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HOD'S MESSAGE



Welcome to the Department of Biochemistry.

It is an exciting time for the field of Biochemistry, with many aspects of today's life increasingly dependent on better biochemical descriptions and understanding. Although we still largely follow the foundational approach of "take it apart and study the individual components in isolation", we now have tremendously enhanced tools with which we use to characterize and measure changes at both the molecular and systems levels.

Take, for example, human diseases—which are typically thought of first—and human health. We care more about food composition and routinely consume supplements. What in the past was reserved for babies has now been developed into specialized nutrition for different groups of people. Daily physical activity and its quantitation via personalized trackers of caloric intake over energy expenditure are now mainstream, and the customization of skin care and cosmetics are another example of how trends are moving toward individualization. These new tendencies are invigorating the field of Biochemistry, and illustrate the widespread importance of this field in emerging frontiers.

Yet, various aspects of food digestion, absorption, transport, and utilization remain poorly understood. Furthermore, following the extensive foray into genetics analyses, we now know that human health and diseases are based upon many critical biochemical reactions that extend far beyond our genetic background and variation. Collectively, there is now a call for better definitions of the 'physiological state'-not just the diseased state-along with the muchneeded descriptions as to the effects of life-style, nutritional habits and age. We also seek new ways to examine the main components of living matter-nucleic acids, proteins, carbohydrates, and lipids-in more resolved and individualized fashions. This will require improved methods and approaches for qualitative and quantitative measurements, and, most importantly, their integration.

The Department of Biochemistry at NUS is in a good position to address these needs. First, we are embedded within the School of Medicine, in close physical and administrative proximity to our colleagues in clinical departments. Second, change management inevitably means learning. Given that our Department is the first point of contact for incoming dental, medical and life sciences students each year, we will have to redefine our roles and contributions to our ongoing teaching commitments as well as our professional development in education. Third, our scientific strengths are organized into three general themes (Ageing, Metabolism, and Synthetic Biology), and these are aligned with areas of growing opportunity. Last, but

not least, the Department harbours considerable analytical capabilities across the major classes of biomolecules.

In this new era, our goal will be to integrate our approaches with clinical research and education in the context of 'High Definition Biochemistry' (HD BCH): The use of better analytics to explore new opportunities in the context of better-defined systems of interest. Such analytical distinctions will be the key for our functional understanding of the physiological state.

I would like to thank Maxey CHUNG, the members of the management committee and administrative office for their hard work, and all members of the Department for their contributions over the past years. It will be a privilege to lead the Department of Biochemistry into this next important phase of 'High Definition Biochemistry'. I look forward to collaborating with you in these endeavours.

Professor Markus WENK

Staff Awards

The Department celebrates your achievements



Together as co-founders of an A*Star spin-off, MiRXES, **A/P Too Heng Phon** and **Dr Zhou Lihan**, a PhD graduate from Department of Biochemistry (Class of 2012) had materialised with just a few drops of blood, doctors are able to detect accurately whether a patient had developed early-stage of gastric cancer. This diagnostic kit, which was co-developed with the Singapore Gastric Cancer Consortium which is led by Yong Loo Lin School of Medicine's Dean A/P Yeoh Khay Guan, detects the patterns of microRNA in a blood sample and the outcome can be obtained in 3 hours.

Source: http://tinyurl.com/hrteqpj



NUS SynCTI has launched a new \$25 million research programme mostly funded by NUS topped up with contributions from NRF, MOE and other government agencies and industry partners. SynCTI programme brings together the disciplines of engineering, medicine and science and aims to take on societal grand challenges. NUS SynCTI headed by Program Leader, **A/P Matthew Chang**, alongside **A/P Yew Wen Shan**. *Source: http://tinyurl.com/zjdh6rp*



A/P Yew Wen Shan with students, Rashmi Rajasabhai and Valerie Ling, part of an NUS team that re-engineered a bacterium to extract metals like gold from e-waste. They are working with a local e-waste company Cimelia to finetune the technology and cut the cost of the method. *Source: http://tinyurl.com/zufzcbl*



Dr Lim Yoon Pin, together with a local medical diagnostic company Restalyst, has successfully commercialised a new gastric cancer screening kit called GC-REAAD[™]. It was developed from the technology invented by Dr Lim. The kit is a bloodbased test that has demonstrated a better ability to detect without false positives compared with other tests. *Source: http://tinyurl.com/j65bvf6*



Dr Sudhakar Jha together with his team found that the human papilloma virus (HPV), which causes cervical cancer, interacts with a protein called EDD1 to destabilise a tumour suppressor protein, which stops the formation of tumours. The three-year study also showed that an increase in a tumour suppressor protein called TIP60, found in the human body, could prevent the growth of cancer cells.

Source: http://tinyurl.com/juwed9g



A/P Tan Tin Wee & Emeritus Professor Sit (Wong) Kim Ping were featured in the SG50 Singapore's Scientific Pioneers alongside NUS President Tan Chorh Chuan and Chief Executive of National University of Health Systems (NUHS) Professor John Wong.

Source: http://tinyurl.com/hm3n75g



A/P Thilo Hagen was awarded the Faculty Teaching Excellence Award, Faculty of Science 2015



A/P Young Foong May was awarded the Master of Research in Educational and Social Research from Institute of Education, University of London.



A/P Caroline Lee was awarded the Faculty Research Award for AY2014/2015







The annual CIO 100 index highlights top 100 regional enterprises and organisations that have excelled through creative and innovative IT projects in the past year. CIO 100 Honouree status is conferred on organisations whose strategic deployment of ICT through groundbreaking initiatives and projects have ultimately delivered immense value to their customers, partners and industries/sectors. We congratulate **Dr Kenneth Ban, A/P Tan Tin Wee** and team for the award on project, InfinitiCloud.

Grant Awards

Grant Title: Impact of chromatin conformation on chemotherapeutic drug resistance

> Principal Investigator - Dr Chen Ee Sin Approved TPV - \$ 150,000 Duration - 3 years Date - 8 March 2016



Staff Long service Awards

Name	Years
Dr Arunmozhiarasi Armugam She has been transferred to National Eye Research Institute (NERI) on 1 st January 2016.	20
A/P Chang Chan Fong	22
A/P Too Heng-Phon	22
A/P Tan Tin Wee	25
Mdm Fatihah Bte Ithnin	26
Prof Kandiah Jeyaseelan He has retired from the Department on 31 December 2015 and is currently a Visiting Professor at NERI.	26
Mdm Long Lee Hua	27
A/P Khoo Hoon Eng	28
Mdm Ang Bee Keng	31
Mdm Kalimuthu Malihay	32
A/P Chua Kim Lee	33
Mdm Ooi Suan Oo	45
Mdm Tan Boon Kheng	45

Staff Long service Awards

A/P Maxey Chung presented the NUS Medicine Heritage Tie and Shawl to our long service awardees. A brief ceremony was held at the Department on Friday, 29 January 2016. The ceremony was followed by a tea reception.



A/P Chang Chan Fong - 22 years





A/P Tan Tin Wee - 25 years



Mdm Fatihah Bte Ithnin - 26 years





Mdm Long Lee Hua - 27 years



Mdm Kalimuthu Malihay - 32 years



Mdm Ang Bee Keng - 31 years



Mdm Ooi Suan Oo - 45 years



Mdm Tan Boon Kheng - 45 years



Student Awards

Yong Loo Lin School 6th Annual Graduate Scientific Congress of Medicine 2016 Winners

1st Runner-up Oral Presentation Award

Deepa Rajagopalan Supervisor: Dr Sudhakar Jha

Best Poster Presentation Award

Ren Bingbing Supervisor: Dr Chen Ee Sin

Chow Ai Lee Supervisor: Dr Long Yun Chau

Tesfahun Dessale Admasu Supervisor: Dr Jan Gruber

Student Travel Fellowship

Deepa Rajagopalan Supervisor: Dr Sudhakar Jha

Eng Loan Ping Supervisor: A/P Tan Tin Wee

Fong Hei Tung Supervisor: Dr Takao Inoue

Matias Jose Caldez Supervisor: A/P Philipp Kaldis

Tesfahun Dessale Admasu

Supervisor: Dr Jan Gruber

Department of Biochemistry

New students - January 2016 intake

Chua Puay Suan, Jasmine

Supervisors: A/P Yew Wen Shan & Dr Saurabh Nirantar

Nguyen Thi Thuy Trang

Supervisors: Dr Chen Ee Sin & A/P Tan Tin Wee

Bilal Unal Supervisors: Adj P Vinay Tergaonkar & A/P Reshma Taneja

Lim Lee Jin Supervisor: A/P Lee Guat Lay Caroline

Wisna Novera Deng

Supervisor: A/P Deng Lih Wen



Student Conferment

Student	Supervisor	Date
Tan Thong Teck	Dr Wang Xueying	30-Sep-15
Beilin Le	Dr Wu Qiang	31-Oct-15
Quan Yu	Prof Peter Little	31-Oct-15
Slim Mzoughi	A/P Ernesto Guccione	31-Oct-15
Xie Min	Prof Kanaga Sabapathy	31-Oct-15
Lee Ha Yin	Prof David Marc Virshup	30-Nov-15
Lum Fok Moon	A/P Tan Tin Wee	30-Nov-15
Neha Shrestha	A/P Han Weiping	30-Nov-15
Hong Shin Yee	A/P Thilo Hagen	31-Dec-15
Liling Wu	A/P Ernesto Guccione	31-Dec-15
Lim Yen Ching	Dr Xu Feng	31-Dec-15
Kok Yee Jiun	A/P Maxey Chung	28-Feb-16
Benny Paula-Beth Angelica Tiqui	A/P Michael Raghunath	31-Mar-16
Lee Seow Chong	A/P Maxey Chung	31-Mar-16
Zhao Wei	A/P Deng Lih Wen	31-Mar-16



Research Publications

INTERNATIONAL REFEREED

PUBLI SHED

Guarnerio*, J., M. Bezzi, J.C. Jeong, S.V. Paffenholz, K. Berry, M.M. Naldini, F. Lo-Coco, **M S Y Tay**, A.H. Beck and P.P. Pandolfi*, "Oncogenic Role of Fusion-circRNAs Derived from Cancer-Associated Chromosomal Translocations". *Cell*, 165, no. 2 (2016): 289-302. (United States).

Fanny, N., Wijaya, L and **B L Tang**^{*}, "SIRT1 in the brain-connections with aging-associated disorders and lifespan". *Frontiers in Cellular Neuroscience*, 9 (2016). (Switzerland).

Yang*, Y, T T Federico, K Arai, **M R Wenk**, R H Deron, P T H Wong* and MK Lai*, "Sphingosine kinase inhibition ameliorates chronic hypoperfusion-induced white matter lesions". *Neurochemistry International*, 94 (2016): 90-97. (United Kingdom).

Lin, F, Z Li, YF Hua and **Y P Lim**^{*}, "Proteomic profiling predicts drug response to novel targeted anticancer therapeutics". *Expert Review of Proteomics*, 13, no. 4 (2016): 411-420. (United Kingdom).

Tang, B L, "Sirt1 and the mitochondria". *Molecules and Cells*, 39 (2016): 87-95. (Singapore).

Rebecca, A J, J Wu and **E S Chen***, "C1D/Cti1/Rrp47 in coordinating RNA processing, chromosome condensation and DNA damage response". *Cell Division*, 11 (2016): 2. (United Kingdom).

Tay*, S K H, RM Merchant, S Banerji, EF Chew, PCL Poh, J C T Sarah, GS Singh, Y Guo, **Sharma M** and Ravi Kambadur, "Is Trunk Posture in Walking a Better Marker than Gait Speed in Predicting Decline in Function and Subsequent Frailty?". *Journal of the American Medical Directors Association (JAMDA)*, 17, no. 1 (2016): 65-70. (United States). (PMID: 26410107).

Tang, **B L**, "Autophagy in response to environmental stresses: new monitoring perspectives". *Ecological Indicators*, 60 (2016): 453-459. (Others).

M, Lu, S., P K Chong, K G Yeoh and **Y P Lim***, "Comparative proteomic profiling of extracellular proteins between normal and gastric cancer cancer cells". *Current Cancer Drug Targets*, (2016). (Netherlands).

Nguyen, T T T, K K Chua, K S Seah, Seok Hwee Koo, J Y Yee, G E Yang, K K Lim, Y W S Pang, Audrey Yuen, L Zhang, W H Ang, B W Dymock, E J D Lee and **E S Chen***, "Predicting chemotherapeutic drug combinations through gene network profiling". *Scientific Reports*, 6 (2016): 18658. (United Kingdom).

T Z, Tan, H Yang, J Ye, J H J Low, M Choolani*, S P D Tan, **J P Thiery** and Y J R Huang, "CSIOVDB: a microarray gene expression database of epithelial ovarian cancer subtype". *Oncotarget (Open Access)*, 226, no. 41 (2015): 43843-043852. (United States).

Wu, F, C Lu, P Kumar, A El Marjou, W Qin, S Zhong, C T Lim*, **J P Thiery** and R Liu, "Homophilic Interaction and Deformation of E-cadherin and Cadherin 7 Probed by Single Molecule Force Spectroscopy". *Archives of Biochemistry and Biophysics*, 1, no. 587 (2015): 38-47. (United States).

ACCEPTED FOR PUBLICATION

Toh, C D, C A K El Farran, ZS Chong, H Wang, YS Tan, J Maury, HC Guo, DR Ma, YL Goh, Y Chang, J Collins, G Daley, Hu Li, **Y P Lim**, B Frederic and Y Loh, "Global Regulatory Network Controlling Human Somatic Cell Reprogramming." *Cell Reports*, (2016). (United States).

Kumar, N, A S Zaw, B L Khoo, S Nandi, Z Lai, G Singh, C T Lim* and **J P Thiery**, "Intraoperative Cell Salvage in Metastatic Spine Tumour Surgery Reduces Potential for Reinfusion of Viable Cancer Cells". *European Spine Journal*, (2016). (United States).

Tang, **B L**, "Are Wnts retrogradely transported to the ER?". *Journal of Cellular Physiology*, (2016). (United States).

Mishra, P, GY Park, M Lakshmanan, HS Lee, H Lee, **M W Chang**, C B Ching, J Ahn and D Lee^{*}, "Genomescale metabolic modeling and in silico analysis of lipid accumulating yeast Candida tropicalis for dicarboxylic acid production". *Biotechnology and Bioengineering*, (2016). (United States).

NOT CLASSIFIED PUBLISHED

Tay*, **M S Y** and P.P. Pandolfi*, "Posttranscriptional regulation of PTEN by competing endogenous RNAs". *Methods in Molecular Biology*, 1388 (2016): 139-154. (Germany).

Staff Welfare Committee FY2015

Desaru Farm | 22 February 2016



22 FEBRUARY 2016 | ONE DAY DESARU NATURE TO

Lunch in Penggerang Open outdoor lunch and fruits fiesta. Drop by Penggerang local product shop for the

famous "Dou Sha Bing', "Bong Bing", etc whic

Free and easy shopping at Aeon Tebrau.

Seafood Dinner at Senibong Restaurant.

nce journey back to Singapore.

Desaru Fruit Far

TOUR & TRAVEL

partment of Biochemisting Loo Lin School of Me

7.30 PM | Back to Singapore

must to buy items.

6 PM | Dinner

Shopping

7 AM | Meet up Point MD11 Roundah

Breakfast in Johor Bahru Breakfast will be at your own expenses at JB eating place.

Places we will be visiting

Desaru Fruit Farm:

Where you can see rows of honey lime trees with fruits hanging on the trees. Many other tropical fruits such as rose apple (jambu), breadfruit, etc, hanging on the trees. You can purchase the fruits freshly harvest from the orchard. Freshly cut fruits skewer on sticks are also available for sale

Bee Farm at Penggerang:

An educational and informative talk on bee and honey where you can get the first-hand knowledge about honey followed by sampling of varieties of honey. Commentary will be done by in house guide.



Desaru Farm Malaysia and it was a day filled with fun, food and adventure! Our first stop was Johor Bahru where we had a simple but delicious local breakfast. We then made our way to the Desaru Fruit Farm where our tour guide gave us a tour of the farm. He shared with us some fruits which we enjoyed while walking around the farm. We also had the opportunity to pet rabbits and feed goats.

The Staff Welfare Committee organized a trip to

The farm tour ended with an educational and informative talk about bees and honey. Many of us were able to purchase different varieties of honey. We then made our way to the restaurant where a splendid lunch was waiting for us. There were a variety of local dishes and a selection of fruits from the farm. We definitely were not left famished when we made our way to Aeon Tebrau for shopping. Our last stop was at a seafood Restaurant in Johor Bahru.

It was a fun filled trip with activities and we absolutely look forward to the next staff welfare trip!



Sharing some beautiful pictures from the trip























Safety and Welfare Lunch MD6 | 24 February 2016

The Department of Biochemistry had a Safety & Welfare Lunch on 24th February 2016 at LT35 in MD6. The Safety & Welfare Lunch was funded by the Department of Biochemistry Staff Welfare Fund for the first time, and was attended by more than 130 staff including, undergraduate and postgraduate students. Associate Professor Maxey Chung gave the opening speech, urging all staff and students to adhere to safety rules and regulations in the department. Safety Chair, Dr Takao Inoue reminded staff and students on proper lab attire during non-office hours, supervision of undergraduates in labs and collection and disposal of cytotoxic DNA gel running buffer. Deputy Chair, Dr Kenneth Ban shared the accidents and incidents that took place in the department since August 2015, as well as the lessons learnt and the preventive actions taken. The newly added compulsory and recommended IVLE safety trainings were also alluded. Staff and students were informed of the inaugural NUSMed Safety Day on 6th September 2016, and were encouraged to participate in it. A sumptuous buffet lunch was served following the presentation which we are sure that everyone had a good time.

DEPARTMENT OF BIOCHEMISTRY SAFETY & WELFARE LUNCH

Date: 24th Feb 2016, Wednesday Time: 11 am Venue: LT 35, MD 6, NUS



Attendance is compulsory and will be taken



Department of Biochemistry Yong Loo Lin School of Medicine



















Honours Open House 2016

MD6 | 14 March 2016



MONDAY 14TH MARCH, 2016 12.30 PM | MD6-01-01B

Program

TIME	DETAILS	
12.30pm	Guests to be seated	
12.30pm - 12.40pm	Welcome Speech by Acting Head / Education Director	
12.40pm - 12.50pm	Presentation by Module Coordinator	
12.50pm - 1.10pm	Presentation by Former Honours Students	
1.10pm - 1.20pm	Q & A	
1.20pm - 1.30pm	Interaction & Tea Reception	





The recent honours open house held on 14 March 2016 was a sucessful event with opening speeches by A/Ps Yew Wen Shan and Maxey Chung.

Honours module coordinator Dr Long Yun Chau, gave an introduction of the department and some former honours students shared their personal learning experiences with the participants.

At the end of the presentation there was a Q&A session followed by a tea reception at the venue.







Student Retreat Bintan | 14 March 2016

From 7th to 10th January 2016, 19 postgraduates from our department, accompanied by Amanda, Grace, Dee and myself, headed for the second Biochemistry PG retreat. The destination this time was Spa Villa Resort in Bintan. I believe that I speak for everyone when I say that once again, the retreat was really memorable for everyone. While the first retreat in 2014 focussed mainly on issues and difficulties that students face in their studies, this time the participants were mostly students at a very early stage in their postgraduate studies. Hence, the retreat was all about getting to know each other and getting to know about yourself. There were plenty of opportunities to get to know your fellow students and make friends, which is a really important thing to have during one's study! Most importantly, thanks to Amanda and Dee, who recruited William and Grace, facilitators of past Office Retreats, to run a workshop during the retreat, we got an amazing insight into our behavioural and thinking preferences. During these one and a half days we really realised a lot about ourselves. Although some activities and insights were not so comfortable (for some), the workshop helped us to understand why we think and behave in certain ways and how we can apply this knowledge to make our relationship with other fellow students and colleagues work better. In addition, there were also good food, a wonderful resort which offered fun activities, and plenty of sun, time to relax as well as shopping (depending on your preference). A big thank you to Amanda, Dee, Grace, Safia, who made this possible. In fact I enjoyed this so much that we are already planning the next one. It will possibly be even better! So if you are a student, don't miss the next chance!

Account written by A/P Thilo Hagen



Department of Biochemistry

















Department of Biochemistry

Fire Drill 2016 MD6 | 26 FEBRUARY 2016

Department *of* Biochemistry

MD 7 FIRE DRILL EXERCISE

The Department of Biochemistry will be conducting a fire drill on

26th February 2016 (Friday, PM)

DURING the fire drill, Fire Wardens will guide you to the nearest emergency exit. Upon hearing the fire alarm, please evacuate from labs/offices promptly and move in an orderly manner to the assembly point at the open space between MD6, MD2 and MD3 (old Saw Swee Hock School of Public Health)

BEFORE the fire drill, please familiarize yourself with the route to the nearest emergency exit and the location of our assembly area.

Please co-operate fully during the evacuation.

Staff and students from MD6, MD4 and CeLS are advised not to come to the building during the above period unless they wish to participate in the fire drill.

We apologize for any inconvenience caused. For any clarifications on the fire drill, please contact Melvin DAI at 6516 8799



Open space between MD6, MD2 and MD3

The Department conducted our yearly fire drill in February 2016. Staff and students adhered the instructions from our fire wardens and left the building in a calm and orderly manner. Everyone gathered at the assembly point within approximately 3 minutes. Our new coordinator Dr Long Yun Chau later announced that the attendance was above 70%.

Upcoming event

Student Symposium 2016 | Friday 23 September 2016

There will be a Student Symposium in September 2016. (More information will be available soon).

Welcome to the family



Ren Bingbing Research Assistant RO: Dr Chen Ee Sin Date Joined: 07.09.2015



Luo Le Research Fellow RO: A/P Marie Clement Date Joined: 15.01.2016



Chin Ju Xin Research Assistant RO: A/P Matthew Chang Date Joined: 20.11.2015



Lim Li Rong Research Assistant RO: A/P Yew Wen Shan Date Joined: 20.01.2016



Lee Na Rae Research Fellow RO: A/P Matthew Chang Date Joined: 23.11.2015



Lee Zheng Wei Research Assistant RO: A/P Deng Lih Wen Date Joined: 25.01.2016



Teo Sin Yee Research Assistant RO: A/P Theresa Tan Date Joined: 14.12.2015



Theodora Chung Xue Ying Research Assistant

Research Assistant RO: Dr Kenneth Ban Date Joined: 23.02.2016



Jin Zhu Research Assistant RO: A/P Matthew Chang Date Joined: 08.01.2016



Li Yingying Research Fellow RO: Dr Wu Qiang Date Joined: 29.02.2016

*RO - Reporting Officer



Teo Li Ching Violet Senior Manager RO: A/P Markus Wenk Date Joined: 15.01.2016



Chen Yanan

Research Assistant RO: A/P Tang Bor Luen Date Joined: 01.04.2016



Anjanadevi Supamaniam Senior Assistant Manager RO: Ms Teo Li Ching Violet Date Joined: 28.03.2016

Baby Joy

Ian Alan Hadi

1st baby boy of Ms Fanny Ng, Laboratory Executive from A/P Tang Bor Luen's Lab.



Congratulations Fanny on your precious bundle of joy!

Farewell

It was a pleasure working with you and your loss will be greatly felt.

Thank you for your time and dedication while you worked for us. Best wishes as you embark on a new challenge.

Wang Zhengjie Benny

Aisha B Abdul Wahab



Find us on Google Play Store and Amazon App Store!

Google Play Store



Amazon App Store



If we missed any news that you would like to share, please contact: The Editorial Team, Biochemistry: bchsec@nus.edu.sg Advisor: Professor Markus Wenk Editors: Ms Violet Writer: Ms Fatin Designer: Ms Smita LD Narain Graphics: Designed by Freepik