

Yong Loo Lin  
School of Medicine



# Medicine

A publication of the Yong Loo Lin School of Medicine • Issue 15 / August 2015

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## Dean's Message



Dear Friends,

Warmest greetings from the Yong Loo Lin School of Medicine!

July 2015 stands out as a very special month for all of us here at NUS Medicine – we celebrated the 110<sup>th</sup>

anniversary of the School on July 3<sup>rd</sup>. On this day in 1905, Singapore's first and foremost medical school was established to educate and train doctors for this country.

We have celebrated in other milestone moments this year too and I am proud to share them with you.

In March and April, we celebrated the official opening of two very important facilities – the Tahir Foundation Building (MD1), and the biosafety level 3 (BSL-3) laboratory in our flagship building, the Centre for Translational Medicine (CeTM).

The Tahir Foundation Building was officially opened on 27 April 2015 by the Minister for Education, Mr Heng Swee Keat. Named in recognition of Dato' Sri Dr Tahir, whose generous gift made in 2012 supports the advancement of medical education and research at NUS Medicine, the 17-storey facility houses research labs, teaching and learning spaces, as well as NUS Medicine student activity areas.

On 14 May 2015, the 650-square metre BSL-3 laboratory was officially opened by the Minister for Health, Mr Gan Kim Yong. Designed to Biosafety Level-3 standards, the new research facility lets scientists work on dangerous biological agents safely. This facility is crucial in helping to boost Singapore's research capabilities defences against new disease outbreaks.

In the area of international educational collaboration, we hosted the 12<sup>th</sup> NUS-Nagasaki Symposium on Infectious Diseases at the CeTM on 11 and 12 June 2015. This joint symposium with Nagasaki University provided a key platform for the development of strategic ideas and skills in the control of infectious diseases. Speakers from Singapore and Japan covered topics such as emerging diseases, bacterial and viral infections, and immunology and infections.

In this issue's Science of Life, we feature Associate Professor Richie Soong of the Department of Pathology and head of the Centre for Translational Research and Diagnostics, and his latest research in exploiting molecular features of disease to personalise disease management. Last but not least, we welcome alumnus Dr Desmond Wai (Class of 1994) to share with his experience of his time at medical school.

I hope these articles update you about the latest activities in and around our School and wish you a pleasant read.

**Yeoh Khay Guan**

*Dean*

*Yong Loo Lin School of Medicine*

# Official Opening of NUS Medicine's Biosafety Level 3 Laboratory

A new facility that boosts Singapore's research efforts in existing infectious diseases and its defences against new outbreaks was officially opened by Minister for Health, Minister Gan Kim Yong, on 14 May 2015.

Designed to biosafety level 3 (BSL-3) standards, the second highest rating for such laboratories, this new research facility is fully capable of handling dangerous biological substances – signifying a new era of translational research for infectious diseases in Singapore.

Based at the National University of Singapore (NUS) Yong Loo Lin School of Medicine's flagship building, the Centre for Translational Medicine, the 650-square metre laboratory has been carefully designed to accommodate researchers to study some of the most infectious diseases known to man and to find solutions to dealing with these dangerous microorganisms.

The laboratory currently has seven principal investigators working on more than 20 projects with institutions such as Harvard and Rutgers University and with experts from various disciplines at the NUS and the Agency for Science, Technology and Research.

Boasting intrusion alarms, round-the-clock closed-circuit television monitoring and a security system that grants access by verifying the vein profile of an authorised person's hand, the facility is one of seven such laboratories in Singapore.



From left to right: A/Prof Thomas Dick (Director, BSL-3 Laboratory), Prof John Wong (Chief Executive, NUHS & Senior Vice President of Health Affairs, NUS), Prof Tan Chorh Chuan (NUS President & NUHS Chairman), Mr Gan Kim Yong (Minister for Health), A/Prof Yeoh Khay Guan (Dean, NUS Medicine & Deputy Chief Executive of Academic Enterprise, NUHS) and Dr Sabai Phyu (Deputy Director, BSL-3 Laboratory).



(Extreme left) A/Prof Dick giving Guest-of-Honour, Minister Gan and distinguished guests a short tour of the biosafety level 3 laboratory.

# Official Opening of the Tahir Foundation Building



(From left) Minister Heng and Dato' Sri Dr Tahir being introduced to the Medicine Houses by Academic Advisor for Houses, Prof Rajendran K (extreme right).

**The** Tahir Foundation Building was officially opened on 27 April 2015 by Minister for Education, Mr Heng Swee Keat.

The opening ceremony was graced by National University of Singapore (NUS) President, Professor Tan Chorh Chuan, National University Health System Chief Executive, Professor John Eu-Li Wong, NUS Yong Loo Lin School of Medicine Dean, Associate Professor Yeoh Khay Guan, NUS Saw Swee Hock School of Public Health (SSHSPH) Dean, Professor Chia Kee Seng and NUS Faculty of Science (FoS) Vice-Dean, Professor Goh Say Song.

Named in recognition of Dato' Sri Dr Tahir, whose generous gift made in 2012 supports the advancement of medical education and research at NUS Medicine, the 17-storey mixed-use facility houses research labs, teaching and learning spaces, as well as NUS Medicine student activity areas.

Dr Tahir's gift not only provides for scholarships and bursaries to support financially needy students, but also enables the development of a novel Virtual Reality Simulation (VRS) system in the School for the training of medical and nursing students in the first full-scale application of this technology in medical and nursing education.

Professor Tan Chorh Chuan said, "We are deeply grateful to Dr Tahir for his generous gift to NUS and the opportunities it has created for our students and faculty, and for the benefits it will ultimately bring to our patients."



From left to right: Prof Goh Say Song (Vice-Dean, Faculty of Science), A/Prof Yeoh Khay Guan (Dean, NUS Medicine), Prof Tan Eng Chye (NUS Provost), Dato' Sri Dr Tahir, Mr Heng Swee Keat (Minister for Education), Prof Tan Chorh Chuan (NUS President & NUHS Chairman), Prof John Eu-Li Wong (NUHS Chief Executive & NUS Senior Vice President, Health Affairs) and Prof Chia Kee Seng (Dean, SSHSPH).

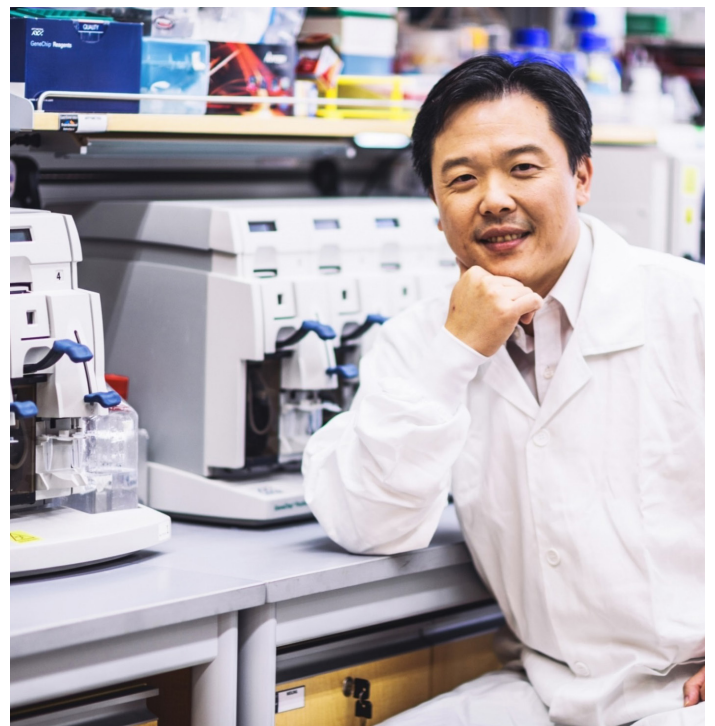
# Exploiting Molecular Features of Disease to Personalize Disease Management

**Associate** Professor Richie Soong of the Department of Pathology brings 20 years of molecular pathology experience to his role as head of the Centre for Translational Research and Diagnostics (CTRAD) at the NUS Yong Loo Lin School of Medicine. This unique Centre functions as a hybrid diagnostics and research laboratory. Besides serving as a clinical diagnostics facility that offers more than 150 different tests, CTRAD is also engaged in research to develop new healthcare models and discover novel disease markers.

The diagnostics arm of CTRAD is a one-stop shop for molecular pathology offerings that consists of six divisions: Biosample Repository, Digital Pathology, Medical Genomics, Medical Bioinformatics, Molecular Pharmacology, and Molecular Diagnostics. Significantly, the Molecular Diagnostics laboratory is certified by the College of American Pathologists (CAP), a globally recognised accreditation. One of the main advantages of CTRAD is the seamless integration of its different parts. Clinicians submit their patient samples at a single entry point, after which testing of the samples is coordinated. Another advantage of CTRAD is its clinical anchoring in the National University Hospital (NUH). Finally, the Centre benefits from agreements with many partners in the pharmaceutical and biotech industry. CTRAD thus acts as a liaison between industry and the clinic.

On the research front, Assoc Prof Richie Soong is involved in a range of projects, including using next-generation sequencing (NGS) technology in personalised disease management (see Facts Box). In one study, his laboratory applied NGS to determine the mutation status of 50 genes in tumours for more than 100 cancer patients. These patients had late-stage solid tumours that had failed to respond to several lines of treatment. The goal of the analysis was to give clinicians information about specific cancer mutations in each patient's tumours, to help them select appropriate targeted treatments.

The potential impact of the panel was stunningly illustrated by the response of one of the study participants, a 68-year-old woman with metastatic breast cancer that had responded poorly to multiple therapies. After the 50-gene panel identified mutations in the PIK3CA gene (causing abnormally active phosphoinositide 3-kinase or PI3K), the woman was given PI3K inhibitor therapy. Within a few weeks, her tumours started to shrink, becoming dramatically smaller after one and a half months.



"The efficient development of this test was possible because of the collaborative effort involving CTRAD, other NUH diagnostic centres, and the whole oncology clinic," says Assoc Prof Soong. "This is what differentiates us—the ability to readily integrate the clinic and the laboratory."

## Fact box

### The Power of Next-Generation Sequencing (NGS)

- NGS efficiently sequences large sections of DNA.
- Such sequencing provides information about an individual's disease risk and likely treatment response.
- Patient's disease risk and predicted treatment response could help guide disease management strategies.

# 12<sup>th</sup> Asia Pacific Medical Education Conference & 3<sup>rd</sup> International Conference on Faculty Development in the Health Professions

The 12<sup>th</sup> Asia Pacific Medical Education Conference (APMEC) held in conjunction with the 3<sup>rd</sup> International Conference on Faculty Development in the Health Professions (ICFDHP), was held in Asia for the first time, from 4 to 8 February 2015 at the National University of Singapore.

Organised by the Centre for Medical Education (CenMED), previously known as the Medical Education Unit (MEU), the Conference allowed participants to share their experiences as educators, learn the latest ideas and international best practices from experts in medical and healthcare professional education.

Now in its 12<sup>th</sup> year, the Conference continues to grow and strengthen, attracting over 1,100 participants from 46 countries this year, up from around 800 participants from 34 countries in 2014.

Chief Guest Professor Tan Eng Chye, Deputy President (Academic Affairs) and Provost, NUS, opened the Conference by sharing his own experience with developing faculty in higher educational institutes as the Opening Plenary Lecture.

In view of the joint organisation of the two conferences, the programme focused heavily on the theme "Enhancing Faculty Development at the Workplace: From Theory to Practice – Trends, Issues, Priorities, Strategies (TIPS)". A wide array of pre- and post-conference workshops and training programs was conducted in collaboration with the Association for Medical Education in Europe (AMEE) and the Association for the Study of Medical Education (ASME) to complement the main program.

With APMEC 2015 boasting a total of 41 Pre-Conference Workshops, 6 Plenary Lectures, 14 Symposia including the AMEE Symposium, 5 Meet-the-Expert Sessions, 1 Great Idea in Medical Education (GIME) Session, 8 Free Communication Presentations, 6 student presenters presenting on "Social Responsibility: Nurturing from Young – Students' Perspective", 20 Best Abstract for Poster Presentations, 210 Poster Presentations and 3 Post-Conference workshops, many participants responded positively and pledged to return for the 13th APMEC from 13 to 17 January 2016.



Prof Brian D Hodges (second from left) and A/Prof Chong Yap Seng (second from right) receiving the APMEC-MILES (Mentoring, Innovation and Leadership in Educational Scholarship) Award from Prof John Wong, Chief Executive of NUHS (middle) with Dr Dujeepa D. Samarasekera, Director of CenMED and Chairman of the Organising Committee (extreme left) and Prof Matthew Gwee, Professorial Fellow and Chairman, International and Education Programmes, CenMED (extreme right) looking on.



# 12<sup>th</sup> NUS-Nagasaki Symposium on Infectious Diseases

The 12<sup>th</sup> NUS-Nagasaki Symposium on Infectious Diseases was successfully held at the Centre for Translational Medicine (CeTM), at the NUS Yong Loo Lin School of Medicine on 11 and 12 June 2015. Proudly hosted by the National University of Singapore (NUS), the joint symposium with Nagasaki University was graced by Guest of Honour and Ambassador of Japan to Singapore, His Excellency Mr Haruhisa Takeuchi. More than 200 participants from the National University Health System (NUHS), Life Sciences Institute, Agency for Science, Technology and Research (A\*STAR), Duke-NUS Graduate Medical School and various local hospitals were also present at the event.

Singapore's close proximity to her neighbouring countries, where a number of zoonotic infectious diseases are prevalent, has reinforced the need for cooperation between countries and institutions on infectious disease research. The threat of new and re-emerging infectious diseases is ever present, with SARS in 2002, the recurrent outbreaks of Ebola and MERS, together with other viral diseases such as dengue, chikungunya and pandemic influenza.



Professor Yoshiyuki Nagai, Director of the Center of Research Network for Infectious Diseases, RIKEN, Japan, giving the plenary talk.



His Excellency Mr Haruhisa Takeuchi, Guest of Honour and Ambassador of Japan to Singapore, (right) interacting with Prof Halliwell, Deputy President of Research and Technology, NUS (centre) and Prof Lawrence Ho, Vice-Dean for Research, NUS Medicine (left).

In the constantly evolving landscape of infectious diseases, the NUS-Nagasaki Symposium has been crucial in helping to develop strategic ideas and skills in the control of infectious diseases. This year, speakers from Singapore and Japan covered topics such as emerging diseases, bacterial and viral infections, and immunology and infections. Plenary speakers included Professor Yoshiyuki Nagai from Center of Research Network for Infectious Diseases, Japan and Professor Laurent Rénia from Singapore Immunology Network, A\*STAR.

The year's symposium was also significant as it served as a landmark to commemorate and celebrate the establishment of the CeTM in NUS.

# Scholarship in Cancer Research spurs PhD student forward

“Someone once told me that a true gift is found in our sincerity to act for the happiness of others,” reflects Lim Jia Pei, a PhD student in her first year at the National University of Singapore (NUS) Yong Loo Lin School of Medicine.

The Biomedical Sciences graduate was awarded the Ong Hin Tiang PhD Scholarship in Cancer Research and is currently pursuing her doctoral studies at the NUS Department of Anatomy.

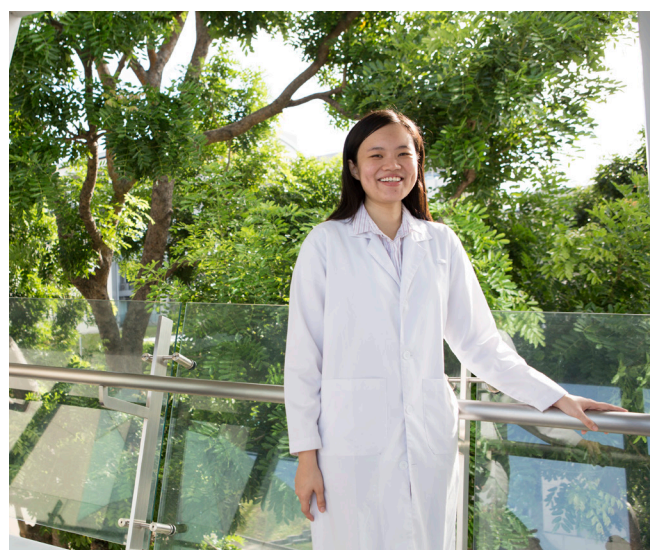
While Jia Pei is fully aware of the much-needed boost the Scholarship has given her in pursuing an education in a top-ranking university, she didn't realise that it originated from a long-lasting heritage of hard work and humility.

The Scholarship was set up by the Ong Hin Tiang & Ong Sek Pek Foundation, whose funding comes solely from gifts made by the late Ong Sek Pek and his family. It all started when a poor young Chinese scholar named Ong Pek Boey came to Malaya in search of a better life for himself and for the generations after him. After his untimely passing, his family survived through frugal living and careful saving and after many years, managed to invest in land, buy a shop and start a business.

Five generations later, Mr Ong Sek Pek, the eldest son of Mr Ong Hin Tiang, never forgot his roots and established the family foundation to help the weak and the downtrodden just as his father had done on a personal basis throughout his life. Mr Ong felt that funding students' education in cancer research was the best way to influence the future. After his passing, the Foundation was named after both him and his late father.

“I think the greatest gifts that one can give are hope and an opportunity to others to realise their dreams, and this is exactly what I have been given by the Ong family through this Scholarship. I am truly very thankful,” expresses the Malaysian Chinese student.

The aspiring scientist is highly inspired by stories of those who have made a difference in people's lives through research and discoveries in the medical field.



Lim Jia Pei, Ong Hin Tiang PhD Scholarship recipient in Cancer Research at NUS

She says, “The experiences and knowledge that I have gained while working in NUS further strengthened my passion for medical research and deepened my dream and aspiration to be able to make a difference through medical research that would positively impact the lives of people and society in the future.”

That is exactly what the Foundation hopes for for the recipients of its Scholarship – that they should never forget the hardship and sacrifices they experienced and always remember to help the less fortunate when they are able to.

NUSGIVING

THE POWER  
OF POTENTIAL

# Quotable Quotes for Juniors



By Dr Desmond Wai (Class of 1994)

I graduated from the NUS Yong Loo Lin School of Medicine 21 years ago, when it was formally known as the NUS Faculty of Medicine. As I reflect on my past journey through medical school, I recall many memorable quotes from seniors and patients I think young doctors and students may find useful even today.

*"Students, you must learn these two rules in medical school. First, don't inconvenience the staff. Second, be helpful."*

**- Dr Ngoi Sing Shang, 1992**

During our third year surgical posting back in 1992, we were attached to Dr Ngoi. In one particular session, there was a patient with hematemesis. We went to the Endocenter to watch Dr Ngoi perform therapeutic gastroscopy.

We have seen diagnostic endoscopies before but that was one of the few times we saw a real time emergency endoscopy and we were all excited.

The old Endocenter at the National University Hospital (NUH) was at level 2 of the Main Building, and the room was really small. Dr Ngoi found active bleeding from a duodenal ulcer during gastroscopy. We found it so exciting that we were crowding around the patient, obviously blocking the endoscopy nurses from passing the instruments to Dr Ngoi. Dr Ngoi then kindly but firmly told us off.

***Students or junior doctors must balance their eagerness to watch and learn from senior doctors so as not to obstruct the real action. As much as students would like to stay close to the senior doctors in action, we must always give way to the nurses.***

Therapeutic endoscopic procedure always take a longer time to perform, as the nurses need to prepare special equipment like adrenaline and injectors, and the endoscopist needs more time to do his job. The sedative effects weaned off during that particular session and the patient started to struggle. As the nurses were busy looking for the extra equipment, Dr Ngoi looked to us to help restrain the patient.

***I remember what Dr Ngoi taught us till today: never add burden to the staff, and always be ready to help. With this attitude, wherever you go, most doctors and staff will love to work with you.***



*"Go and buy some supper for everyone."*

**- Prof Low Cheng Hock, 1992**

We were third year students attached to the Tan Tock Seng Hospital surgical department. During the night calls, we followed the on-call registrar and medical officers (MOs) around to observe new emergency cases.

During one of the night calls, Prof Low, then-Chief-of-Surgery, suddenly showed up and passed a S\$50 note to one of us to go buy supper. Back in 1992, S\$50 was quite a lot of money, as a cup of coffee cost S\$0.5, and a plate of chicken rice S\$1.5. One of us drove to Whampoa hawker center and bought loads of food including oyster omelette, hor fun, Hokkien mee, fried rice and satay. There was more than enough food for the whole on-call team, including us students. Prof Low also stayed and chatted with us.



Dr Desmond Wai together with Prof Low Cheong Hock (second and third from left respectively) at the Singapore Medical Association Annual Dinner 2015.

***It's always good to be generous and kind to your juniors. They appreciate and remember your good deeds for a long time. Also, eating together as a team is one of the best ways of teambuilding.***

*"Ha, now then you start to read? I know, step one, stab the patient."*

**- a patient with pleural effusion, 1992**

During one of the medical night calls in third year, we were fortunate to have a chance to watch Dr Tiong Ching Yeo, the MO on call, inserting a tube into the chest of a young man with pleural effusion. We were all very enthusiastic as we watched our first chest tube insertion.

We crowded around the bedside and were trying to read the chapter on "How to insert a chest tube" in our little pocket handbook on clinical medicine.

The patient, an educated young man, looked worried when he saw us reading our handbook. He assumed we, the students, were doing the procedure and was alarmed that we only started reading the manual before the procedure.

Dr Yeo reassured the patient that he was doing it and we were just watching. The procedure went well eventually.

From this incident, I learnt two lessons. First, when we wear the white coat, patients recognise us as a medical staff and we are expected to behave like one. Reading a manual in front of a patient tells him we do not know about the procedure. Second, as we could not possibly predict what emergencies or procedures we were going to encounter, so we have to read and learn as much as possible before going for night calls.

***It is important to look confident in front of patients. And the best way to appear confident is to be well prepared. Students cannot predict what cases they will encounter in the wards, so they should learn everything as much as possible, as early as possible. Davidson is a must-read for students, and should be read from cover to cover early in their postings.***

***More so as a qualified doctor, we ought to always keep ourselves updated as we cannot predict what patients or what type of diseases we will see in our clinic.***

# CATCHING UP ON GOOD TIMES

CLASS OF 1995



## 3

Calling all alumni!

## Steps to Stay Connected



### 1

Update your particulars



with us via email (alumni.med@nus.edu.sg) and receive the latest news and events around school

### 2

Contact Us



to plan your next class gathering!

### 3

Choose your part/role



in shaping the next generation of doctors.

- Admission selection committees
- Career guidance to students
- House mentor
- Mentor for student initiatives

<b>Date</b>	<b>Event &amp; Venue</b>
<b>Aug 3 - 4</b>	<b>Fundamentals Workshop</b> Centre for Healthcare Simulation, Level 3, Centre for Translational Medicine (CeTM), MD6, NUS
<b>Aug 4</b>	<b>Flag Day</b> Island-wide
<b>Aug 7</b>	<b>Rag Day</b> The Float @ Marina Bay
<b>Aug 15</b>	<b>Student Medical-Nursing Education Conference (SMEC)</b> Centre for Translational Medicine (MD6), NUS
<b>Aug 24</b>	<b>White Coat Ceremony</b> University Cultural Centre, NUS
<b>Sep 5 - 6</b>	<b>Neighbourhood Health Service (NHS)</b> Marine Terrace
<b>Sep 11</b>	<b>Keynote Address</b> Lecture Theatre 37, Level 3, Tahir Foundation Building (MD1), NUS
<b>Sep 21 - 23</b>	<b>International Advisory Panel (IAP) Visit</b> NUHS Tower Block
<b>Oct 15 - 17</b>	<b>NUHS-MD Anderson Pathology Update 2015</b> Auditorium, Level 1, NUHS Tower Block, NUS
<b>Oct 17 - 18</b>	<b>Public Health Service (PHS)</b> Clementi Central
<b>Oct 30</b>	<b>Awards &amp; Appreciation Night</b> University Cultural Centre, NUS

*Details may be subject to change at the discretion of the respective departments without prior notice.*

**NUS • Cambridge**  
Joint Symposium 2015

**A Whole of Life Approach to Population Health**

**Date**

Thursday, 29th October 2015

**Venue**

CeLS Auditorium,  
Level 1, Centre for Life Sciences,  
28 Medical Drive, Singapore 117456

For registration and more information, please visit:

<http://www.doctorsoftomorrow.sg/nuscambidge/2015/>

**ORGANISERS**

Associate Professor YEOH Khay Guan  
Associate Professor CHONG Yap Seng

**SPEAKERS**

**University of Cambridge**

Professor Kay-Tee KHAW  
Professor Gordon SMITH  
Professor Nick WAREHAM

**National University of Singapore**

Associate Professor CHONG Yap Seng  
Professor KOH Woon Puay  
Associate Professor TAI E Shyong

A collaboration between:



Yong Loo Lin  
School of Medicine



UNIVERSITY OF  
CAMBRIDGE





## Coat of the Day

*"Keep your eyes on the stars, and your feet on the ground."  
- Theodore Roosevelt*



Yong Loo Lin  
School of Medicine

The Yong Loo Lin School of Medicine is the first academic body in Singapore's history dedicated to tertiary education. Established in 1905, it has the honour of being the foundation of what has now evolved into the National University of Singapore. The School is a strong component in the University's Mission to advance knowledge and foster innovation, educate students and nurture talent in service of Singapore and society.

## White Coat Humour

A man speaks frantically into the phone, "My wife is pregnant, and her contractions are only two minutes apart!"

"Is this her first child?" the doctor queries.

"No, you idiot!" the man shouts. "This is her husband!"

## Picture Quiz

### The Results are out!

The correct answer for the last issue's Picture Quiz is:



#### Congratulations to our three winners!

- Hannah Ng (Class of 2017)
- Ooi Tong Li (Class of 2017)
- Norman Lin (Class of 2019)

Winners will be notified by email on prize collection.

## Subway



### Which building is on the left?

Submit your name, phase/course (for students) and answer to: [alumni.med@nus.edu.sg](mailto:alumni.med@nus.edu.sg)

Contest ends on: 1st September 2015

First 3 correct answers will win a **\$10 Starbucks Card** each!

# MediCine

is brought to you by the  
Yong Loo Lin School of  
Medicine, Dean's Office.

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