LEADING THE WAY IN BIOMEDICAL SCIENCE

BIOCHEMISTRY BUZZ

July 2018 || Issue#29

National University of Singapore
Department of Biochemistry
Yong Loo Lin School of Medicine
Table of Contents

1. HOD’s Message
2. Staff Awards
3. Staff Promotions
4. Research Discovery
5. Grant Awards
6. Long Service Awards
7. Student Awards
8. Student Conferment
9. New Students
10. New Staff
11. Student Travel Fellowship
12. Core Facilities /Department Equipment Sharing
13. Events
14. Education Retreat
15. SLING- iSLS7
16. BiGSA Welcome Party
17. Staff Welfare
18. BiGSA Networking
19. Safety Tea
20. Skype Migration
22. Baby Joy
23. Farewell
Dear All,

Over the past half year, members of the Department have won numerous grant, teaching, long service and other awards of distinction; colleagues have been promoted and students graduated successfully. Heartiest congratulations again and please keep up the good work. Many thanks also to those involved in putting together the long list of achievements in the Biochemistry Buzz.

We have also enjoyed several events organized to exchange ideas on education, research, safety as well as general thoughts, e.g. over lunch. Exchange of ideas in relation to developments that affect the Department as a whole are increasingly important given the rapidly changing environment. Such an ‘upcoming trends’ event is in the planning phase with a new format to encourage participation and discussion.

A warm welcome to all new members of the Department. If I haven’t met you already, I certainly look forward to it during an upcoming gathering or one-on-one meeting.

Many thanks to all for their hard work and contribution to the Department. I wish you an enjoyable continuation of the semester break and look forward to seeing you again in the new semester.

All the best,
Markus
Professor Markus Wenk was bestowed the European Lipid Science Award 2018 by the European Federation for the Science and Technology of Lipids (Euro Fed Lipid).

Source

Professor Brian Kennedy received the Denham Harman Award for Research by American Aging Association.

Source

A/P Yeong Foong May was appointed as Fellow of the NUS Teaching Academy for 3 years effective 1 July 2018 to 30 June 2021.

A/P Theresa Tan was awarded the Yong Loo Lin School of Medicine Teaching Excellence Award for AY2016/2017.

Dr Kenneth Ban was awarded the Yong Loo Lin School of Medicine Teaching Excellence Award and Educator Award for AY2016/2017.
Staff Promotions

Dr Lee Seow Chong was promoted to Instructor effective 1 January 2018.

Mrs Long Lee Hua was promoted to Laboratory Manager effective 1 January 2018.

Mr Sim Yi Loong, Arthur was promoted to Laboratory Executive M2 effective 1 July 2018.

Mdm Fatihah Ithnin was promoted to Senior Assistant Manager effective 1 July 2018.

Research Discovery

Cocktail of bacteria and broccoli may keep cancer at bay

NUS researchers find a way to turn bacteria residing in human gut into a probiotic

SynCTI Team led by A/P Matthew Chang, discovered a way to turn a harmless cocktail of the common gut bacteria E.coli Nissle and broccoli into a potent anti-cancer mix. The concoction has been proven in the laboratory to kill off 95% of lab-cultured colon cancer cells.

Read More
<table>
<thead>
<tr>
<th>Grant Award</th>
<th>Recipient</th>
<th>Amount</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Evaluating the cardioprotective potential of ergothioneine against**     | **Professor Barry Halliwell**       | **$179,716.16** | **anthracycline cardiotoxicity**  
**NUHS Joint Grant Call (FY17 1st Call)** |}
| **Selective Contact-Active Cationic Antimicrobial Biomacromolecules**      | **A/P Gan Yunn Hwen**               | **$250,000** | (Theme II: Mechanistic Studies with Different Pathogens)  
**MoE Tier 3 Grant Call** |}
| **Peptide Ligase: Molecular Gluer for Proteins**                          | **A/P Too Heng-Phon**               | **$215,000** |  
**MoE Tier 3 Grant Call** |}
| **Repair through Direct Cardiac Reprogramming**                           | **Dr Jiang Jianming**               | **$550,000** |  
**OFIRG17may Grant Call (May 2017)** |}
| **Mechanisms of sphingosine-1-phosphate signaling in vascular health and** | **Dr Nguyen Nam Long**              | **$1,500,000** | **disease**  
**OFIRG17nov069** |}
| **Novel anti-oxidant and anti-inflammatory roles of Fam213a for kidney**   | **$179,900**                       |             | **functions**  
**T1-NUHS Joint Grant Call FY17** |}
| **Guiding T lymphocytes by sphingosine-1 phosphate to tissues to kill**   | **$25,000**                        |             | **cancers**  
**Cross-Faculty Research Grant for Interdisciplinary Research** |}
Long Service Awards

Mrs Tan Boon Keng

A/P Chua Kim Lee

A/P Tan Tin Wee

A/P Clement, Marie-Veronique
Mdm Qian Feng

Dr Lim Yoon Pin

A/P Thilo Hagen
Dr Irwin Cheah Kee-Mun
Dr Jeya Kumar s/o Ramalingam
Mdm Lim Sook Min Amanda

Dr Nguyen Nam Long
Dr Yap Lai Lai
Dr Lee Seow Chong
Biochemistry Graduate Student Association (BiGSA) in collaboration with Microbiology and Immunology Graduate Student Society (MIGSS) organised the 3 Minute Thesis Competition (3MT) held on 22 May 2018.

The 3MT aims to help students/staff to improve presentation skills, obtain better communication skills, develop the capacity to explain work in an effective manner, give participants a feel of what they can expect from the national contest. In addition, this format also help participants to know how to effectively communicate their research to non-science people. As part of the competition, students/staff are expected to present their thesis/work to an intelligent but non specialized audience in just 3 Minutes!!!
Student Conferment

Matias Jose Caldez, PhD
Main Supervisor: A/P Philipp Roland Kaldis
Conferred Date: 31/11/2017

Di Pascale Federica, PhD
Main Supervisor: A/P Prabha Sampath
Conferred Date: 31/12/2017

Ng Zhen Long, MSc
Main Supervisor: Dr Long Yun Chau
Conferred Date: 31/01/2018

Chow Ai Lee, PhD
Main Supervisor: Dr Long Yun Chau
Conferred Date: 31/3/2018

Deepa Rajagopalan, PhD
Main Supervisor: Dr Sudhakar Jha
Conferred Date: 31/3/2018

Tay Song Buck, Terrence PhD
Main Supervisor: A/P Yew Wen San
Conferred Date: 31/12/2018
<table>
<thead>
<tr>
<th>Name</th>
<th>Degree</th>
<th>Main Supervisor</th>
<th>Co-Supervisors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthony Moises Torres Ruesta</td>
<td>PhD</td>
<td>A/P Lisa Ng Fong Poh</td>
<td>A/P Gan Yunn Hwen</td>
</tr>
<tr>
<td>Jayashree D/O Selvalatchmanan</td>
<td>PhD</td>
<td>Dr Federico Tesio Torta</td>
<td>Prof Markus Wenk, Dr David Bradley</td>
</tr>
<tr>
<td>Lam Tsz Fung</td>
<td>PhD</td>
<td>Dr Chen Ee Sin</td>
<td>A/P Tan Tin Wee</td>
</tr>
<tr>
<td>Lee Hui Ling</td>
<td>PhD</td>
<td>A/P Chang Matthew Wook</td>
<td>A/P Yew Wen Shan</td>
</tr>
<tr>
<td>Johann Shane Tian</td>
<td>PhD</td>
<td>Dr Sudhakar Jha</td>
<td>A/P Caroline Lee</td>
</tr>
<tr>
<td>Ran Xuebin</td>
<td>PhD</td>
<td>Dr Sudhakar Jha</td>
<td>Prof H Phillip Koeffler, Prof Chng Wee Joo</td>
</tr>
<tr>
<td>Sheng Taotao</td>
<td>PhD</td>
<td>Dr Sudhakar Jha</td>
<td>Prof Patrick Tan, A/P Too Heng-Phon</td>
</tr>
<tr>
<td>Farhana Tukijan</td>
<td>PhD</td>
<td>Dr Nguyen Nam Long</td>
<td>Prof Markus Wenk</td>
</tr>
</tbody>
</table>
Tang Jia Ying
Research Assistant
RO : Dr Cheong Jit Kong
Date Joined : 01-05-2018

Ding Mei
Research Assistant
RO : Professor Markus Wenk
Date Joined : 18-06-2018

Nguyen Thi Thuy Trang
Teaching Assistant
Change of Track
RO : A/P Yeong Foong May
Date Joined : 01-02-2018

Gaynor Yong Li Li
Senior Manager
RO : A/P Matthew Chang
Date Joined: 15-01-2018

Zeng Renhuang Gabriel
Senior Assistant Manager
RO : Ms Gaynor Yong Li Li
Date Joined : 09-05-2018

Ng Tee Kheang
Senior Lab Executive
Change of Track
RO : A/P Matthew Chang
Date Joined : 19-03-2018

Steffie Whaung Shih-Teen
Laboratory Technologist
RO : A/P Yew Wen Shan
Date Joined : 18-06-2018

Bhanumati Kandasamy
Operations Associate
RO : Mrs Long Lee Hua
Date Joined : 18-06-2018
From the talks, I learned many areas of RNA biology which were not just confined to cancer. These helped me widen my perspective and provided me with more choices of RNA research beyond cancer. In addition, some of the talks integrate the different areas of research, for example, regulation of DNA or protein by RNA. There were a few talks that offered online tools for prediction of RNA structure and RNA-binding proteins. This could help me with my project. The most important learning point was the cis- and trans-regulation of noncoding RNAs.

Through this conference, I received many suggestions on how to improve my project. In addition, I met Professor Bushell from University of Leicester, United Kingdom, who was very interested in my project and offered potential collaboration.
Droplet Digital PCR: The Third Generation of PCR

The BioRad QX200 AutoDG Droplet Digital PCR (ddPCR™) System provides absolute quantification of target DNA or RNA molecules for EvaGreen or probe-based digital PCR applications. The advantages of this system includes:

- Most precise and sensitive digital PCR solution for a wide variety of applications
- Flexible digital PCR chemistry — optimized for TaqMan Hydrolysis Probe and EvaGreen Assays
- Flexible assay setup — scalable for high sensitivity or high throughput
- Simple and easy-to-use workflow with 96-sample throughput
- Droplet partitioning by the QX200 Droplet Digital technology reduces bias from amplification efficiency and PCR inhibitors
- Convenient assay design — standard curves are not required

The QX200 Droplet Generator is used to partition ddPCR reaction mix into thousands of nanoliter-sized droplets. After PCR on a thermal cycler, droplets from each sample are analyzed individually on the QX200 Droplet Reader. Droplets are read well by well as they are streamed single file past a two-color optical detection system in a serial manner. Up to 96 samples can be processed per run. The PCR-positive and PCR-negative droplets are counted to provide absolute quantification of target DNA in digital form. Alternatively, amplified products can be extracted from droplets following PCR for downstream applications, such as sequencing or cloning.
The Olympus FV1200 Laser Scanning Confocal Microscope is equipped with 4 lasers (namely 405 nm, 473 nm, 543 nm and 635 nm) and 5 objective lens [namely 10X, 20X, 40X, 60X (oil) and 100X (oil)]. The FV1200 Confocal Microscope offers excellent precision, enhancing sensitivity and stability with an advanced optical system, scanners and detection system, and provides users with new opportunities in live cell imaging. The Fluoview software is user-friendly and offers quick access to functions and for image acquisition.

The QX200 AutoDG Droplet Digital PCR System simplifies the Droplet Digital PCR (ddPCR™) workflow, reducing hands-on time and eliminating user-to-user variability.

- Eliminates user-to-user variability — creates more consistent droplet counts across users and plates, enabling you to fully exploit the precision of your ddPCR System
- Minimizes hands-on time — takes less than 5 minutes to load the instrument, and droplet generation requires no supervision

FV1200 Olympus Confocal Microscope

The Olympus FV1200 Laser Scanning Confocal Microscope is equipped with 4 lasers (namely 405 nm, 473 nm, 543 nm and 635 nm) and 5 objective lens [namely 10X, 20X, 40X, 60X (oil) and 100X (oil)]. The FV1200 Confocal Microscope offers excellent precision, enhancing sensitivity and stability with an advanced optical system, scanners and detection system, and provides users with new opportunities in live cell imaging. The Fluoview software is user-friendly and offers quick access to functions and for image acquisition.
On 12th Jan 2018, the department held its Education retreat with the objective of coming together to discuss matters concerning education. The main aims of the retreat were to:

1. Find concrete ways to support teaching and learning activities among our colleagues to help us meet students’ learning needs.

2. Foster discussion about teaching matters among colleagues to try and build a culture of sharing good practices and experiences as a way to support one another.

3. Discuss issues related to graduate student supervision so as to improve student experiences during their post-graduate studies.

4. Hear from the Associate Provost (Undergraduate Education), A/Prof Chng Huang Hoon, ideas about teaching in a research-intensive university. Her talk was followed by a question-and-answer session.

During the retreat, we heard ideas from colleagues on topics ranging from classroom teaching techniques to assessments to tips on student supervision. We also identified a few tasks we could work on to help support colleagues in their teaching and learning activities. For instance, we have collated a list of classroom response systems (CRSs) that are commonly used and their users so as to help colleagues interested in using them in their classes (list of CRS). We are looking to organising other activities such as workshops as discussed in the retreat.

The committee would like to thank all colleagues for their contributions to ideas and discussions.

**Organising committee:**
- A/P Thilo Hagen
- Dr Long Yun Chau
- Dr Yvonne Tay Mei Sian
- A/P Yeong Foong May (Contributor)
iSLS7 (7 - 9 March 2018)
iSLS has become a regular event in the field of lipid research. iSLS has been founded on the premise to provide a forum for exchange of knowledge and information among investigators from different disciplines of research but with a common interest in lipids. This has been a very stimulating format indeed.

This year, at iSLS7, we have had increased focus on expertise required for translation of information obtained by the usage of analytical approaches that yield molecular information of lipids. We have also modernised our event for further engagement ‘on-site’ as well as for ‘off-site’ participation of colleagues who could not make the trip to Singapore. This was done via web-links and interactive Q&A platforms. Furthermore, several open discussions were held throughout the symposium on topics of wide general interest in the field of lipid research and the advancement of lipidomic technologies, again assisted by an interactive Q&A platform.

The Journal of Steroid Biochemistry and Molecular Biology will be publishing a Special Issue, “The international Singapore Lipid Symposium (iSLS) - a forum towards translation of lipidomic technologies” with Professors Peter J Meikle, Markus R Wenk and Jerzy.
Biochemistry Welcome Party 2018 [13 March 2018]

To inaugurate its series of events for this year, the Biochemistry Graduate Student Association (BiGSA) aimed at surpassing their past welcome party event. Intended to bring together the graduate students who started Aug 2017 and Jan 2018, the objective of the organisers was to offer first year graduate students a platform for forming new connections and settle in the university environment. On top of that, they also had the chance to mingle and interact with senior PhD students in hope of gaining insight into overcoming challenges as a graduate.

The event commenced with a warm and inspiring welcome speech from A/P Thilo Hagen. Soon after, students engaged in various icebreaking activities prepared by the coordinators. Whether it was ‘Two Truths One Lie’ or a dynamic team-building game of ‘Charades’ which eased up the atmosphere, participants managed to have fun, relax and even win a prize of a total of $50 Jewel vouchers, that the winning team kindly shared equally among every contestant. The evening culminated with the closing speech of Ms. Liew Wen Chiy, the President of BiGSA, followed by the long-anticipated sponsored dinner.
Altogether, the planning and hard-work proved worthwhile since everybody benefited from an enjoyable night. Following this outstanding success, the committee hopes to keep up their events line-up as exciting and valuable for the upcoming as well as current biochemistry students.

Contributed by BiGSA
The Peranakan Experience was another warmly received event. The day started with an assortment of Nyonya kueh for breakfast, with everyone in the department mingling while enjoying the kueh. Yee Liu kindly sourced for songs that really added to the atmosphere of the morning.

We were then whisked off to StraitsKitchen at Grand Hyatt, where even more food awaited! The food highlighted not only the local Chinese, Indian, and Malay races, but Peranakan cuisine as well. The journey through the StraitsKitchen buffet was almost like a Singaporean gastronomic tour.
Before the day ended, we had our final stop at the Peranakan Museum. Guided though the collection of Peranakan treasures that the museum housed left us amazed at the life of a Peranakan. The quiz put together by the Staff Welfare Committee had many people enthusiastically scrutinizing the exhibits for clues that would otherwise have been overlooked.

All in all, it was certainly an in-kueh-dible (incredible) event!

Remember to tag us at #bchnus #staffwelfare in future events~

Contributed by Mr Arthur Sim, Staff Welfare Commitee
BiGSA Networking Series: What’s Next After PhD {4 April 2018}

Besides publishing in high-impact journal and passing oral defence, the other major concerns for most PhD students are, ‘What should I do after PhD?’, ‘Should I stay in academia or move into industry?’, ‘What other job roles should I consider?’ etc.

To address these questions, Biochemistry Graduate Student Association (BiGSA) organized the first networking event called ‘BiGSA Networking Series: What’s Next After PhD’. The aims of this event were to expose graduate students to different career paths after PhD and provide an opportunity for students to practise their networking skills with PhD graduates working in diverse fields.

We were very grateful to our esteemed speakers - Dr Matias Caldez (Research Fellow at Institute of Molecular and Cell Biology, A*STAR), Dr Sandhya Sriram (CEO at SciGlo), Dr Jaron Liu (Lead Applications Scientist at GE Healthcare), Dr Lim Keng Gat (Senior Medical Science Liaison at Johnson & Johnson) and Dr Hua Fei (Consultant at IQVIA) - for sharing their stories about their post-PhD journeys. They also shared tips on job searching and provided invaluable career advices on how to succeed in their respective careers. During the dinner-cum-networking session, students got the chance to interact with the speakers directly to gain more insights on the fields that they are interested in.

Overall, the event showcased a diverse range of career options that are available for graduates with advanced degrees in biomedical sciences. The speakers emphasized the importance of networking as one of the keys for job hunting and career development. It is also essential to have a clear evaluation of your motivation, strengths and weaknesses in order to find a suitable job.

Our event was hugely popular, which led to it being oversubscribed. It was very encouraging for the organizing team to receive a lot of positive feedback from the participants on how well-organized the event was and how much they learnt from the speakers. We appreciate the tremendous support from the participants and the speakers.

Contributed by BiGSA
Attendees of the event

Dr Matias Caldez
Dr Sandhya Sriram

Welcome address by A/P Maxey Chung

Dr Hua Fei
Dr Jaron Lin

Closing speech by Miss Liew Wen Chiy
Dr Keng Gat Lim
Safety Tea {25 April 2018}

The first Department of Biochemistry Safety Tea in 2018 was held on 25th April 2018 and was well attended by more than 140 participants.

Professor Markus Wenk, the Head of Department, gave the opening speech and encouraged everyone to uphold the high standards of safety & health in the department. Dr Kenneth Ban presented on the department’s Safety & Health Objectives for 2018 and also briefed everyone on the Laboratory Materials Management System (LMMS) which will be rolled out in NUSMed very soon.

Dr Ban also shared information on compliance to the Biological Agents and Toxins Act (BATA) as well as accidents and incidents that occurred in the department in the past 6 months. Dr Ban created a live platform for participants to share feedback and ideas during the Safety Tea and this was well-received. The Safety Tea ended with a sumptuous spread of cooked food, snacks, desserts, and of course, coffee and tea.

Contributed by Dr Yap Lai Lai, Department Safety Commitee
After much anticipation, finally!, the department has successfully migrated to Skype for Business (SFB) on 12 June 2018. Users who used the previous IPTel phones have exchanged for the more sleek Polycom phones. SFB representatives were seen around Biochemistry’s facilities to exchange and boot up the new equipment. Brand new Jabra headsets were issued to staff who opted for no phones.

SFB allows you to share ideas instantly via instant messaging, meet on-the-go at anytime and anywhere, allow content sharing and many other features. Visit the SFB web portal to learn more about Skype for Business.

We also would like to thank the floor leaders for their assistance during this migration.
Research Publications

Extracted from NUS Elements, journal articles reporting date from 1 September 2017 – June 2018


Musa Alamudi Bachtiar
18 January 2018
Maulana Bachtiar’s new born baby boy
- Research Fellow -

Avery Chew
22 April 2018
Wang Yuwei, Cheryl’s new born baby girl
- Lab Executive -
<table>
<thead>
<tr>
<th>Employee Name</th>
<th>Last Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lo Tat Ming, Samuel</td>
<td>15 September 2017</td>
</tr>
<tr>
<td>Arun Chandramohan</td>
<td>1 November 2017</td>
</tr>
<tr>
<td>Johann Shane Tian</td>
<td>31 December 2017</td>
</tr>
<tr>
<td>Maciej Bartosz Holowko</td>
<td>5 January 2018</td>
</tr>
<tr>
<td>Kuek Huifang</td>
<td>16 January 2018</td>
</tr>
<tr>
<td>Lee Ming Chong, Ivor Russel</td>
<td>26 January 2018</td>
</tr>
<tr>
<td>Neo Sin Hui</td>
<td>26 January 2018</td>
</tr>
<tr>
<td>Ren Bingbing</td>
<td>1 February 2018</td>
</tr>
<tr>
<td>Pranjul Mishra</td>
<td>2 February 2018</td>
</tr>
<tr>
<td>Jean, Ang Shy Min</td>
<td>12 February 2018</td>
</tr>
<tr>
<td>Ooi Pei Kun</td>
<td>15 February 2018</td>
</tr>
<tr>
<td>Narain Luxmi Devi</td>
<td>28 February 2018</td>
</tr>
<tr>
<td>Liu Shuaichen</td>
<td>15 April 2018</td>
</tr>
<tr>
<td>Chen Binbin</td>
<td>18 May 2018</td>
</tr>
<tr>
<td>Yu Sue</td>
<td>31 May 2018</td>
</tr>
<tr>
<td>Wu Hui</td>
<td>1 June 2018</td>
</tr>
<tr>
<td>Ryan John Clarke</td>
<td>15 June 2018</td>
</tr>
<tr>
<td>Yang Xiaoqing</td>
<td>30 June 2018</td>
</tr>
</tbody>
</table>

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
EDITOR: Ms Violet
WRITER: Ms Fatin
DESIGNER: Ms Rahmah