term Consultant and as Temporary Advisor to several countries in the Western Pacific Region. In 2002, he received the Malaysian Medical Association Outstanding Public and Healthcare Services Award. John is married to Susi who is presently active in social and community based activities. They have a son Adrian who is married to Liza and they have a daughter named Caitlyn Neha and a son named Aaron Ezekiel. During his free time, John enjoys reading, playing games, exercising, travelling and spending time with family.



JOHN T AROKIASAMY MB BS MPH MSc

Peter Barling is a graduate in Biochemistry from Oxford University who completed his Ph.D. in the Biochemistry Department, Imperial College, London University in 1971. He undertook three years of post-doctoral studies at The Middlesex Hospital, London University before migrating to New Zealand. There he was a tenured Senior Lecturer in the School of Biological Sciences and the Medical School at the University of Auckland, where he worked for 33 years. He first came to Malaysia in 2007 as a Professor of Biochemistry in the Department of Biomedicine and Therapeutics at the Medical School, Universiti Malaysia Sabah. He joined the International Medical University in November 2011, where he is currently Professor of Biochemistry in the Department of Human Biology. His research interests throughout his career have been centred on the development, endocrinology and metabolism of bone, and he published 37 papers in internationally reviewed scientific journals. He initially worked on the structure-function relationships of parathyroid hormone and calcitonin, hormones regulating bone metabolism. Subsequently, he looked at bone development from the perspective of the growth factors involved in the



**PETER MICHAEL BARLING**BA PhD

annual reformation and regrowth of deer antlers, the only known example of a mammalian tissue structure capable of full regeneration. Since arriving in Malaysia he has refocused his interest in the direction of studies of human bone density and osteoporosis, and has been the Chairman of a Clinical Symposium on Osteoporosis and a member of the Malaysian Osteoporosis Society. He has worked on nutritional aspects of milk and dairy products in Malaysia, doing studies of lactose intolerance amongst Malaysians. He has a keen interest in medical education issues, and has published two papers in the Clinical Teacher on aspects of Medical Education in Malaysia. He reviews papers for The Clinical Teacher, Comparative Biochemistry and Physiology, PLoSONE, Archives of Oral Biology, Nurse Education Today, and the Borneo Journal of Medical Sciences. He is a member of the editorial board of the Chinese Journal of Clinicians. His hobbies include swimming for exercise, computer hardware and photography, and he is an active member of the New Zealand Green Party.



FATIMAH BINTI ARSHAD BSc MSc PhD

Fatimah binti Arshad is currently a Professor of Nutrition, Dietetics and Health and the Head of Nutrition & Dietetics Division in the School of Health Sciences. International Medical University in Kuala Lumpur. Prior to this appointment she was the first Head of Department for the new Programme Nutrition and Dietetics (2007 - 2009). Before joining the International Medical University she was a Professor in Nutrition and Dietetics at the Department of Nutrition and Dietetics in the Faculty of Allied Health Sciences at the Universiti Kebangsaan Malaysia (UKM) where she worked since July 1976. She started teaching at the Department of Community Health in the Medical Faculty and pioneered the New Faculty of Allied Health in Kuala Lumpur campus. She started her own Department of Dietetics which later merged with Nutrition from main campus Bangi and formed the Department of Nutrition and Dietetics. She obtained her BSc of Dietetics and Masters in Nutrition from the Louisiana State University (LSU), USA from 1971-1973. She then worked as a lecturer in the Department of Community Health at the Medical Faculty UKM. She completed her PhD from the University of British Columbia, Canada in 1985 and continued working in UKM until 2006. She obtained a Postgraduate Diploma in Dietetics (masters Equivalence) from Kings College London and her State Registered Dietitian in 1990. She was awarded Associate Professorship and Professorship from UKM. After her retirement in 2005 she worked on a contract basis in UKM until IMU offered her the position of Head of Department in a new Programme of Nutrition and Dietetics. She was the First President of The Malaysian Dietitians' Association (MDA) 1994 - 2004, the First President for the parenteral and Enteral Society of Malaysia (PENSMA) from 1994 - 2002, the first council member of The Malaysian Association of the Study of Obesity (MASO) 1994 - 1998 and pioneer member of the Malaysian Nutrition Society of Malaysia (NSM). Her fields of interest include Obesity both in Adults and Childhood, Diet and Cancer, Glycemic Index among post GDM women. Geriatrics Health and Nutrition and she has published two books. supervised about 300 postgraduate students and written about 200 scientific papers. She has five sons and four grandchildren. The eldest son is a consultant Physician in Emergency Medicine at PPUKM, a medical graduate from Galway Ireland, the second son is doing a postgraduate degree in Accountancy and Management a graduate of Monash University and UITM, the third is a mechanical Engineer finishing his degree programme. The younger two boys are entrepreneurs in multi skills. Her ardent hobby is gardening and she grows a thousand and one plants including herbs on

top of Bukit Ampang . She reared Kampong chicken with a San Diego concept of a chicken house, raised catfish with equipped waterfall and rock garden. She built a small swimming pool with Bali concept waterfall. She is also a great cook and practices a healthy lifestyle from aerobics, yoga to cycling and motor biking. She has climbed Gunung Kinabalu and used to play netball, hockey, and futsal. She can sing and dance and loves music and not to forget Quran recitals. Her weakness is good food and she never has any food restrictions as long as it is halal. She loves travelling, hiking camping BBQs and has visited almost all international countries except Russia. She plans to spend time with friends in Vancouver, London, Africa, India, China, and Indonesia after her real retirement from IMU.

Esha Das Gupta is currently Head of the Department of Internal Medicine at IMU clinical school and Professor of Internal Medicine of the same. She joined IMC (International Medical College) in August 1994 and was the first IMC staff stationed in Hospital Seremban. She single handedly coordinated the clinical teaching in Seremban and contributed to the Petaling Jaya campus as well. In 1999, when the clinical campus was established in Seremban, she was the first and only staff to plan the teaching in the Department of Internal Medicine in the clinical school of Seremban. She has introduced simplified examination techniques for the musculoskeletal system in IMU and prepared a video of the same. She has supervised Masters and Bachelor of Medical Science students as well. Before joining the International Medical University she was the consultant Physician in Seremban General Hospital. She obtained her MBBS from the University of Calcutta (India), and subsequently MRCP from the Royal College of Physicians of Ireland, and the Post Graduate Diploma in Rheumatology and Dermatology from University of Bath and Cardiff respectively. She is a practicing physician and Rheumatologist. At present she is the President of the Malaysian Lupus Association from 2008 – till to date. Before that she was vice president of the same organization from 2006 -2008. She is a committee member of the Malaysian Society of Rheumatology since 2008. Prior to that she was the auditor of the same society from 2004-2008. She is a Fellow of the Royal College of Physicians of Ireland, and also a Fellow of the Royal College of Physicians of London. She is a member of the Academy of Medicine of Malaysia. Esha Das Gupta is a member of PRYME (Practical Rheumatology Made Easy) and is involved in teaching rheumatology to primary care physicians of Malaysia nationwide. She is also the contributor of Malaysian practice guidelines for osteoarthritis. She enjoys music, painting, and all other forms of art during her leisure times.



**ESHA DAS GUPTA**MB BS MRCP FRCPI FRCP PG Dip
PCR PG Dip Practical Dermatology



MICHAEL T HANELINE BA MPH DC FICR

Michael T. Haneline, BA, MPH, DC, FICR is currently a Professor and Head of Chiropractic at the International Medical University in Kuala Lumpur. Prior to this appointment he was a Professor in the Department of Research at Palmer Chiropractic College West in San Jose, California, USA. He attended the University of Nebraska, majoring in Pre-chiropractic, and graduated from Southern California Health Sciences University-Los Angeles College of Chiropractic with Bachelor of Arts and Doctor of Chiropractic degrees. He also has a Master of Public Health degree from California College for Health Sciences, is a graduate of the Los Angeles College of Chiropractic Orthopedics Programme, and is a Fellow in the Institute of Chiropractic Research. Dr. Haneline practiced chiropractic for nearly 30 years and has been involved in education and research since the early 1980's. He previously did spinal biomechanics research with Chung Ha Suh, PhD and worked for the Spine Research Institute of San Diego. Before taking the position as Head of Chiropractic at the International Medical University, he was a Professor in the department of research at Palmer College of Chiropractic West and taught evidence-based chiropractic. He has authored numerous articles which have appeared in peerreviewed journals and is the author of two recent textbooks entitled Evidence-Based Chiropractic Practice and An Introduction to Public Health in Chiropractic, both by Jones and Bartlett Publishers.



**HLA YEE YEE** MB BS MSc PhD

Hla Yee Yee is from Burma and joined the International Medical University in June 1999. She is currently a Professor of Physiology at the Faculty of Medicine. Prior to joining IMU, she worked with the Universiti Sains Malaysia, Kelantan for three years and with the Government of the Union of Burma for twenty six years, resigning for personal reasons from the post of Professor & Head, Department of Physiology, Institute of Medicine (1), Rangoon. She obtained her MBBS from the Institute of Medicine (1), Rangoon in 1968, MSc in Renal Physiology from the Institute of Medicine (Mandalay) in 1972, and PhD from the University of London in 1989, also specialising in Renal Physiology related to essential hypertension. She was a founding Member and Past President and currently Patron of the Myanmar Physiology and Biochemistry Society, an arm of the Myanmar Medical Association; and an Ex-co Member of the MMA. Other affiliations include the Malaysian Society of Pharmacology & Physiology (MSPP) for which she served as Chief Editor of its Newsletter between 1996 and 1999; Federation of Asian & Oceanian Physiological Societies (FAOPS); Association of Medical Educators in Europe (AMEE); Physiological Society UK. She served as Editor-in-Chief of the Myanmar Medical Journal and as Editor for the Myanmar Journal of Health Sciences from 1994 – 1996; and is a Reviewer for the Medical Teacher, Malaysian Journal of Medical Sciences (MJMS), Education in Medicine (EMJ) and World Applied Science Journal (WASJ). Her fields of interest include salt and hypertension, problem-based learning (PBL), assessment, education environment, English literature. She started publishing poems in The Guardian Daily and Guardian Magazine in Burma in 1962, under her real name as well as under the pseudonym "Zeyarthu"; and has published poems and articles in the Medical Tribune. Extracurricular activities include Advisor, Buddhist Society in IMU as well as in USM. She is married to Dr Htin Aung, an Occupational Physician with MAHSA, Kuala Lumpur. Her leisure activities include writing poems, playing Scrabble, gardening, walking and taking the granddaughters on a journey of discovery of the world.

Kenneth Koh is the Director of Business Development for the International Medical University ("IMU"). He joined IMU in 2008 as the Senior Manager of Business Development and sits on the Management Committee of IMU. Ken, an accountant by training, is a Fellow of the Association of Certified Chartered Accountants ("ACCA") and a Chartered Accountant of the Malaysian Institute of Accountants. Following completion of his ACCA examinations in Gwent College in Wales, he started his career with Arthur Andersen, Kuala Lumpur in 1992 until he left as a Senior Associate in the Audit and Financial Advisory Division. In 1994, he joined Usaha Tegas Group ("UT Group") as a Corporate Finance Executive. Ken was part of the corporate team responsible for the group's corporate transactions and M&A activities in various sectors including telecom, pay TV, satellite, leisure and power. In the later part of his career with the UT Group, Ken focused on market entry initiatives for its Group companies, in particular in the telecom sector into emerging markets. From the corporate scene as a Corporate Finance Senior Manager, Ken in 2005 moved into an operational role in MEASAT Global Berhad ("MEASAT"). He was appointed as MEASAT's Head of Finance and Administration and later as a Financial Consultant. He was also a member of the Senior Management Team which managed the day-to-day operations of MEASAT. In his spare time, Kenneth serves in a local church, tries to hit the gym and potters around the garden.



KENNETH S K KOH

Dr Kwa Siew Kim is currently a Clinical Professor at the Department of Family Medicine in the Faculty of Medicine and Health, International Medical University in Kuala Lumpur since 2002. Before this, she was practising as a general practitioner in Malaysia, Australia and Singapore. She has prior academic experience at the National University of Malaysia (UKM) where she worked from 1993 – 2000 in the Family Medicine Department. She obtained her MBBS from the University of Malaya in 1976, passed the Diploma in Reproductive Medicine in 1985 and the Conjoint Malaysian College of General Practitioners (MCGP) / Royal Australian College of General Practitioners (RACGP) examination in 1986. She received her Membership of the Malaysian College of General Practitioners in 1986 and became a Fellow of the Royal Australian College of General Practitioners (FRACGP) in 1988. In 1992, she obtained her MSc in Medical Demography from the University of London. She was awarded a Diploma LSHTM by the London School of Hygiene in 1996, Fellow of the Academy of Family Physicians of Malaysia (FAFPM) in 1997 and was accepted as a Member of the Academy of Medicine (AMM) in 2005. In 2007 she was registered as a Family Physician in the National Specialist Register. She has been a Council member for the Malaysian Academy of Family Physicians (MAFP) from 1999 -2002 and was Editor for the Malaysian Family Physician Journal in 2000-2001. Currently she sits on the Faculty Board and Board of Examiners for the postgraduate training and examination in Family Medicine: - Conjoint MAFP/FRACGP examination; Diploma in Family Medicine (DFM); Advanced Training Programme (ATP) and the Certificate course for Training Teachers in Family Medicine. She is involved in many societies and is a life member of the Malaysian Medical Association since 1994. Her current fields of interest include sexual and women's health, chronic disease management and medical education. She has written many distance learning modules and conducted numerous workshops for postgraduate Family Medicine and medical education. Her leisure activities include enjoying good food, listening to music and travelling with her Chartered Structural Engineer husband.



KWA SIEW KIM MBBS DRM FRACGP MSc MAMM FAFPM



**LIM PEK HONG** RN SCM BN Med PhD

Lim Pek Hong is currently a Professor of Nursing and the Head of Nursing Division, International Medical University in Kuala Lumpur. Before joining the International Medical University she was Associate Professor and Head of Nursing in the Allied Health Sciences Department, Faculty of Medicine, University of Malaya in Kuala Lumpur. She graduated from the School of Nursing, University Hospital, Kuala Lumpur in 1971 and worked as a registered nurse since 1972. Since then she has further upgraded her professional education, experiences and training with post basic nursing in Midwifery (UK) at Queen Mary's Maternity Hospital, West Middlesex; Burns Nursing (UK) at the McIndoe Burns Centre, Queen Victoria Hospital, East Grinstead Sussex, England: Advanced Diploma in Nurse Education (Malaysia), University of Malaya; Advanced Diploma in Business and Management (UK), Swansea Institute of Higher Education; Bachelor of Nursing (Aust.) La Trobe University; and Postgraduate degree at Masters and PhD level in Educational Administration and Planning (Malaysia) at the Faculty of Education, University of Malaya. Her vast working experience includes working as a registered nurse and nurse administrator in the medical, surgical and maternity areas both in local and private hospitals in Malaysia, and as an educator and head of nursing programmes with the University Hospital and University of Malaya. In nursing education, Pek Hong has been actively involved with academic administration leading the team in developing, implementing and evaluating nursing programmes for accreditation by the Nursing Board Malaysia and the Malaysian Qualifications Agency. With regards to research, she played a prominent role in spearheading the formation of the Nursing Research Steering Group in Nursing Sciences Unit formed in May 2000. She was a Panel Member and is currently a member of the Curriculum and Examination Committee, Nursing Board Malaysia, and is actively involved with the Nursing Board as an assessor for new nursing programmes. Currently she is the External Member to the Board of Governors of Tung Shin Hospital, Kuala Lumpur; and the Public Member to the Board of Adventist College of Nursing and Health Sciences, Penang. Her areas of interest are in nursing education, administration, research, personal and professional development and she has presented and published papers in these areas. Her leisure activities include reading, travelling, watching television and spending time with family members.



**JAI MOHAN**MB BS FRCP FAMM AMP DPMP KMN

Dato' Jai Mohan was appointed Professor of Health Informatics & Paediatrics at the International Medical University in October 2005. In addition to teaching Pediatrics and Health Informatics, he is also Director of Learning Resources (including the Medical Library and the E-Learning Department) at the University. Jai Mohan worked for 30 years in the Ministry of Health Malaysia including stints as head of paediatrics at Seremban Hospital and Ipoh Hospital. He was head of paediatrics at Malaysia's first paperless and filmless hospital at Selayang before retiring from government service in 2001. Jai Mohan obtained his MBBS from the University of Malaya in 1971 and his MRCP (UK) in 1976. He subsequently was conferred Fellowships by the Academy of Medicine Malaysia and the Royal College of Physicians of London. He was conferred the AMP, DPMP and KMN for his services. Following retirement he worked in industry as Director of Healthcare Informatics and as Clinical Domain Director in two companies which were implementing the Total Hospital Information Systems Phase 1 (14 hospitals) and the Multimedia Supercorridor (MSC) Telehealth Projects respectively for the Ministry of Health. He is currently President of the

Malaysian Health Informatics Association. He was a member of the International Advisory Panel of HIMSS Asiapac from 2007-2010. He is a past president of the Malaysian Paediatric Association. He was Team Leader of the joint Ministry of Health - Industry team that developed the blueprint and concept requests for proposals for Malaysia's ambitious Multimedia Supercorridor Telemedicine (later renamed Telehealth) Flagship Application. He was a temporary consultant to WHO (SEARO) on Telematics. He has published 38 papers and 10 research reports on paediatrics and health informatics and health policy. He has presented extensively locally and internationally on paediatrics and healthcare informatics. His current interests include e-learning, medical education and health informatics. He is married to Datin Pearl who is Vice-President of the Malaysian Child Aid Society (MACAS) and a past District Chairman of Inner Wheel District 330 (comprising Malaysia and Singapore). She is a past President of the International Women's Association Kuala Lumpur. Jai and Pearl have 2 children. Sasha is a graduate of IMU and works in the paediatric unit in Hospital Kuala Lumpur. Shashi is completing his Masters in Bioinformatics at the University of Malaya.

Professor Dr Vishna Devi V Nadarajah graduated with a First Class Honours degree in Biochemistry from the University of Malaya in 1994. During her undergraduate years, she was also awarded the University Book Prize and the Best Thesis award from the Malaysian Society of Biochemistry and Molecular Biology. She obtained her PhD at the University of Cambridge in the field of microbial biochemistry and was awarded the Chevening Award for her PhD studies. At Cambridge, Dr Vishna won several awards including The Society for Invertebrate Pathology: Best Student Paper Presentation Award 1997 (International), The Frederick Sanger Travel Fund and a bursary award from the Cambridge Commonwealth Trust. Upon her return to Malaysia, Dr Vishna joined the International Medical University as lecturer. Dr Vishna has won external grants for her research including the Ranjeet Singh Bhagwan Grant from the Academy of Sciences, the MAKNA, Cancer Research Grant and the prestigious Association Franscaise contro les Myopathies (AFM) for research on biomarkers for steroid treated Duchennes patients. She has published and presented 54 research papers in both medical sciences and medical education, and reviews for indexed and international journals. She has supervised both postgraduate and medical students for their research thesis, and is proud to see her students having successful careers of their own. Dr Vishna was also involved in curriculum development in IMU, having played a key role in the development of Problem Based Learning for the medical faculty at IMU and the newly developed Medical Biotechnology curriculum. Dr Vishna is currently completing her Masters in Health Professionals Education at Maastricht University. Externally Dr Vishna was an elected Committee Member of Chevening Alumni Malaysia (2005 to 2007), an invited panel member for Anugerah Academik Negara 2007 and 2008 (National Academic Awards, organised by the Ministry of Higher Education) and the safety committee for Standards Malaysia on Microbial research (2007 to 2009) and Project consultant for the Mend a Friend Project in collaboration with the University of Queensland.



VISHNA DEVI V NADARAJAH BSc Hons PhD



SIVALINGAM NALLIAH MB BS MCGP FRCOG FAMM FICS Master Ed

Professor Dato' Dr Sivalingam Nalliah is currently Head of Division, Human Development and Population Health in the Clinical School of the International Medical University in Seremban. He graduated from the University Malaya in 1974, completed his Internship in Malacca Hospital and Postgraduate Training in Johor Baru Hospital before going to UK for the postgraduate degree in Obstetrics and Gynaecology. He obtained his MRCOG in 1980 and was elevated to become Fellow of the Royal College of Obstetricians and Gynecologists, UK in 1992. He undertook a Visiting Fellowship in Gynaecological Oncology at the University of California, Irvine and Northern General Hospital in Sheffield (ICRETT) and the Urogynecology Fellowship in Townsville, Queensland, He obtained the Master in Education through OUM in 2009. Prior to joining IMU, he was Head of Obstetrical and Gynaecological Services (Ministry of Health) and Head of the Department of O&G, General Hospital Kuala Lumpur. He was also Chairman of the National Confidential Inquiry into Maternal Deaths, Malaysia and a member of the Perioperative Mortality Review, Malaysia. He has been involved in many professional activities that included being Past President, Obstetrical & Gynaecological Society of Malaysia, Past Council Member of Malaysian Medical Association, Past Vice President and Council Member of the College of O&G, Academy of Medicine and Hon Adviser to the Malaysian Midwifery Society. His main academic interests are in Maternal Obstetrics, Emergency Obstetrics, Gynecologic Oncology and Medical Education. Among the Honours and Awards he has received are the Emergency Obstetrics Community Service Award 2002 (Federation International Gynaecology & Obstetrics), KMN, PMP, and DPMP. He has interests in training undergraduates, midwives and postgraduates.



KANDASAMI PALAYAN
DPMP SAP AMN AMP
MB BS (Bom) FRCS (Edin)
FRCS (Glas) FRCS (Ire) FAMM

Professor Dato' Dr Kandasami is currently Professor of Surgery at the International Medical University and an Honorary Consultant Surgeon at the Hospital Tuanku Ja'afar, Seremban. He received his medical degree from University of Bombay in 1975 and the Fellowships in General Surgery from the Royal Colleges of Surgeon of Ireland, Edinburg and Glasgow in 1981. He was conferred the Fellowship of the Academy of Medicine Malaysia in 1998. After his surgical training in the United Kingdom, Dr Kandasami served as consultant General Surgeon in several Ministry of Health hospitals. During the tenure, he developed surgical gastroenterology as part of his all-embracing general surgical work. His work focused on esophageal and gastric surgery. He played a pivotal role in the development of Upper GI surgical subspecialty training programme in the Ministry of Health. He resigned from public services in 2001 and joined the International Medical University. He was appointed Associated Dean of Health Services from 2002 to 2005, Dean Clinical School (Admin) from 2005 to 2007 and Dean Clinical School from 2007 to 2009. During this period, he helped expand clinical training to several medical facilities. He is a council member of the Asian Surgical Association, the Academy of Medicine Malaysia, and a member of the General Surgery Specialty Board. Dr Kandasami was council member of the College of Surgeons, Academy of Medicine Malaysia from 1985 to 2001 and was President of the College from 1996 to 1997. He is a council member of the Malaysian Society of Gastroenterology and Hepatology and was its past President from 1997 to 1998. He has contributed substantially to the development of surgical services in the country. He has been actively involved in organizing and conducting postgraduate courses and was the Chairman of the Higher Surgical Training Committee of the College of Surgeons, Malaysia. He was Deputy Chairman and a member of the National Perioperative Mortality-Review Committee. Dr Kandasami

was a member of the National Credentialing Committee since its inception in 2002 to 2009. He played a significant role in the development of the national credentialing system and the National Specialist Register.

Allan K H Pau is Professor in Dental Public Health and Director of Oral Health at the School of Dentistry, International Medical University in Kuala Lumpur. Prior to this appointment he was a specialist registrar/honorary senior lecturer at King's College London from 2009 – 2011, and before then he was a senior lecturer at Queen Mary College London. After graduation from King's College London with BDS, he worked in general dental practice and the community dental service before completing his MSc and PhD in Dental Public Health at Queen Mary University of London. He was elected to The Royal College of Surgeons of Edinburgh (RCSEd) as a Fellow in Dental Surgery (FDS) after the successful completion of his specialist training, and was entered into the UK's General Dental Council List of Dental Public Health Specialists. He is also a Fellow of the Higher Education Academy (FHEA). His research interests include dental pain measurement and epidemiology, dental education and oral health services evaluation.



**ALLAN K H PAU**BDS DDPHRCSEng MSc PhD
FDSRCSEd FHEA

Ammu K Radhakrishnan obtained a First Class Honours Bachelor of Science degree in Biochemistry from the University of Malaya, Kuala Lumpur. She was appointed as a research fellow at the Department of Biochemistry, Faculty of Medicine, University of Malaya for two-years and obtained a Master of Science Degree. In 1989, she was awarded the prestigious Shell-Cambridge Commonwealth Trust Scholarship and the British ORS Award to read for her Doctor of Philosophy at the Department of Pathology, University of Cambridge, Britain. She worked as a post-doctoral research assistant at the Sir William Dunn School of Pathology, University of Oxford, Britain (1 April 1994 to 28 Feb 1996) before returning to Malaysia. Upon her return to Malaysia, she joined TropBio Research Sdn. Bhd., a joint-venture plant biotechnology company as a Senior Research Scientist-cum-Research Manager (acting) (1 Apr 1996 to 30 Apr 1997). She joined the International Medical College (IMC), now the International Medical University (IMU) in May 1997. Currently, she is a Professor of Pathology, at the Faculty of Medicine and Health, International Medical University in Kuala Lumpur. Prior to this appointment, she was Head of the Pathology Division of the Faculty of Medicine and Health (Feb 2009 to 31 Mac 2012). In addition to teaching, she is also actively involved in research. Currently she has several postgraduate students working with her. Her research areas include tumour immunology in the area of immune regulation and modulations in breast cancer as well as developing immune-based therapeutics and identifying novel natural products with anti-cancer activities. She has several publications in ISI-indexed and peer-reviewed journals. She has presented papers at many scientific meetings. Currently, she is a Fellow of the Cambridge Commonwealth Trust and the Cambridge Philosophical society. She is also a member of the British Society of Immunology, the Cambridge Society, Oxbridge Society of Malaysia and others. She is married to Somanadhan KV Balakrishnan, an Aircraft Maintenance Engineer-cum-Quality Manager at the Eurocopter (M), Sdn Bhd. They have a three-year-old daughter. Her leisure activities include reading novels, cooking and watching movies.



**AMMU KUTTY RADHAKRISHNAN** BSc (Hons) MSc PhD



DAVENDRALINGAM SINNIAH MBBCH BAO DCH MA MD DSC FRACP FRCPI FAMM

Davendralingam Sinniah is currently a Professor in Paediatrics at the Department of Paediatrics, International Medical University Kuala Lumpur. He is based at the IMU Clinical School Seremban. Prior to this appointment he has held the positions of Senior Investigator, Cancer Research Center, University of Pennsylvania School of Medicine, Philadelphia, Professor of Paediatrics at University of Malaya, Kuala Lumpur, Foundation Professor of Paediatrics at University Putra Malaysia, Foundation Professor of Paediatrics at Melaka-Manipal Medical College, Professor of Paediatrics at Penang Medical College, and Professor of Paediatrics at the Faculty of Medicine, AIMST University, Semeling respectively. He obtained his MBBCh, BAO, BA from Trinity College Dublin (University of Dublin) in 1963, and later the MA, MD, and DSc from the same University. He was the President of the Malaysian Paediatric Association from 1988 -1990; President of the Malaysian Society of Health during the years: 1990, 1992, 1994, and 1998 respectively. He is a Fellow of the Royal Australasian College of Physicians, a Fellow of the Royal College of Physicians Ireland, and a Fellow of the Academy of Medicine of Malaysia. He has held the positions of Editor-in-Chief of the Malaysian Journal of Child Health from 1986 - 1990 and Editor of the Medical Journal of Child Health from 1991 - 1998. He was a recipient of the Heinz Fellowship Award, Longman's Research Award (for Research on Epidemiology of Reye's syndrome), the Gold Medal Award of the Asian Committee on Reve's Syndrome and Other Mitochondrial Diseases, the Tun Razak Research Award by the Academy of Medicine, Malaysia and the Kuok Foundation for Research on Margosa Oil toxin as a cause of Reye's syndrome, and the Medal for Excellence by the Malaysian Society of Health. He was appointed Senator of the International College of Paediatrics. He has been an Examiner for the Diploma in Child Health, Conjoint Board of the Royal College of Physicians and Royal College of Surgeons in Dublin Ireland, The National University of Ireland, and Examiner for the Part II Membership of the Royal College of Physicians (Child Health) Ireland.



TENG CHEONG LIENG
MB BS MMed (Family Medicine)
Master of Family Medicine
FRACGP FAFPM FAMM

CL Teng is currently the Professor and Head of Department of Family Medicine based in the IMU Clinical School in Seremban. He joined IMU in 1999 when the clinical school was started in Seremban. Negeri Sembilan. Prior to that, he was a lecturer in the Department of Primary Care Medicine, University of Malaya, Kuala Lumpur. CL Teng obtained his MBBS from University of Malaya in 1987. Thereafter he worked briefly in Hospital Kuala Lumpur and then in Sarawak for two years. When MMed (Family Medicine) programme in University of Malaya started in 1990, he was among the first few trainees. After completing his family medicine training in 1995 (and obtaining simultaneously the MAFP/FRACGP privately), he joined the academia at his alma mater but left to join International Medical University in 1999. Through his interest in evidence-based medicine and primary care research, he became acutely aware of the lack of research output in family medicine and the difficulty to track down many of these research works. This has led to the formation of Malaysian Primary Care Research Group (which he chaired from 2004-2006) aimed primarily to encourage collaborative research between primary care doctors in the public sector, private general practices and the academia. He was Editor of Malaysian Family Physician for the period 2006 to 2012. He is an active member of the Academy of Family Physicians of Malaysia, for which he currently serves as Council Member, Director of Advanced Training Programme and member of the Board of Examiners. He is a reviewer of several Malaysian and international journals. CL Teng is a fellow

of the following organisations: Academy of Medicine of Malaysia, Academy of Family Physicians of Malaysia and Royal Australian College of General Practitioners. CL Teng has more than 150 publications and presentations of which 85 are journal articles.

Dr Hematram Yadav is currently a Professor in the Community Medicine Division in the International Medical University, Kuala Lumpur Malaysia. Prior to his appointment he was in the Department of Social and Preventive Medicine in University Malaya (UM) as Head of Family Health. He joined UM after retirement as Head of Family Health and Development Division in the Ministry of Health, Malaysia. He received his basic medical degree (MBBS) from University of Kerala, India and went on to do his Masters in Public Health (MPH) in University Malaya and MBA from Boston University. He has over 35 years of experience in the field of Public Health both locally and internationally. He worked as a consultant for WHO, UNICEF and In Develop (Sweden). While as a consultant with WHO in the Western Pacific Region, he worked in areas such as Primary Health Care, Maternal and Child Health Care, and Health Services Management in several countries. He has published and presented technical papers extensively in both the local and international level and has authored 8 books. During his career in the Ministry of Health, he served as Chairman of the Reproductive Health Meeting organized by the Family Health Division at World Health Organization (WHO) HQ in Geneva, and as also Vice-Chairman of the Members of Interested Parties Meeting (MIP) in WHO. He has organised several conferences and has been Organizing Chairman of several workshops. He is a Fellow of the Academy of Medicine, Malaysia (FAMM) Public Health Chapter and is on several editorial boards including the Asia Pacific Journal of Public Health and the Rural and Remote Journal (Asian Edition) of Australia. He has been a reviewer of several journals and has participated in several research projects. His current research interest is on maternal mortality and low birth weight infants. Currently he is an advisor to the Federation of Malaya Manufacturers (FMM) for Infant Formula Committee and also to a Wellness Programme with Learningedge Consultants Sdn. Bhd. He is married to Madam Devka Rani and has 3 children all of whom are working. In his spare time he loves travel and sports.



HEMATRAM YADAV
MB BS MPH MBA MRSH FAMM
JSM KMN AMN PMP

Yeoh Peng Nam is presently Professor of Pharmacy in IMU. Prior to joining IMU she was Professor of Pharmacology and Head of Department, University of Malaya and Founding Professor of Pharmacy and Head of Department, University of Malaya. Internationally she has participated in the review of WADA (World Anti-doping Agency) grants for research projects and was previously Malaysia's representative to the International Brain Research Organization (IBRO) for many years. Professor Yeoh is a Registered Pharmacist and serves in the Ministry of Health Malaysia as a Member of the Pharmacy Board, Malaysia. She also serves in the National Clinical Research Committee and the Standing Committee on Traditional and Complementary Medicine. She is a Council member of the Malaysian Pharmaceutical Society (MPS), and Chairperson of its "Grants & Awards" Committee, Member of the Academy of Pharmacy, and Council Member Alumni Association of King Edward VII College of Medicine and the Faculties of Medicine Universities of Malaya and Singapore. At IMU, she is Secretary, IMU Research & Ethics Committee, IMU Coordinator of



YEOH PENG NAM BPharmacy MS PhD

eSciFund for MOSTI, and was previous Head of the Division of Chinese Medicine, School of Pharmacy and Health Sciences. Her areas of research are in Drug Discovery with local herbs, Pharmacy Education, and Neurotransmitters in Experimental Seizures.



ZHOU WENXIN

Zhou Wenxin is currently the head of Chinese medicine and Professor at the Faculty of Pharmacy and Health Science, International Medical University in Kuala Lumpur. Prior to this appointment he had served in Shanghai University of Traditional Chinese Medicine for 28 years. He was head of the Division of Acupuncture and Tuina Therapy, College of Acupuncture and Tuina from 1998 to 2003. He has been head of the Division of Tuina Therapy since 2003. He has been Professor in College of Acupuncture and Tuina, Shanghai University of TCM since 2001. He obtained his Bachelor of Medicine from Shanghai College of Traditional Chinese Medicine in 1982 and Master of Medicine from Shanghai College of Traditional Chinese Medicine in 1988. Professor Zhou's specific areas of teaching are in Acupuncture and Tuina. He has performed research on the mechanism of the acupuncture under grants from China Natural Science Foundation and Shanghai Municipal Science Foundation etc. He has considerable exposure to clinical experience in the practice of acupuncture and Tuina both in China and overseas, particularly in Singapore, Norway, Romania, Thailand and Malaysia in the past 20 years. He has published and presented over 10 scientific papers and was the chief editor of the textbook, Therapeutics of Acupuncture and Tuina, published by Shanghai Scientific and Technological Publishers in 2001, chief editor of Handbook of Acupuncture Prescription for Inner Diseases by Press of Shanghai University of TCM in 2004, editorial member of the textbook, Therapeutics of Acupuncture, by China Press of Traditional Chinese Medicine in 2003, and deputy editor-in-chief of the textbook, Therapeutics of Tuina, by China Press of Traditional Chinese Medicine in 2012. He is managing director of the Clinical Branch of China Acupuncture and Moxibustion Association now. Zhou Wenxin is married and in his spare time, he enjoys music, reading, exercising, travelling and spending time with family.

## **ADJUNCT PROFESSORS**

Donald KF Chen is currently an Adjunct Professor at IMU as an Industrial Linkage Partner in the area of Environmental, Occupational Health and Safety (since 2009). He graduated with a Doctorate Degree in Public Health (Dr.PH.) from the University of Michigan, School of Public Health, Ann Arbor, Michigan, USA. in 1982. His major is Environmental and Industrial Health and did his doctoral research based on the "Analysis of organochlorine pesticides residues in Malaysian paddy fish and the health risk to human consumption". In the early 1990's, Donald was an Executive Director of Metro Kajang Holdings Berhad (currently known as MKH Berhad) which is involved in property development, construction and building materials trading. After leaving MKH, he started his own business related to wine and herbs, environmental health and biotechnology. He is a Past President and current member of Kajang Rotary Club (since late1980's) and also a life member of ENSEARCH, Member of Vistage-8 CEO Group since 1996 (formerly known as TEC-ASIA). He enjoys golfing, swimming, walking, reading, traveling and good food.



**DONALD KF CHEN**DrPH

Prior to his present appointment as Senior Professor and Dean of Faculty of Medicine & Health Sciences, Universiti Tunku Abdul Rahman, Professor Cheong was the Professor of Medicine/Haematology and Head of the Division of Medicine in the Clinical School, International Medical University (IMU), Seremban. Before joining IMU, Professor Cheong was the Professor of Haematology in the Faculty of Medicine, Universiti Kebangsaan Malaysia, and Head of the Department of Laboratory Diagnostic Services and Head of Clinical Haemtology & Stem Cell Transplant Services of Hospital Universiti Kebangsaan Malaysia. He received his basic medical degree (MBBS) from the University of Malaya in 1975, and obtained his postgraduate qualifications in internal medicine MRCP (UK), clinical pathology DCP with distinction (University of London), haematology FRCPA (Australia) in 1978, 1979 and 1992 respectively. He was elected to fellowship FRCP (Edinburgh & Glasgow) in 1990 and FAM (Malaysia) in 1997. He became a Fellow of the Academy of Sciences of Malaysia in 2001 and a Founding Fellow of the Faculty of Sciences, RCPA (Australia) in 2011. He was conferred the honorific title, Professsor Emeritus, by UKM in 2007 and the honorary FAM (Singapore) by the Academy of Medicine of Singapore in 2011. Being an active researcher in basic sciences and clinical haematology, he has authored or co-authored over 400 publications and presentations. He has won numerous research grants and presentation awards. His current research interests are in blood disorders, dendritic cell-based vaccine for cancers, and the application of mesenchymal stem cell and induced pluripotent stem cells in regenerative medicine. He supervises a number of candidates for MSc and PhD in medical sciences. Currently he serves as the President of the College of the Pathologists, Academy of Medicine of Malaysia, the Vice-President of the National Cancer Council (MAKNA), the Country Representative to the World Association of Pathology & Laboratory Medicine, and the Councillor for Malaysia in the Royal College of Pathologists of Australasia. He is married to Dr Boo Nem Yun, Professor of Paediatrics & Neonatology, Universiti Tunku Abdul Rahman (UTAR).



CHEONG SOON KENG MB BS DCP MRCP FRCP FRCPE FRCPA FAMM FASc FAMS (Hons) FFScRCPA



PHILLIP STUART EBRALL BAppSc (Chiropractic) Grad Cert Tert Learning & Teaching PhD

Professor Ebrall is currently an Adjunct Professor, Faculty of Medicine, IMU from 2008. He is also an External examiner for BSc (Hons) in Chiropractic. He provided assistance to establish the chiropractic programme in the IMU by curriculum development and Government approvals. Presently he is developing the curriculum for the Master of Chiropractic 'houseman' programme to commence in 2014. After qualifying as a chiropractor in 1989, he obtained his PhD in 2000 for the thesis Chiropractic and male adolescent low back pain: a Victorian perspective, and subsequently in 2007 the Graduate Certificate in Tertiary Learning and Teaching. He has been an academic chiropractor since January 1990, and held the positions of Head of Discipline (RMIT University) 2002 to 2010. Associate Professor of Chiropractic (RMIT University) 2008: and Professor of Chiropractic (Central Oueensland University), August 2010. Professor Ebrall has been actively involved in professional and extracurricular activities. Phillip serves the Australian chiropractic profession as an elected director of the national board of the Chiropractors' Association of Australia. He is an experienced expert witness and chairs two Human Research Ethics Committees, one for a multi-campus hospital network in Melbourne, the second for Central Queensland University. He is Assistant Editor of the Chiropractic Journal of Australia, a member of the editorial board of several international journals relevant to chiropractic, and is a founding member of the Australasian College of Chiropractors and of the Consortium of Chiropractic Institutions Australasia. Phillip is a frequent visitor to Japan where he serves as Education Advisor to the Tokyo College of Chiropractic. Phillip's research includes practice-based descriptive clinical investigation into the nature of chiropractic practice in various cultures, and developing new approaches to the delivery of clinical education and assessment. He has successfully discharged a number of small research grants and has completed five higher degree research students. His honours and awards included the Meritorious Service Award, 2010 (Chiropractors Association of Australia, Victoria); Outstanding contribution to the chiropractic literature, 2008 (Editorial Board, Chiropractic Journal of Australia); Chiropractor of the Year, 2007 (Chiropractors Association of Australia, National); Outstanding contribution to the chiropractic literature, 2006 (Editorial Board, Chiropractic Journal of Australia); Outstanding contribution to the chiropractic literature, 1992 (Editorial Board, Chiropractic Journal of Australia); and Research Fellow, Foundation for Chiropractic Education and Research (1993-95). Phillip enjoys family, friends, cooking and photography.



**SANJAY GARG**BPharm MPharm PhD MManagement

Professor Garg holds an honorary position as Professor in Pharmacy at IMU. He is active as Professor of Pharmaceutical Sciences at the University of South Australia, Adelaide. A pharmaceutical scientist and teacher with over two decades of research and teaching experience in conventional and novel drug delivery systems, regulatory affairs and management, Sanjay is passionate about teaching of these subjects as part of the job profiles and in assignments with pharmaceutical industry and international and national research organizations, He has actively managed all aspects of research, i.e., project conception, networking, funding applications, laboratory research, communication, administration, finance, human resources, intellectual property, technology transfers, and publications. With special interest and experience in management and administration, Sanjay has a successful track record of establishing and leading multimillion-dollar research programmes. After completing his PhD from National Institute of Immunology (India), Sanjay worked with the Programme for Topical Prevention of Conception and Disease (TOPCAD)

Rush University, Chicago (1995-1998) USA, developing novel microbicides compounds and formulations. A number of his patented formulations, including Acidform, have reached clinical stages and market. He established a highly active novel drug delivery laboratory at National Institute of Pharmaceutical Education and Research (NIPER, 1998-2003), India, focussing on microbicides, oral delivery, and regulatory training. During his tenure with the School of Pharmacy, University of Auckland, New Zealand (2003-2011), he established AnQual Good Laboratory Practices (GLP) compliant analytical laboratory. Through AnQual, he worked with a number of human and animal pharmaceutical, biotechnological, food, and complementary medicine companies through private and linkage grants. Acting as Deputy Head of the School, he extended his research into nanotechnology based anticancer drug delivery systems, extemporaneous compounding, colon targeted delivery of probiotics, conducting polymer implants, regulatory affairs, and health policy. Sanjay's research projects have been supported by Government. agencies (e.g. Contraception Research and Development Programme or CONRAD, USA; International Partnership for Microbicides or IPM, USA; Tertiary Education Commission or TEC, New Zealand), foundations, pharmaceutical companies, and venture capitalists. His research collaborations extend to USA, Brazil, India, Malaysia, and China and he is very keen to develop new links. With his research team, Sanjay has published 106 peer reviewed papers, 20 patents, 20 book chapters, edited four books, and completed technology transfers for six products. Sanjay would like to invite expressions of interest from interested collaborators, students, and industry.

Lam Jac Meng is currently an Adjunct Clinical Associate Professor with the School of Dentistry, International Medical University, Kuala Lumpur. He is a full-time endodontist with his own referral-based private practice in Kuala Lumpur and is also a part-time lecturer at the Dental Faculty of Universiti Kebangsaan Malaysia, Kuala Lumpur. He was previously a Clinical Lecturer in Endodontics with the Eastman Dental Institute, University College London from 1998-1999. He obtained his BDS from the National University of Singapore in 1991 and his MSc in Endodontics from the Eastman Dental Institute, University College London in 1998. He has been an active member of the Malaysian Endodontic Society since 2000 and served as its President from 2004-2009. He is also a reviewer for the Malaysian Dental Journal since 2001. He is married and looks forward to spending time with his young family. In his spare time, he enjoys reading, gardening and tinkering.



LAM JAC MENG
BDS MSc Endodontics



**LIM TECK ONN**MBCHB MRCP FRCP MMed

Dr Lim Teck Onn graduated with the MBCHB from the University of Glasgow and obtained the MRCP from UK, FRCP from Edinburgh and the Master of Medical Statistics from the University of Newcastle Australia. He was formerly a consultant nephrologist and director of the Clinical Research Centre Ministry of Health Malaysia. He is currently the senior partner in Yun Consulting, Stats & ClinData Consult, and serves as consultant to many companies in the Biotech/Pharmaceutical and Healthcare industry as well as to Government agencies in variety of areas including Medical product development & Healthcare research. Dr Lim has been a WHO Consultant for clinical research to China (TCM Research Institute Beijing 2002-2003), consultant on clinical research to the Aga Khan University (2005 and 2006). University Medical Centre HCM & MOH Vietnam (2007, 2008), Ministry of Health Brunei (2007, 2008), and the King Saud University College of Medicine Saudi Arabia (2009). His other appointments include as Adjunct Professor at IMU and subject editors for various medical journals. Throughout his career he has been active conducting clinical research and in establishing patient registries & clinical databases for healthcare statistics and performance measurement purposes. He has more than 60 research publications in reputable international journals. His paper entitled "Assessing Doctors' performance: Application of CUSUM technique in monitoring doctor's performance. International Journal of Quality in Health Care 2002; 14:251-8" was nominated as best paper published for the Peter Reizenstein Prize, a first for Malaysia in association with the journal.



HIROTAKA ONISHI MD MHPF

Hirohita Onishi, who was the previous Acting Head of Medical Education and Research Unit, served IMU from 2003 to 2005. He is currently an Adjunct Associate Professor in Medical Education at IMU. He graduated from Nara Medical University in 1992 with the MD and subsequently graduated from General Internal Medicine Residency in Tenri General Hospital in 1997 and University of Illinois at Chicago in 2002 with the MHPE. He has been involved in several professional and extracurricular activities that include being Board Member, Japan Society for Medical Education; Board Member, Japan Primary Care Association; Board Member, Japan Society for Instructional Systems in Health care; Editor in Chief, Japan Journal for Health Professional Development; and Editor of the Journal of Japan Primary Care Association, Medical Teacher, Korean Journal for Medical Education, and the Lao Medical Journal. His academic interests and areas of expertise are medical education, family medicine, and clinical reasoning. He appreciates the working experience he has had in IMU from 2003 to 2005. The progressive nature of IMU had been particularly stimulating to him.

Brent Powis is currently the Team Leader – Healthy Communities and Populations at the World Health Organization China Office. These include management areas of: Healthy Cities and Villages, Climate Change Adaptation Planning for Health, Drinking Water quality and Water Safety Plans as well as recent international initiatives in addressing road safety. Prior to this appointment he was the Director of the WHO Collaborating Centre (Environmental Health) and Associate Professor in the School of Natural Sciences, University of Western Sydney, Australia. As Director of the Centre from 1997-2012 he has been actively engaged in a range of long term WHO environmental health initiatives including strategic planning for the EHRC within IMR Malaysia. National Environmental Health Planning in Vietnam. Malaysia. Palau and China as well as specific research and development projects in areas such as water, air and groundwater pollution and health, climate change and health as well as supporting ASEAN in the assessment and management of emerging and re-emerging diseases and the relationship to tourism. He obtained his PhD from the Macquarie University in Sydney in 2000, in environmental health policy development, MSc Marine Ecology from the University of N.S.W. in 1975, and honours degree in Zoology and Entomology at the same university in 1973. As an academic for over 30 years he has been responsible for academic leadership occupying positions such as Post graduate Coordinator, Head of School and Associate Dean within Hawkesbury Agricultural College, Hawkesbury College of Advanced Education and the University of Western Sydney. He has designed and presented undergraduate and postgraduate university programmes throughout the Western Pacific. As an academic researcher his focus has been on delivery of benefit to the host nation within an action research framework. This has resulted in dissemination within a range of journals and international conferences. He has two sons both accomplished musicians. His leisure activities include dancing the tango, dragon boating and hiking.



**BRENT POWIS** BSc(Hons) MSc PhD

Currently, Ray Wilks is semi-retired and resides in Melbourne, Australia. He holds the honorary positions of Adjunct Professor of Psychology at the IMU, Senior Associate at the RMIT University. Australia and Chair of the Programme Advisory Committee in the Division of Psychology at the RMIT University, Australia. He obtained a Trained Primary Teachers Certificate from RMIT University in 1968, a Bachelor of Arts degree from Monash University in 1979, a Graduate Diploma in Applied Child Psychology from RMIT University in 1982, a Master of Arts Degree (Psychology) from Deakin University in 1988, and a PhD (Psychology) degree from RMIT University in 1997. He has held professional appointments as a Primary School Teacher, an Educational Research Officer, a School Psychologist, a psychologist in private practice and has lectured at universities for over 20 years. In the university sector he has held positions of programme co-ordinator for Psychology Honours, Masters and Doctoral programmes in Educational & Developmental Psychology and in Clinical Psychology, Psychology Clinic Director, Chair of Singapore's Learning Capital Institute Academic Advisory Committee, and Head of Department in two universities, the most recent being at the IMU. He is a member of a number of professional organisations including the Australian Psychological Society, and is a life member of the Australian College of Education. Ray has held senior management positions with key psychology organisations including three years as the President of the Australian Association of Cognitive and Behaviour Therapy, and six years as the College of Clinical Psychology's representative on the Australian Psychological Society's national accreditation committee. More recently he co-founded the Heads of Malaysian University



**RAYMOND WILKS** TPTC BA GradDipAppChPsych MA PhD MAPS MACE

Psychology Departments Council. His research has investigated parent/adolescent conflict, adolescent obesity, parent training, and a range of issues in educational psychology. He has published and presented over 160 scientific papers. His personal interests include travel, reading, architecture, cooking, and listening to music.



DAVID FRANCIS WILSON BDS MDS(HONS) FFOP(RCPA)

David is a Visiting Professor at IMU. Currently he is the Head of School of Dentistry & Health Sciences, Charles Sturt University, Australia. Formerly he held the post of Professor of Oral & Maxillofacial Pathology, School of Dentistry, International Medical University, Kuala Lumpur, Malaysia. His previous academic posts have been held in the Middle East (United Arab Emirates and Saudi Arabia), Australia (University of Adelaide) and in Canada (Universities of Manitoba and Saskatchewan). A dentistry graduate of the University of Otago New Zealand, David has approximately 30 years of academic undergraduate and postgraduate teaching experience in oral pathology. Academic activities have been underpinned by active and ongoing specialist diagnostic oral histopathology practice and research. He has held various senior academic administrative posts in Universities around the world and has had extensive involvement with professional dental and medical bodies in the contexts of academic-profession interactions, committee roles and continuing education. Research activities and interests have included the areas of oral cancer, the temporomandibular joint, oral diseases and forensic odontology. These activities are reflected in publications and in conference and continuing education presentations. Educational development interests include the application of digital technology in the biomedical sciences.

## ASSOCIATE PROFESSORS AND MANAGERS

Muneer Gohar Babar is currently an Associate Professor in the Division of Community, Children Dentistry and Orthodontics at the School of Dentistry, International Medical University (IMU), Kuala Lumpur. He also holds the position of programme coordinator/director for Bachelor of Dental Surgery Programme in IMU. He is the Deputy Editor-in-Chief of the International e-Journal for Science. Medicine and Education. He is a fellow of the Center for Medical Education in IMU. Before joining IMU Dr Muneer was working as an Assistant Professor and Head of Department Community and Preventive Dentistry at Sardar Begum Dental College, Gandhara University, Pakistan. He was running his own private practice in Peshawar, Pakistan. He obtained his BDS from Khyber College of Dentistry, University of Peshawar (Pakistan) in 1996, and the MDSc in Conservative Dentistry from University of Malaya in 2000. He did his Post Graduate Diploma in Health Planning and Management from University of Peshawar (Pakistan) in 2003 and his Master of Public Health in 2006 from Gandhara University (Pakistan). He was the President of Pakistan Doctors Association (Dentistry) from 1996 – 1998 and a member of the Technical committee on Dentistry, Health Regulatory Authority, Government of Khyber Pakhtunkhwa (Pakistan) from 2008 - 2009. He is also a member of the Master Trainers for the Learning & Teaching Courses to be organized by the Higher Education Leadership Academy (AKEPT), a division of the Ministry of Higher Education Malaysia 2009 – till date. His fields of interest include Medical/Dental Education, Students Stress, Complementary and Alternative dentistry/medicine, eLearning, Properties of restorative dental materials especially fluoride releasing restorative materials and Dental Ethics. Dr Muneer is married to Sophia Kamal, an early childhood education and special education specialist. In his leisure time he reads books and enjoys traveling and exploring new places and food corners.



MUNEER GOHAR BABAR BDS MDSc DHP&M MPH

Doreen Cheah is currently the Head of Information Technology Services at International Medical University in Kuala Lumpur. She has more than 25 years of IT experience, spanning across multinationals in the FMCG, retail, stockbroking and oil & gas industries. She holds a Bachelor of Science, majoring in Computer Science with a minor in Business Administration, from Simon Fraser University, Vancouver, Canada (1985). Prior to joining IMU, Doreen was an Information Services Consultant at MindWorks Leadership Development and Consultancy Services, Singapore (2008), Vice President, Information Services at Scomi Group Bhd, Kuala Lumpur (2007); Information Services Director at Dumex Shared Services, Selangor (1997 to 2007) and held various other IS management and analyst roles at F J Benjamin & Sons Sdn Bhd, Maybank Securities and Java Haricon Construction Sdn Bhd. In her regional role as senior IT management, Doreen travelled extensively across Asia, Australasia and Europe on enterprise-wide system projects as well as strategic transformation programs. She was also instrumental in establishing a regional SAP hub for the Dumex group of businesses. Doreen had volunteered her services with several organizations such as The Shelter Home, Petaling Java, Country Heights Charity



**DOREEN CHEAH**BSc

Shop and AWAM, a non-governmental organization for women. She is an animal lover and has two Alsatian dogs as pets which she takes for walks during weekends. She enjoys travelling to experience different cultures, food and to view unique architecture and heritage buildings. Her other leisure activities include reading thriller fiction and keeping a healthy lifestyle.



CHEN YU SUI BSc(Hons) PhD

Chen Yu Sui has been a lecturer in IMU for 15 years since 1997. She has been appointed as course co-ordinators in both Medical and Pharmacy programmes. Her interest in education lies mainly in Problem-based Learning and was the PBL-coordinator for Medical Programme for eight years. Besides this, she played vital roles in curriculum design for certain modules in BPharm, Biomedical Science and Chinese Medicine & Acupuncture programmes. She has also successfully implemented Powerlab™ in the teaching of Physiology and Pharmacology in Medicine, Pharmacy and Biomedical Science programmes. She was then appointed to be the Programme co-ordinator for Biomedical Science from 2009 to 2012. Chen was also the advisor for the Chinese Cultural club for many years. Being the programme co-ordinator and the club advisor, she has developed interest in students' experience in both academic and non-academic areas. She was awarded the Best Lecturer by the students in 2010. She is now the Associate Dean of Student Services tasked to enrich student experience in IMU. Her main area of interest in research is medical education and herbal treatment for arthritis. Currently she has 17 publications and 40 presentation papers.



CHO MIN NAING MB BS MMedSc MSc PhD

Dr Cho Min Naing obtained her MBBS and MMedSc in Preventive and Tropical Medicine from the University of Medicine, Yangon, Myanmar. She then continued her studies and obtained MSc in Health economics from Chulalongkorn University, Bangkok, Thailand and PhD from University of Queensland, Brisbane, Australia. She was awarded Fellowship of Royal College of Physician in 2008. By training and by practice, she is a medical malariologist. Her main field of interest is in malaria case management. During her spare time, she enjoys home-gardening, and reading novels and poetry.

Roberto Cumaraswamy is currently the Head of Marketing at IMU. Prior to joining IMU in February 2012, Roberto enjoyed an extensive 13 year career in marketing across a range of companies and industries. His most recent positions were in lead consumer & product marketing roles for L'Oreal Malaysia, Celcom Axiata, XL Axiata (Indonesia) and finally as country head for Social Media agency, Vocanic. He obtained his BA in Archaeology & Ancient History from the University of Exeter (UK) in 1995. He then went on to pursue a postgraduate diploma in Business & Management at Exeter Business School (UK) in 1997. Roberto enjoys a range of leisure activities during his spare time from sports to gaming to socializing with friends over a good meal. He lives in Solaris Mon Kiara (KL) with his two lovable pets: Marmite the dog and Vader the cat



**ROBERTO S CUMARASWAMY** 

Daw Khin Win is currently Associate Professor at the Faculty of Medicine, International Medical University in Kuala Lumpur. Prior to this appointment she was the Professor of Anatomy, Defense Services Medical Academy (DSMA) from 1998 – 2006. Before joining DSMA she served in the various medical and dental universities in Myanmar since 1969. She obtained her MBBS from the University of Medicine 2, Yangon, Myanmar in 1968, MMedSc in Anatomy from the University of Medicine 1, Yangon, Myanmar in 1974, and obtained PhD from the University of London in 1991. She acted as the Chairperson, Postgraduate Board of Studies (Anatomy) DSMA, from 1996 - 2006, the member of the Academic Boards of Universities of Medicine (1), (2) and Mandalay from 1974 to 2006 and the Member, Postgraduate Board of Studies (Anatomy) Universities of Medicine (1), (2) & Mandalay (since 1978 to 2006). She also served as a member in Medical Education Committees, Medical Ethical and Research Committees and Best Research Paper Awarding Committees from 1996 to 2006 in Medical Universities in Myanmar. She is also a member of the Myanmar Medical Association and Myanmar Medical Council since 1969. Her fields of interest include Anatomical Sciences including Developmental Anatomy. She has supervised and trained many MMedSc and PhD students in Myanmar and has published and presented many scientific papers. She is married to Kyaw Myint, retired Director General, Ministry of Industries 1, Union of Myanmar, Her leisure activities include meditation, reading and gardening.



**DAW KHIN WIN**MB BS MMedSc (Yangon) PhD (Lond)

Associate Professor Hanan Omar joined IMU on December 4th 2008 and is attached to the School of Dentistry. AP Hanan Omar who is from Egypt, received her BDS (Faculty of Oral and Dental Medicine – Cairo University, Egypt ) in 1995, her MSc in restorative dentistry (Faculty of Dentistry – Suez Canal University. Ismailia, Egypt ) in 2002 and her PhD in crown and bridge (Joint programme; Faculty of Dentistry – Suez Canal University, Ismailia, Egypt / School of Dentistry – University of Toronto, Canada ) in 2006. Prior to joining IMU in the capacity of a senior lecturer, AP Hanan had worked in Egypt as a lecturer and an associate lecturer since 1997. Her specific area of research is esthetic dentistry. She has done research on CAD/CAM systems and esthetic restorations and has several publications to her credit in local and international journals. In her spare time, she enjoys reading, exercising, playing tennis and squash, shopping, travelling and spending time with family.



HANAN A K OMAR BDS MSc PhD



MICHAEL JON HUBKA BS DC FCCS(C)

Michael Jon Hubka is currently an Associate Professor of the Faculty of Medicine and Health of the International Medical University in Kuala Lumpur. He is also head of the IMU Chiropractic Center. Before joining the International Medical University he practiced in Pasadena, California for 24 years, and was an Associate Professor of the Southern California University of Health Sciences. He completed a residency in the Department of Orthopaedic Surgery at the Royal University Hospital, University of Saskatchewan, Canada. He is a Fellow of the College of Chiropractic Sciences (Canada). His field of interest includes identifying subclasses of mechanical spine pain, and addressing specific spine deficits with therapy most likely to improve function. He has published and presented over 20 scientific papers, including several book chapters. He is on the board of directors for the West Hartford Group, a scholarly, clinical practice think tank dedicated to the acquisition of the social, cultural and professional authority for the chiropractic profession where the Doctor of Chiropractic serves within the mainstream health delivery system as a non-surgical primary spine care provider dedicated to clinical excellence, intellectual honesty, professional integrity, ethical practice and the delivery of patient-centered, patientsafe, evidence-influenced care and best practice. He is married to Dr. Jenna Marie Lemon. His leisure activities include running, hiking, cycling, and MovNat outdoor fitness exercise.



**KANG YEW BENG**BSc (Hons) PhD

Kang Yew Beng is currently the Associate Director of E-Learning, a role that he assumed since September 2011. He is an Associate Professor in the Department of Pharmaceutical Chemistry, and previously held the positions of Associate Dean for the School of Pharmacy and Health Sciences (2009 – 2011), the Head of the Department of Pharmaceutical Chemistry (2008 – 2009), and Programme Coordinator for the BPharm (Hons) (2005 – 2008). Before joining the International Medical University, he spent almost seven years in the Malaysian Palm Oil Board, MPOB (previously known as PORIM – Palm Oil Research Institute of Malaysia). During this period, his role as a Senior Research Officer in the Surfactants and the Specialty Synthesis group brought him to research collaborations with many partners. The time spent in research in the MPOB was preceded by a short stint in Petronas Research and Scientific Services. He obtained his undergraduate degree in chemistry and graduated with honours in the area of Organic Chemistry from the University of Western Australia in 1990, and completed his PhD in the area of Inorganic Chemistry from the Australian National University in 1994. A year of post-doctoral experience was spent in the Université d'Ottawa after he completed his PhD. In his spare time, he enjoys visual arts, photography and puzzle games.

Dr Rumi Khajotia is a qualified Pulmonologist (Respiratory Physician) attached as an Associate Professor to the Department of Internal Medicine at the IMU since 2007. His interests encompass all aspects of Respiratory Medicine and Intensive Respiratory Care. He has publishing many papers in international peer-reviewed medical journals. He has completed his MBBS and MD degree examinations from the University of Mumbai, India, and the Facharzt degree in Respiratory Medicine from the University of Vienna, Austria.



RUMI KHAJOTIA MD

Dr Verasingam is currently the Associate Professor of Community Medicine at the Faculty of Medicine and Health. International Medical University in Kuala Lumpur. Before joining the International Medical University he was the Director and Epidemiologist of the National Public Health Laboratory Sungai Buloh, Communicable Diseases Division, and Ministry of Health, Malaysia. He obtained his BSc in Biochemistry from the University of Malaya in 1973, and MBBS from Grant Medical College, University of Bombay in 1980 and Master of Public Health in 1990 from the University of Malaya. He was appointed as a representative from Malaysia from 2003-2005 for Emerging Infectious Disease Programme (EID) for the ASEAN plus three regional groupings which was coordinated by the ASEAN Secretariat, Jakarta for developing a strategic framework for regional surveillance capacities. early warning and rapid response mechanisms for emerging infectious disease in the ASEAN region. During this period he was also a member of Asean Expert Group on Communicable Diseases (AEGCD). He was instrumental in developing and implementing the National Dengue Serotype Surveillance in 2004. During his tenure as the director of the National Public Health Laboratory, he served in the National Influenza Pandemic Planning Committee. He was appointed as Chief of Field Operations during the Japanese Encephalitis/Nipah Virus Outbreak in 1999 in Port Dickson to coordinate all control activities on the ground. During the many years in government service he has gained vast hands-on experience in public health management, disease surveillance and in the prevention and control of infectious disease outbreaks, notably cholera, typhoid malaria, dengue and Japanese encephalitis. He has written many protocols and developed guidelines on the above for the Ministry of Health. Furthermore he has published and presented numerous scientific papers. He was awarded the Excellent Service Awards by the Ministry of Health in 1993 and 1999. He received the Director-General's Quality Award for primary health care expanded scope programme in 1999. He was honoured with the Vocational Service Award by the Rotary International Malaysia in 2000 for his meritorious and outstanding service to the community. He was also conferred AMN by the Yang di Pertain Agong in the year 2000 and the Excellent Service Medal by the Yang di Petua Negeri, Negeri Sembilan in 2004. His fields of interest include vector borne diseases, outbreak control and health care to marginalized population. In his spare time he delves into English literature and Western philosophy.



**VERASINGAM KUMARASAMY**BSc MB BS MPh



**KYAN AUNG**MB BS MMedSc PhD

Kyan Aung is currently Associate Professor of Pharmacology, in the Division of Pathology, International Medical University, Kuala Lumpur. Previously he was Professor and Head of Department of Pharmacology, Defence Services Medical Academy (DSMA), Yangon, Myanmar, until his retirement in 2008. He obtained MBBS from the Institute of Medicine, Mandalay (now University of Medicine, Mandalay) in August 1972, and MMedSc (Pharmacology) in April 1982 from the same University. He then went to Guy's Hospital, London, UK for further study in 1987. After completion of research elucidating the effect of drugs and monoclonal antibodies on adhesion of leukocytes and endothelial cells, he was admitted to the degree of PhD in January 1991. Dr. Kyan Aung became a Demonstrator in the Department of Pharmacology, IMM, in 1974 and transferred to Institute of Medicine (2), Yangon as an Assistant Lecturer in 1984. To fill up the post in DSMA he was called to serve as a Lecturer and eventually appointed as the Professor and Head, Department of Pharmacology, in 1999. The post also required him to manage teaching Pharmacology to undergraduate Nursing and Pharmacy students. As there was a need for more medical pharmacologists in the DSMA, he established a post-graduate course on Master of Medical Science (MMedSc) in Pharmacology. During his tenure as Head of Pharmacology, he had guided many post-graduate students in their research work for theses. He was the President of the Pharmacological Society, Myanmar Medical Association from 2001-2003. As a doctor, he is a lifelong member of the Myanmar Medical Association, and the Support Group for Elderly Doctors (SGED). In 2002, he became an individual member of the Asia Pacific Association of Asthma, Allergy and Clinical Immunology (APAAACI) and has attended biannual meetings of the association ever since. His fields of interest include the pharmacology of allergy, inflammation and immune response. He is married to Than Than Yin, BSc (Physics), who had managed her own private business until 2008, and is now in Kuala Lumpur taking care of their two grandchildren. His leisure time is spent on bringing up these young children, and surfing the Internet.



**LEONG CHEE ONN**PhD

Dr Leong, who is an Associate Professor in the School of Pharmacy and Health Sciences and Department of Life Sciences, has conducted multi-year research focused on drug target discovery, novel molecules development through preclinical and clinical trials, and biomarkers development for diagnosis and treatment of refractory breast cancers. He has published extensively in high impact journals, including Nature Cell Biology, Cancer Cell, PNAS, Cancer Research etc. He has received numerous international awards including the FMD Fellowship (USA), ORS Award (UK) and the IBMS President's Award (UK). He was a Senior Research Fellow at the Harvard Medical School and Massachusetts General Hospital, Boston, USA and is presently an Associate Professor at IMU. Dr Leong and his team are broadly interested in how genetic abnormalities within cancer cells influence their biology, and how that biology can in turn be exploited to therapeutic advantage. Through extensive international collaborations, the team addresses these questions through basic research studies of key tumour cell signalling pathways including p53. FGFR, MAPK, and AKT. This work is complemented by genetic analysis of patient tumour samples conducted through our companion laboratories. Finally, the discoveries from the team in the basic research are being translated into on-going clinical trials which seek to identify predictive markers for response to specific therapeutic agents. Our ability to work at the interface of basic tumour biology and therapeutic application is strongly supported by the strong research culture and infrastructure at the IMU Cancer Research Center.

Patricia K C Lim joined the International Medical University as an Associate Professor attached to Pathology Unit, Faculty of Medicine and Health, on 16 February 2011. She received her BSc Hons (1976), Dip Ed (1977), MSc (1984) and PhD (1992) from University of Malaya, Kuala Lumpur. Prior to joining IMU, she worked in the Institute for Medical Research (IMR) for 26 years where she served in various capacities, culminating in her appointment as Head, Molecular Pathology Unit in 1996 till 2004 when she opted for optional retirement. Her research at IMR involved several disciplines including malaria, filariasis, biotechnology, molecular pathology and cancer research and this has resulted in several publications in local and international iournals. She was awarded the excellent service awards by the Ministry of Health Malaysia in 1994 and 1996 and for her research involving development of new diagnostic assays for malaria and typhoid, she and her research team have been awarded four gold medals and 1 silver medal. Subsequently she spent 6 years in the industry, as a Chief Scientific Officer in a bio-diagnostic company for 4 years (2004-2008) and as Senior Vice- President (R&D and Lab Services) in a vaccine company for 2 years (2009-2010). Her specific areas of teaching are medical parasitology and tropical medicine. She is the current Editor-in-chief for the International e-Journal of Science, Medicine and Education and has been a reviewer for Southeast Asian Journal of Tropical Medicine and Public Health and Tropical Biomedicine. She is also currently a member of the Cluster Working Group on Human Capital, Malaysian Biotechnology Corporation. She was a former Editor of the Southeast Asian Journal of Tropical Medicine and Public Health. While working in IMR, she served as Joint Coordinator of the Medical Biotechnology Cooperative Centre under the National Biotechnology Directorate, Ministry of Science, Technology and Innovation Malaysia from 1997-2004 and as Director of the IMR-JICA Third Country Training Courses on Biotechnological Techniques in Tropical Medicine from 1996-2000. She has also contributed her expertise to the World Health Organization as a resource person for workshops on filariasis and as a Short Term Visiting Expert to China on malaria diagnosis.



**PATRICIA KIM CHOOI LIM** BSc (Hons) Dip Ed MSc PhD

Lum Siew Kheong joined IMU as Associate Professor of Surgery in Mar 1, 2011 and became the Head of the Department of Surgery in Feb 2012. He obtained his MBBS (Malaya) in 1976 and his FRCS (Edinburgh) in 1981. He was elected member of the Academy of Medicine of Malaysia in 1983, Fellow of the Academy of Medicine of Malaysia in 1997, FAMS (Hon) Singapore in 2007, FACS in 2009 and FRACS (Hon) in 2012. After his graduation from the University of Malaya, he trained at the Royal Adelaide Hospital, the Flinders Medical Centre, South Australia, Repatriation General Hospital (Adelaide), Hammersmith Hospital (London) and the West Fife Hospital (Scotland) before returning to Malaysia. He trained the staff and began surgical services in Kajang Hospital in 1983 as its Founder Surgeon. Prior to joining IMU, he was in private practice and visiting consultant general surgeon in Pantai Cheras hospital, Tung Shin hospital and Kajang Medical Centre. He was President of the College of Surgeons. Academy of Medicine of Malaysia from 2007 -2010. During his tenure as President, he established the Johns Hopkins Travelling fellowship to the College of Surgeons Annual scientific meeting and introduced the Advanced Trauma Life Support (ATLS) course of the American College of Surgeons to Malaysia. He is the current ATLS Chair for Malaysia. He is an examiner for the MS (Gen Surgery) of the National Conjoint Board of Surgery and a member of the credentialing committee for General Surgery of the National Specialist Register, Malaysia. He was appointed by the Minister of Health and served as Chairman of the Board of Visitors in Kajang hospital from 2001-2010. In 1985, he received the



**LUM SIEW KHEONG**MBBS FRCS Ed FACS FRACS FAMS
FAMM

Vocational Service Award of the Rotary Club of Kajang for "personal contribution and selfless dedication to the improvement of medical services in Kajang Hospital." In 1986 he was awarded the Silver Jubilee medal by DYMM Sultan of Selangor for being the most outstanding civil servant in the District. His wife is a pharmacist and they have 3 children – a vascular surgeon and two accountants. In his spare time he enjoys reading, exercising, travelling and spending time with family.



MALA MAUNG
MB BS DBact DLSHTM PhD FRCP Cert
E-Moderation MMAMS FRSTMH FACTM

Mala Maung obtained her M.B.B.S and postgraduate (Microbiology) degrees from the University of Medicine (1), Yangon; DLSHTM and PhD degrees from the London School of Hygiene & Tropical Medicine, London University, and FRCP from the Royal College of Physicians, Edinburgh. She joined the International Medical University in 2001 as an Associate Professor of Microbiology. She was appointed as Head of Pathology Division from 2001 to 2004, and as Head of Allied Health Sciences from 2004-2006. Administrative and academic positions prior to joining IMU include Professor/Head of Microbiology Department, University of Medicine (1), Yangon; Consultant Clinical Microbiologist, Yangon General Hospital; and The Rector, University of Nursing, Yangon. While at the University of Medicine (1), she pioneered the immunofluorescent diagnostic establishment, and developed the MSc and PhD programmes in the field of Microbiology. In the field of Medical Education, she organised National and WHO Workshops/Seminars as the Secretary and later Vice-Chairperson/Chairperson of the Medical Education Unit. While serving as the Rector at the University of Nursing, she was also Project Manager for the WHO Community Health Nursing Programme, and helped secure WHO grants to develop community health nursing in Myanmar. She is a Member of the Myanmar Academy of Medical Science, Member of Myanmar Medical Council, Fellow of the Royal Society of Tropical Medicine & Hygiene, U.K., and Fellow of the Australasian College of Tropical Medicine. She has been/was a Member/Vice President of various organisations in Myanmar, including the Myanmar Medical Association (MMA), MMA Microbiology Society, MMA Women Society, Red Cross Society, Writer and Journalist Association, and the Editorial Board of Myanmar Health Sciences Research Journal, and in Malaysia, Malaysian Medical Association, Honours and awards conferred in Myanmar include awards for Civil Service, Outstanding Civil Service, Outstanding Service in the Social Field, and Outstanding Service in the Administrative Field; and the WHO/ UAE Health Foundation Prize – on behalf of the University of Nursing. She is married to Dr. Kyaw Tin, a retired Public Health Specialist with the Department of Health, Myanmar, a Temporary Adviser to the World Health Organisation, and a WHO/STC for the WPRO. They have two married sons and two grandchildren.

Dr Nilesh Kumar Mitra joined the International Medical University in December 2004. Before joining IMU, he worked as Associate Professor of Anatomy in Chhattisgarh Institute of Medical Science and MGM Medical College in India. He has also served UNDP as Assistant Professor in Anatomy at the Ministry of Education, Ethiopia. His experiences also included a short stint as Research Officer in the Clinical Anatomy Department of Sultan Qaboos University at Sultanate of Oman. Soon after joining IMU Nilesh took over the coordination of the Musculoskeletal system. He was the pioneer among the module coordinators in the medical program to implement the 'Curriculum map' to prevent overlap of the contents among lectures, PBL and Medical Museum sessions. He also initiated the structured 'Medical Museum Sessions' with lesson plans. His contribution as Museum Coordinator in IMU was hugely applauded by the students when a plastinated cadaver with several plastinated specimens was installed in 2010. Since 2006, he has initiated a series of innovative research projects to evaluate the neurotoxic effects of dermal exposure to low doses of organophosphate pesticides. He used biochemical, neurohistological and immunohistochemical methods for this evaluation. The projects were fruitful in producing many articles in reputed international medical journals. He was also invited to write a chapter in a textbook 'Pesticides in the Modern World' published from Poland. In 2006, he was awarded the 'Liza Chacko Memorial Award' for best published article in the Journal of Anatomical Society of India on neuroanatomy. In 2009 he was promoted to Associate Professor. In the same year he was also appointed as Curriculum Coordinator of the Phase 1 Medical Programme of IMU. His passion for 'curriculum and assessment' forced him to complete the Masters in Education in 2010. He has contributed a lot in implementing IMU's new Medical Curriculum in 2011 that initiates clinical skills training from the foundation module.



NILESH KUMAR MITRA MBB MS (Anatomy) MEd

Nazimah Idris is currently the Head of Department of Obstetrics & Gynecology, IMU Clinical School and Associate Professor of O&G at the School of Medicine, International Medical University in Kuala Lumpur. Prior to this appointment she was the Consultant Obstetrician and Gynecologist in the Ministry of Health Malaysia. She obtained her BMedSc from Universiti Kebangsaan Malaysia in 1989, MD in 1992 and Masters in O&G in 1999 where she received the Gold Medal award. She had further training in the field of Maternal and Fetal Medicine which included a year of fellowship in Mater Mothers Hospital in Brisbane, Queensland. She successfully completed the Postgraduate Certificate in Medical Education with the University in Dundee in 2011 and is presently pursuing the Masters in Medical Education. She was and is still very actively involved in organizing and speaking at medical and scientific conferences both locally and internationally. She is a Council member of the Obstetrical and Gynecological Society of Malaysia, member of the Perinatal Society of Malaysia and a life member of the Malaysian Medical Association, Malaysia Society of Ultrasound of Medicine and Malaysian Menopause Society. Other past appointments include being a member of Medical Education and Continuous Professional Development Committees in Ministry of Health hospitals. Her fields of interest include adolescent reproductive health and fetal medicine particularly the fetal growth disorders. She has presented and published medical and scientific papers in various conferences and publications, both locally and internationally. She has received several awards to date, including the Excellent Service Award from the Ministry of Health and several First Prize Awards for her scientific paper presentations. She is happily married to Dr Amran Ahmad, a marathon runner and an anaesthesiologist. Together, they have 5 children and a huge collection of medical jokes.



NAZIMAH IDRIS BMedSc MD MOG PGCertMedEd



TONY KOCK WAI NG BSc. BSc(Hons). MCH(Nutr). PhD

Tony Ng Kock Wai is currently Associate Professor at the Department of Nutrition and Dietetics, International Medical University (IMU) in Kuala Lumpur. Prior to joining the IMU on 1 January 2007, he was a research officer with the Institute for Medical Research (IMR) for 35 years and retired in 2004 with "Gred Khas C" as Head of the Cardiovascular, Diabetes and Nutrition Research Centre. For his long distinguished service with the Government, he was awarded the Ahli Mangku Negara (AMN) by the Agong in 1996. He obtained his BSc (Biochemistry, Physiology & Botany) and BSc Honours (Biochemistry) degrees from the University of Malaya in 1971 and 1972, respectively. He went on and completed his Master of Community Health (Nutrition) in 1980 at the University of Oueensland, Australia, Later in 1988, he obtained his PhD degree from the University of Malaya with a research thesis in the area of "Nutritional and biochemical studies on palm oil as a dietary fat". Tony Ng was Council Member of the Nutrition Society of Malaysia (NSM) from 1987-2012, during which time he served as its Honorary Secretary from 1994-2002. He is also Associate Member of the Institute of Chemistry, Malaysia since 1978. At the IMU, Tony Ng's innovations include a nutrient calculator with added values called "DietPLUS" and a "T&Z Calorie Counter" in excel format which calculates basal metabolic rate (BMR), physical activity level (PAL) and total energy expenditure (TEE) of an individual based on recall of the previous day's physical activities. He obtained his Good Clinical Practice certificate at IMU in 2008 which would go a long way to help add to his current publications of about 100 scientific articles plus chapters in books. His areas of expertise include fats and oils in human nutrition, cardiovascular nutrition, Codex regulatory aspects, nutritional guidelines, and recommended nutrient intakes. He spends much time in the evenings watching EPL and in the weekend, at an old folk's karaoke belting out oldies of the 1960s and 70s.



**NYUNT WAI**MB BS MMedSc PhD

Nyunt Wai, currently an Associate Professor at the Faculty of Medicine, International Medical University (IMU) in Kuala Lumpur, has been involved in teaching of Physiology to medical and health science students since 1972. Prior to joining IMU, he was the Professor and Head of Department of Physiology, Institute of Medicine 1, Yangon, Myanmar from 1995- 2006. It is in this capacity that he served in various positions: among others, he was the President, Physiology and Biochemistry Society, Myanmar Medical Association, the Editor, Myanmar Medical Journal, and member, National Academy of Medical Science, Myanmar. He obtained his MBBS from the Institute of Medicine 2, Yangon in 1970, Masters in Medical Science (Physiology) from the Institute of Medicine 1, Yangon in 1974, and PhD from the Faculty of Medicine, the University of London in 1990. The Masters thesis was on reproductive endocrinology (placental morphology and functions in Myanmar women) and the doctorate thesis was on cardiovascular endocrinology (factors influencing cardiovascular actions of vasopressin in rats). While reading for his PhD, he participated in small group teaching of medical students in Charing Cross and Westminster Medical School, University of London. He also studied medical education in Adelaide University for a month in 2003. He attended workshops in Scientific Communication and Peer Review in Biomedical publication, conducted by editors of the British Medical Journal and the Journal of the American Medical Association in New Delhi in 1996 and in Chicago in 2005, respectively. His fields of interest include medical education and publication, with a focus on application of basic sciences in healthy living and managing disease in general and combating

hypertension, obesity and diabetes mellitus, the three public health scourges, in particular. His recent interest is in disseminating Basic Life Support techniques to as many people as possible. He is married, with one son and two daughters. His leisure activities include reading, writing, thinking, and watching football matches late in the night.

Joachim Perera is an anatomist and a general surgeon currently attached to the Human Biology division at the Faculty of Medicine and Health, International Medical University in Kuala Lumpur. He is also the Deputy Director (quality), IMU-Center for Education. Before joining the International Medical University in 2006, he was the Head, Department of Anatomy, Faculty of Medicine, University of Colombo, Sri Lanka. He obtained his MBBS in 1976 and MS (General Surgery) in 1983 from the University of Colombo. He was awarded a Commonwealth Fellowship in 1984 and worked in the Department of Surgery, University of Newcastle upon Tyne, UK for a period of one year. He underwent training in curriculum design and evaluation in 1992 at the Medical Education Unit, University of New South Wales, Australia. He was awarded an honorary fellowship by the College of Surgeons, Sri Lanka for his contribution to post-graduation education in surgery. He joined the Faculty of Medicine, Colombo in 1978 and held numerous posts. He was the senior student counselor and the Director of the Medical Education and Research Center. He obtained the 25 years long service award from the University of Colombo in 2006. He worked as a Surgeon in the Trauma Unit of the National Hospital, Colombo Sri Lanka from 1986 to 1996. He is a member of the Sri Lanka Medical Association, College of Surgeons -Sri Lanka, Sri Lanka Association for the Advancement of Science and the American Association of Clinical Anatomists. His fields of interest include medical education and clinical anatomy and he has published and presented over 50 scientific papers. He is married to Professor Jennifer Perera, Professor of Medical Microbiology at the University of Colombo. His leisure activities include singing, dancing and reading.



JOACHIM PERERA MBBS (UCO) MS (UCO) FSCS (SL)

Mallikarjuna Rao P is currently the Head of Department of Pharmaceutical Chemistry, Programme Coordinator for MPharm Programme and Associate Professor at the Faculty of Medicine and Health, International Medical University in Kuala Lumpur. Before joining the International Medical University he was the Principal of Annamacharya College of Pharmacy in India. He obtained his PhD in Pharmaceutical Chemistry from the Andhra University, India in 2000. He is a member of the American Chemical Society, Society of Medicinal Plant and Natural Product Research, American Society of Pharmacognosy, Indian Pharmacy Council and Association of Pharmaceutical Teachers of India. He is a member of editorial committees of numerous journals. His fields of interest include natural products and he has published and presented over 50 scientific papers. There are two international patents on herbomineral formulations to his credit. He is married to Madhu Katyayani, Associate Professor at the MAHSA University College. His leisure activities include watching sports and spending time with his children.



MALLIKARJUNA RAO PICHIKA BPharm MPharm PhD



MOTI LAL TIRATH RAM
MB BS DTCH MRCP

Moti Lal Tirath Ram is currently an Associate Professor and Head of Paediatrics Department in the Clinical School, International Medical University. Prior to this appointment he was attached to the Department of Paediatrics, Faculty of Medicine, Universiti Kebangsaan Malaysia from 1973 till his retirement in 1999. He was Head of the Pediatric Department for 8 years-from 1990-1994 and 1995-1999. He obtained his MBBS from the University of Singapore in 1969, DTCH from University of Liverpool in 1977 and MRCP (UK) in 1978. He is a life member of the Malaysian Pediatric Association and was elected its President in 1993. His field of interest is Child Neurology and Child Development. He was Head of the Multiple Assessment Team" for children with disabilities at Hospital Kuala Lumpur for many years. He has also volunteered his services as an honorary doctor to the Spastic Children Association of Selangor and Federal Territory since 1994. He is married with two children and is an avid collector of old Hindi movies and old Hindi songs. He is also ardent cricket fan, particularly "Test Cricket".



GNANAJOTHY PONNUDURAI PhD MSc BSc

Gnanajothy Ponnudurai joined the International Medical University, Kuala Lumpur (IMU) on the 1st of Aug 1996. She is currently the Acting Associate Dean of Medical Sciences and Associate Professor of Biochemistry at the Faculty of Medicine and Health, IMU. Prior to this appointment she was the Programme Coordinator of Biomedical Science in IMU from 2007-2009. She was the project leader for the team that developed the outcome based curriculum for Biomedical Science, obtained provisional accreditation from MQA and implemented the programme in IMU. She was the coordinator of the Medical Foundation 1 course from 2002 – 2007. She is also the trainer for PBL facilitator training at IMU. She graduated with a BSc first class Hons in Biochemistry in 1998 and subsequently obtained her MSc in 1991 and PhD in 1995 from the University of Malaya. Her research interest is in the field of toxinology, specifically in the biochemical and immunological properties of snake venom, as well as in medical education. She has 40 publications and 40 presentations of scientific and medical education papers. She has been the secretary of the Malaysian Society on Toxinology since 1997. In her free time she enjoys listening to music.



**SETHU THAKACHY SUBHA**MBBS MS ENT Head & Neck Surgery

Sethu Thakachy Subha is currently the Associate Professor of ENT at the Faculty of Medicine and Health, International Medical University in Kuala Lumpur. Before joining the International Medical University she was the Associate Professor of ENT at the Faculty of Medicine and Health Sciences, University Putra Malaysia. She obtained her MBBS from the University of Kerala India in 1989 and MS in ENT Head & Neck Surgery from the University of Malaya in 2002. Her Fields of interest include head & neck tumors, sleep apnoea and rhinology and she has published and presented various papers. She is a life member of Malaysian Society of Head & Neck Surgeons. She is the Vice president of 'Persatuan Keturunan Malayalee Hulu Langat Selangor' which is involved in various cultural activities. Her leisure activities include dancing, gardening and reading.

Dr. Sharifah graduated from the University of Glasgow, Scotland with MBChB in 1994. She completed her junior clerkship training in Inverclyde Hospital, Greenock and Royal Infirmary Hospital, Glasgow, Scotland. Dr. Sulaiha returned to Malavsia in 1995 and worked in Kuala Terengganu Hospital, Terengganu in department of Surgery and Obstetrics & Gynaecology (O&G). She pursued her postgraduate training in O&G with UKM, Malaysia in 1998. While serving Kementerian Kesihatan Malaysia (KKM), she was actively involved in many QA researches and won medals at state and national level. She has completed three clinical audits which won prizes as 2nd runner up for oral presentation and best poster at national conferences. She completed her master programme in 2002 and awarded the gold medal in MOG (UKM) 2002. In 2002 she began working as an O&G Specialist in Hospital Tuanku Jaafar Seremban Negeri Sembilan and was responsible for setting up the urogynaecology service and postgraduate training for the medical officers. She won the 1st prize at the State QA convention in 2003 and received an award of 'Perkhidmatan Cemerlang' from KKM in 2004. She joined IMU in December 2004 and was responsible for coordinating the Gynaecology posting in clinical school, elective & selective coordination of IMU students, revision and development of Clinical School Study Guides and curriculum mapping. She became the member of CtME (Continuous training of Medical Education) and assisted in many medical education training for the faculties as well as organization of IMEC 2008-2012 as scientific committee. She has recently been appointed as a Curriculum Coordinator for phase 2 of School of Medicine. She has published articles in local and international peer reviewed journals with her main clinical interest in Urogynaecology. She actively supervises students for their researches, some of which have been presented at scientific conferences and published in peer reviewed journals or submitted for publication. In 2011, she was promoted to an Associate Professor in O&G. She continued her clinical work and training in Urogynaecology and pelvic floor reconstructive surgery as well as in medical education. She is active as a member of Obstetrics & Gynaecology Society Malaysia and recently appointed as the State Coordinator for Negeri Sembilan until year 2014.



SHARIFAH SULAIHA BT SYED AZNAL MbChB MOG

Dr Nobu, who is from Japan, has been with IMU since February 2010 in the School of Dentistry. He has over fifteen years of full-time experience in clinical care, researching, teaching in the field of Temporomandibular Disorders (TMD), Orofacial Pain, and Oral Appliance therapy for Snoring and Sleep Apnea. He obtained his Masters degree at the University of Sydney in 1992 and finished a fellowship programme at the University of Medicine & Dentistry of New Jersey (UMDNJ) in 1994. He also obtained a Diplomate of the American Board of Orofacial Pain (ABOP) in 1996. He is a fellow member of the American Academy of Orofacial Pain (AAOP) and a member of the International Association for the Study of Pain (IASP). Also, he is a council member of the Japanese Society of Orofacial Pain (JSOP). He has several scientific publications and his research has included the testing of instruments to assess occlusal force and jaw movement as the objective characteristics of TMD patients, an effect of oral appliance therapy in obstructive sleep apnea, and an analysis of saliva as possible risk factors for Orofacial Pain. In addition, he has lectured nationally and locally. In his spare time, Dr Nobu enjoys walking, guitar playing, camping and spending time with family.



YOSHINOBU SHOJI DDS MDS



TAN BEE SIEW BDS MCD PhD

Dr. Tan Bee Siew is currently Associate Professor and Head of the Division of Children and Community Oral Health at the School of Dentistry, International Medical University. Prior to this appointment she was, Senior Principal Assistant Director of the Oral Health Division in the Ministry of Health Malaysia She graduated from University of Malaya in 1986 and obtained the postgraduate qualifications of Masters in Community Dentistry in 1996 and PhD in Community Dentistry in 2003. Dr Tan served the Oral Health Division, Ministry of Health, Malaysia upon graduation in 1986 until December 2009 in the state Oral Health Departments of Johor and Selangor, the Specialist Dental Department of Kuala Lumpur Hospital, the Division of Stomatology in the Institute for Medical Research, and the Research and Epidemiology Unit of the Oral Health Division, Ministry of Health, Malaysia where she contributed to many national level oral health research projects, dental epidemiological surveys and survey reports. She was also a member of the Research and Ethics Committee of the Faculty of Dentistry, University of Malaya from 2005-2010. Her fields of interest include oral cancer, fluorosis and use of fluorides in oral health. Dr Tan is married to Dr YC Lim, a private general dental practitioner and is blessed with two children, a daughter and a son. Her leisure activities include reading, looking for and trying out recipes for good food.



**TAN ENG LAI**BSc MBiotech PhD

Dr Tan Eng Lai is an Associate Professor attached to the School of Pharmacy and Health Sciences (SPHS). International Medical University. Kuala Lumpur. He was appointed as the Head of the Life Sciences Department in March 2012. Dr Tan has been serving as the Research Coordinator for the SPHS since 2008. Prior to joining IMU, Dr Tan worked as a post-doctoral fellow at the University of Malaya where he also obtained his doctorate degree in the year 2005. Prior to this, he obtained his BSc from Murdoch University, Western Australia in 1996 and Master of Biotechnology from the University of Malaya in 2000. Dr Tan's research interest is in nasopharyngeal carcinoma (NPC) particularly in the virology and molecular prognostication of the disease. His current research interest is in the identification of cancer stem cells in NPC. He has won an award in the Asia-Pacific Congress of Medical Virology in 2003 for his work on elucidating the role of Epstein-Barr virus latent membrane protein 1 and NPC and has published 15 research papers. He was involved in the national research programme on oral cancer and NPC from 2001-2005 and was also a recipient of grant from the Malaysian Toray Science Foundation. Since joining IMU, Dr. Tan had secured research grants from MAKNA and the Ministry of Health, Malaysia for his work on NPC. Dr Tan has supervised numerous undergraduate and postgraduate students and is also local liaison for the British Council Prime Minister 2 Initiatives (PMI2) Student Mobility Programme in collaboration with the University of Strathclyde in Scotland. Dr Tan is married to Eunice Liew, and besides his academic interests, he uses his leisure in studying theology.

Navyer Naveed Wazir is currently Associate Professor in the Department of Orthopedic surgery at the Faculty of Medicine and Health, International Medical University, Clinical School Seremban. Prior to this appointment he was senior lecturer and lecturer in the said department from March 2004 till 2010. Before joining the International Medical University he was junior lecturer and trainee medical officer at the University Malaya Medical Center, Kuala Lumpur, Malaysia. He obtained his MBBS from the Khyber Medical College, University of Peshawar, Pakistan in 1990. He completed his post-graduation in May 2002 from University Malaya Medical Center, Kuala Lumpur, Malaysia. He received further post graduate subspecialty fellowship training in arthroscopy and joint replacement from the same center (UMMC) in 2003; went abroad for fellowship training programmes in Trauma surgery in Germany (A0) in 2003; spine surgery in Hong Kong University in 2005, and Japan in 2007. Naveed represented Malaysia in the Asia Pacific Orthopedic Association and American Orthopedic Association Travelling fellowship in 2007. He has been associated with and is an active member of different professional societies, the Malaysian Orthopedic Society, American Orthopedic Association, Asia Pacific Orthopedic Association, Malaysian Spine Society, Scoliosis Research Society, and AO Spine Society. Naveed is also associated with relief and aid organizations and takes time off in time of disasters to help injured patients through Mercy Malaysia and MSF. He has published a number of articles in different scientific journals, his favourite being the one published in the Singapore Medical Journal on "a new clinical hand myelopathy sign, Wazir hand myelopathy sign". His special interest is spine surgery, joint replacement and arthroscopic knee ligament reconstruction in sports injured patients. He is married to Dr Shagufta Gul, a family physician at the University of Malaya. His leisure activities include gardening, listening to music, travelling, as well as maintaining and fixing his cars.



N. NAVEED WAZIR
MB BS (Pak) MS ORTHO (UM)

Lionel Wijesuriya, Associate Professor and formerly Head of Department of Surgery has been in IMU since November 2004. Having qualified MBBS (Ceylon) in 1968, his early training was in Sri Lanka's two premier teaching hospitals in Colombo and Kandy. Advanced surgical training in General Surgery and the sub-specialties of Urology, Gastroenterology, Vascular Surgery, and Orthopaedics in the United Kingdom led to the Fellowship of the Royal College of Surgeons of England (FRCS) in 1978. In 1984, Lionel was appointed senior lecturer in surgery at the North Colombo Medical College, then a newly established private Medical School. He played a key role in the design and commissioning of the professorial wing of its teaching hospital. For five years from 1989, Lionel worked in Hong Kong where he was general surgeon at the Pamela Youde Nethersole Eastern Hospital (PYNEH) whilst heading the division of urology there. He was appointed honorary clinical lecturer at the Chinese University of Hong Kong. Nethersole Hospital was pioneering laparoscopic surgery in Hong Kong at that time enabling Lionel to hone his laparoscopic skills. During this period Lionel was selected for additional training in gastro-intestinal endoscopy at the Norman Tanner Gastroenterology Centre in Balham, UK as well as for further specialization in Urology at the Institute of Urology in London. Whilst in Hong Kong, Lionel was conferred honorary fellowships by the College of Surgeons and the Academy of Medicine of Hong Kong as well as by the College of Surgeons of Sri Lanka. He spent the next five years as head of surgery at Jerudong Park Medical centre in Brunei – even then a state of the art medical



**LIONEL WIJESURIYA**MBBS FRCS FHKAM FCSS FCSHK

facility in the Sultanate. In the International Medical University, Lionel sits on the Dean's vetting committee, Faculty Management Committee and Medical Curriculum and Examination Committee. In addition to serving IMU, Lionel provides specialist urological services at Hospital Tuanku Jaafer, Seremban and general surgical services at Hospital Port Dickson. Lionel and wife have two children, a daughter who is a consultant histopathologist at a London Teaching Hospital and a son who is an electronic engineer.



YIAP BEOW CHIN BSc (Hons) PhD

Yiap Beow Chin is currently the Associate Professor at the Department of Life Sciences, School of Pharmacy and Health, Faculty of Medicine and Health, International Medical University in Kuala Lumpur. Prior to this appointment he was the Head of Department of Life Sciences, School of Pharmacy and Health, Faculty of Medicine and Health from 2009 – 2012. He obtained his BSc (first class honors) from the University Putra Malaysia in 2000 and then completed his PhD at the same institution in 2004. Subsequently, he obtained the Certificate in Good Clinical Practice from International Medical University in 2005. He was the Honorary Secretary of the Malaysian Invention and Design Society (MINDS) from 2011 - 2012, and serves as its Executive Committee member since 2010. He was a member of the International Judging Panel for the International Invention, Innovation and Technology Exhibition (ITEX) competition 2011. His fields of interest include molecular tools product development, antimicrobial chemotherapy and molecular genomics, and he has published and presented over 70 scientific papers. He has filed 3 Malaysian patents and 1 PCT application. He is married to Tan Wai Ying. His leisure activities include doing reading, sightseeing and looking for and partaking of good food.



No. 126, Jalan Jalil Perkasa 19, Bukit Jalil, 57000 Kuala Lumpur, Malaysia.

Tel: +60 3 8656 7228 Fax: +60 3 8656 7229 www.imu.edu.my